Bibliography of Indonesian Geology

# BIBLIOGRAPHY OF THE GEOLOGY OF INDONESIA AND SURROUNDING AREAS

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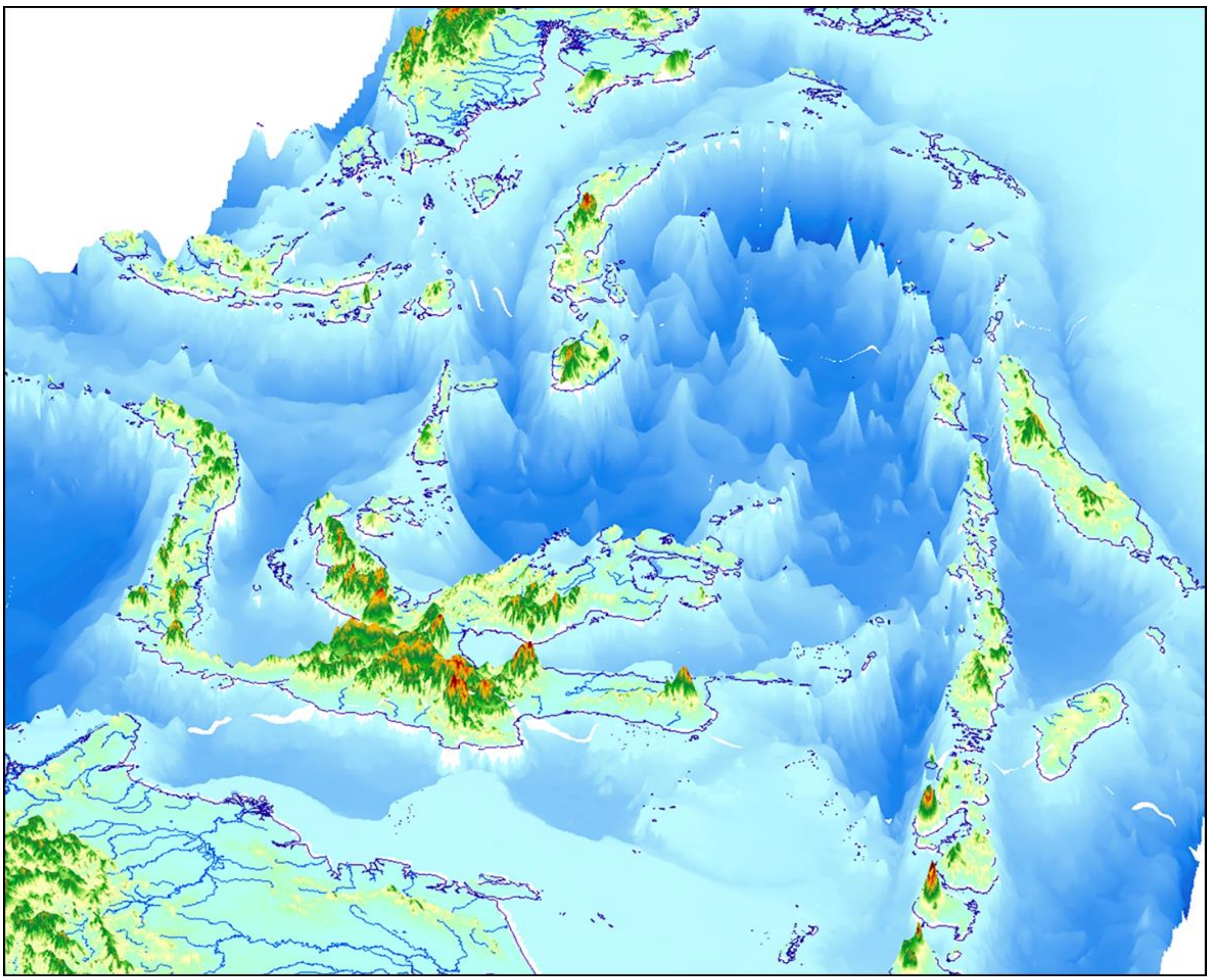
J.T. VAN GORSEL

## VII. BANDA SEA, LESSER SUNDA ISLANDS (incl. Timor)



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# VII. BANDA SEA, LESSER SUNDA ISLANDS



This chapter VII of Bibliography 7.0 contains 193 pages and >1200 titles on the deep basins of the Banda Sea region as well as the geology of the 'Lesser Sunda Islands', which include islands of the active East Sunda- Banda volcanic 'inner arc' (Flores, Sumbawa, etc.) and the non-volcanic 'outer arc' (Timor, Sumba, etc.). It is subdivided into five chapters, VII.1- VII.5.

The key elements of this southeastern part of Indonesia from the Banda Seas outward are:
1. Neogene 'back-arc' marginal oceanic basins (North and South Banda Seas, Weber Deep);
2. the East Sunda- Banda active volcanic arc, extending from Bali to Ambon;
3. 'non-volcanic outer arc' islands Sumba, Timor, Roti, Leti, Tanimbar, etc. (forearc and accretionary prism);
4. the Tanimbar- Timor Aru Trough outboard of the outer arc (eastern continuation if the Java Trench and now a fossil subduction trench).


*Figure VII.1. Main tectonic elements and some locality names of Banda Sea region.*

The outer arc islands are parts of a long fold-and-thrust belt, from Roti-Timor to Seram-Buru. Outcrops closest to the Timor- Tanimbar trench are parts an imbricated accretionary prism, composed of dominantly deep marine sediments scraped off subducted Indian Ocean floor sediments and cover of subducted continental crust of the distal NW Australian margin. Closer to the Banda Sea the islands also host volcanic, metamorphic, ophiolitic and sedimentary units that have no apparent relation to the NW Australian margin, but are elements of the forearc of the Banda Arc.

Where Australian continental crust has arrived at the subduction zone (Roti-Timor and farther East), the collision zone includes uplifted parts of the forearc of the overriding Banda Arc plate ('Banda Terrane').

### *VII.1. Banda Sea, East Banda Arc (incl. Tanimbar, Kai, Aru, etc.)*

Sub-chapter VII.1 contains 162 references on the geology of the Banda Sea, as well as some of the non-volcanic outer arc island groups like Tanimambar, Kai and Aru.

The most prominent features in this area are the active Banda Arc, the deep Banda Sea marginal oceanic basins and the non-volcanic outer arc islands, from Sumba, Timor to the Tanimbar and Kai Islands (Figures VII.1.1, VII.1.3).

Most or all of the Banda arc was built on oceanic crust, above the north-dipping Indian Ocean/ Cenotethys subduction zone. Oceanic crust has now been consumed completely from Sumba east to New Guinea.

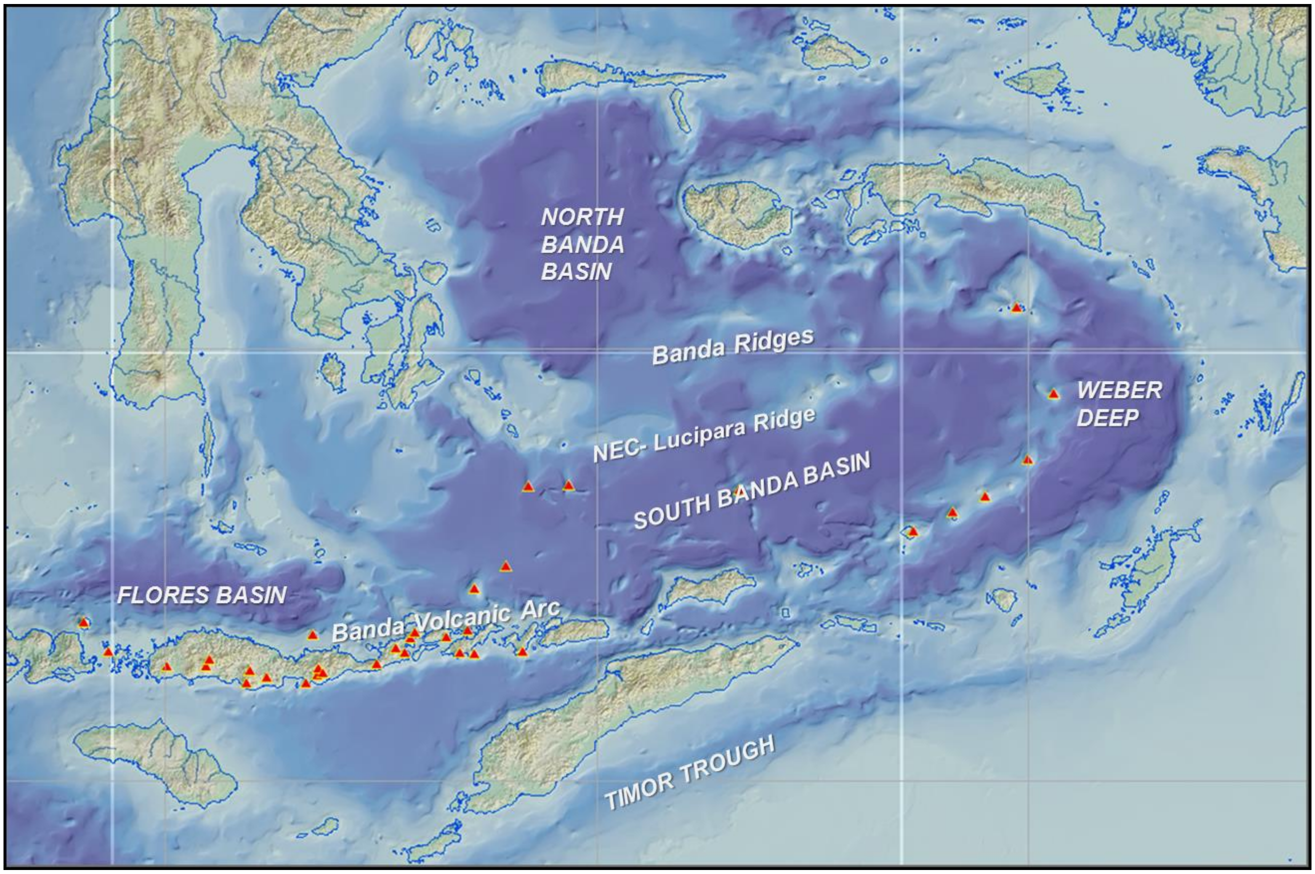


*Figure VII.1.1. Bathymetric map showing North and South Banda Sea basins behind the curved volcanic Inner Banda Arc, and the Weber Deep basin between the volcanic arc and the non-volcanic Outer Banda Arc. Red triangles are active volcanoes.*

#### *North and South Banda Seas Neogene basins*

There have been several theories on the origin of the deep Banda Sea. Verbeek (1908) noticing major extensional features along the islands surrounding the Banda Sea, (correctly) saw it as a collapsed structure. Abendanon (1919), struck by the presence of crystalline schists in much of E Indonesia, saw it as a sunken part of a large old Paleozoic continent that he named Aequinocta.

In the 1970's it was generally recognized that the North and South Banda Seas were underlain by oceanic crust (e.g. Curray et al. 1977), but age of this crust was unknown. A theory popular in the 1980's was that the Banda Sea represented a trapped piece of Indian Ocean plate, of Early Cretaceous age (Bowin et al. 1980, Lee and McCabe 1986, Hartono 1990). This idea was mostly driven by water depths down to 5000m in the South Banda basin, which is deeper than 'normal' Tertiary oceanic crust.

Hamilton (1978) was the first to suggest formation of the Banda Sea by Neogene oceanic backarc spreading behind the Sunda- Banda Arc. This concept was accepted by Norvick (1979), Nishimura and Suparka (1990), Milsom (2000) and others (Figure VII.1.2).

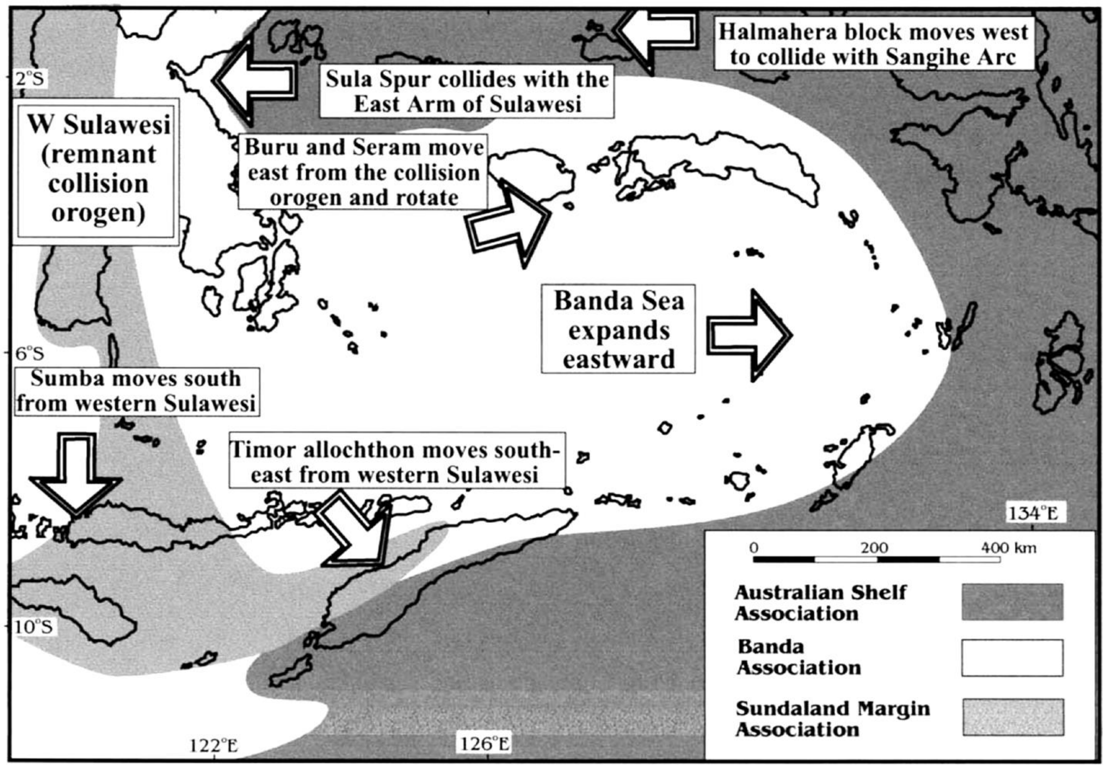


*Figure VII.1.2. Milsom (2000) model of opening of Banda Sea, based on observation that tectonostratigraphies of Sumba, allochthonous Banda Terrane of Timor and Buru-Seram all suggested they were part of the Sulawesi collisional belt before Neogene.*

The age of the Banda Sea basins seafloor is now generally viewed as Late Miocene- Early Pliocene, as documented by seafloor dredging and magnetic survey programs by French groups in the 1990's- early 2000's (Rehault et al. 1994, Hinschberger et al. 1998-2005, etc.). (Figure VII.1.3.). The driving force of the extension is rollback of old, N-ward subducting Indian Ocean slab (Milsom 1999, 2000, 2001, Hinschberger et al. 2003, 2005, Harris 2006, Spakman and Hall 2010, Pownall et al. 2016).

The crust below the Banda Sea seafloor is probably a mix of newly created Neogene oceanic crust, but with isolated remnants of extended older crust: (1) upper crustal blocks of continental and volcanic arc material (Banda Ridges) and (2) metamorphic core complexes of hyperextended lower crust.

Part of the North Banda Sea basin may have been partly consumed already under the Tolo Thrust off East Sulawesi.

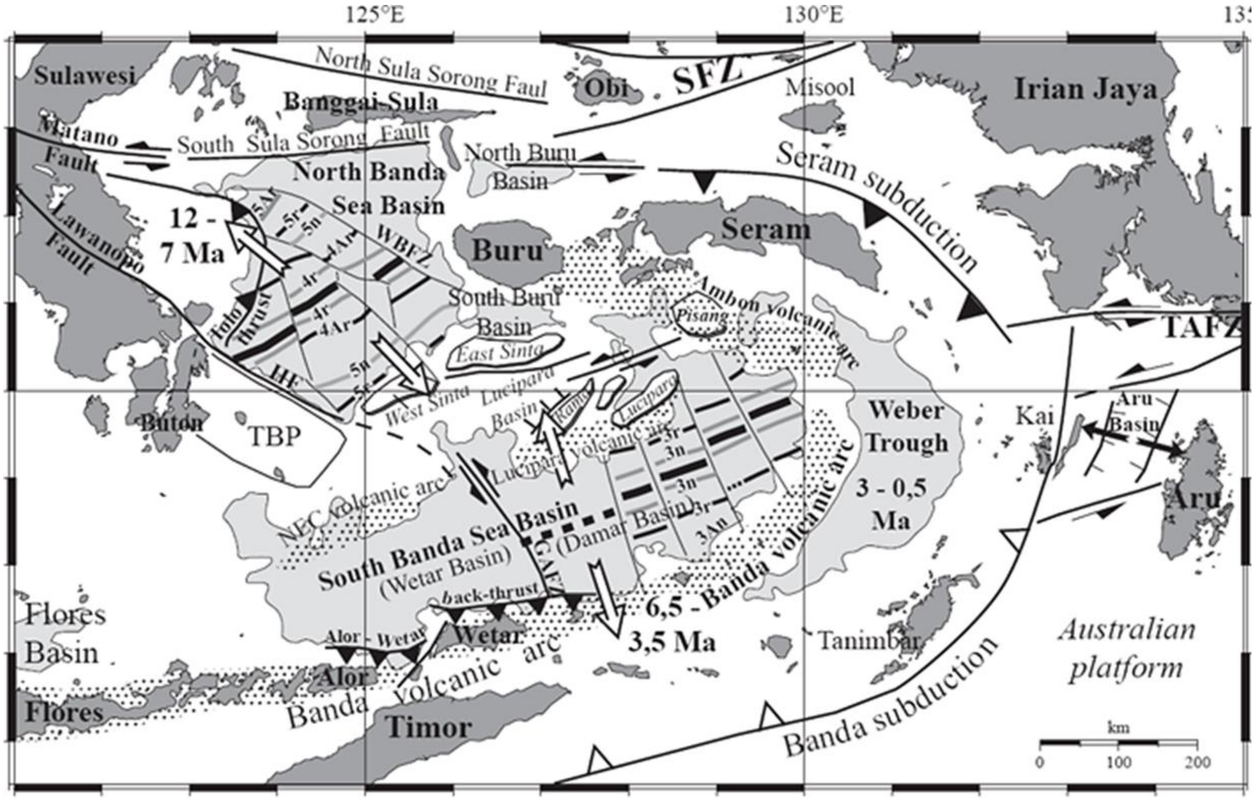


*Figure VII.1.3. Banda Sea area (Hinschberger et al. 2005). Showing (1) Banda-Ambon volcanic arc(s), (2) back-arc North and South Banda basins with ocean floor magnetic lineations and interpreted Late Miocene-Early Pliocene (12- 3.5 Ma) ages, (3) very young and very deep Weber Trough.*

### *Banda Ridges*

The North and South Banda Seas are sepaprated by a goup of submarine highs, known as the 'Banda Ridges'. They include the Lucipara, Sinta, Rama and Pisang Ridges (e.g. Hinschberger et al. 2003, 2005).

Dredge samples yielded a variety of rocks, including metamorphic rocks, arc volcanics, Triassic and Oligocene limestones, etc., suggesting the Banda Ridges are:

1. Remnants of small blocks of thinned continental crust rifted off East Sulawesi (Silver et al. 1985, Villeneuve et al. 1994, Cornee et al. 2002). Sinta, Rama, Pisang Ridges); some with Late Triassic limestones);
2. Relict Late Miocene- Early Pliocene-age volcanic arc (NEC- Lucipara volcanic arc), with K-Ar age around 6-7 Ma (Silver et al. 1985) (Figure VII.1.1).

Upper Triassic reefal limestones were dredged from the Sinta Ridge (Villeneuve et al. 1994), mid-Oligocene reefal limestones from the Pisang Ridge (Cornee et al. 2002).

Metamorphic rocks dredged from the ridges include phyllites and ampholites with K-Ar ages of 22 and 11 Ma (Silver et al. 1985).

### *Banda Arc*

The active Banda Volcanic Arc is the inner of two rows ('arcs') of islands surrounding the Banda Sea; the 'outer arc' mainly represent uplifted parts of the accretionary prism (.Figure VII.1.4). The present cycle of arc volcanism probably started in Late Miocene time, around 10-12 Ma (Abbot and Chamalaun 1981, Scotney et al. 2005, etc), but perhaps most active since ~4 Ma. The oldest dated volcanic rocks on Wetar are ~12 Ma old (Abbott and Chamalaun,1981).

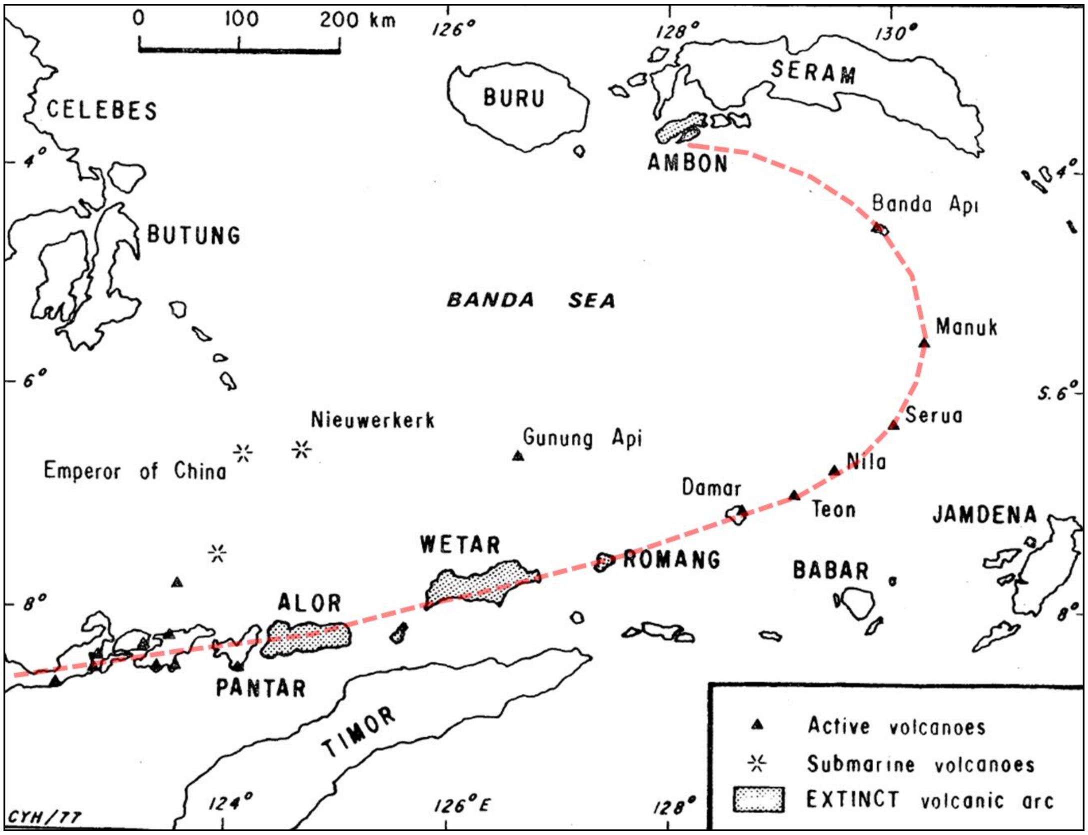


*Figure VII.1.4. Active volcanoes (triangles) and extinct segment of Banda volcanic arc (Hutchison (1977).*

The Banda Arc is built mainly on oceanic crust, although the western Banda Arc- East Sunda Arc also have remnants of the latest Oligocene- Early Miocene 'Old Andesites' volcanic arc (south sides of islands of Sumbawa- Flores and islands further West). Seismic refraction work suggests Flores was probably built on 5-10 km thick oceanic crust (Curray et al. 1977, Muraoka et al. 2002).

Numerous papers have been published on geochemistry of its volcanic rocks (see table and listing below). Helium isotopes suggest contamination of Australian continental crustal material in Quaternary arc volcanics as far West as Central Flores (Hilton et al. 1992).

The size of the Banda arc volcanic islands appears to gradually diminish in an easterly direction, from the >3000m high volcanoes on Bali and Lombok to low-lying edifices in the eastern Banda Sea (e.g. Figure VII.1.4 and front cover figure). Howevever, the volcanoes in the western part of the East Sunda- West Banda Arc are probably built on older mid-Tertiary arc crust, while volcanoes in the easternmost sector are built on >3000-4000m deep ocean floor, so the volume and vertical relief of these 'small' volcanic edifices is actually similar to that of much taller volcanoes in the West. (e.g. Figure VII.1.5).

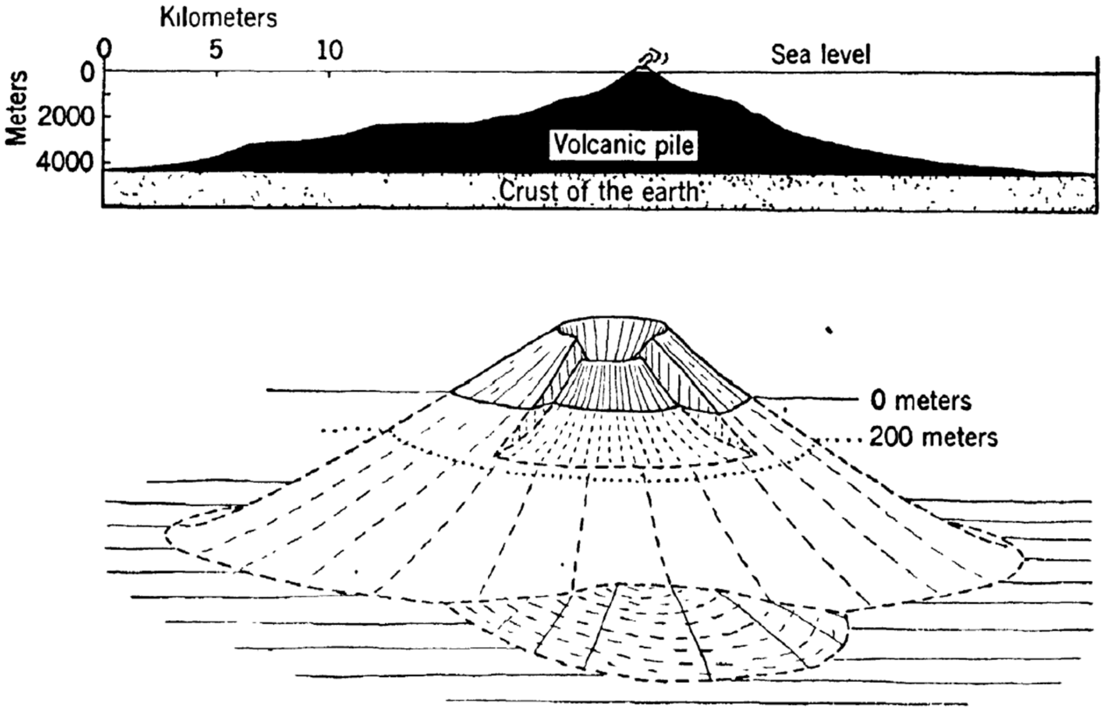


*Figure VII.1.5. True-scale section (top) and schematic block diagram (bottom) of the active Gunung Api volcano in the Banda Sea, North of Wetar. The top of Gunung Api is only 282m above sea level, but measured from the surrounding ocean floor, the height of the volcano is >4000m (from Kuenen 1950).*

***Weber Deep***

The Weber Deep or Weber Trough is a highly unusual feature. It is an anomalously deep oceanic through, deeper than anything in the Indonesian region (down to ~7400m; Figure VII.1.6.). Unlike the Banda Sea basins, it is located in a forearc position, between the eastern Banda Arc (where Serua- Manuk- Banda volcanoes rise from 3000m deep seafloor), and the Tanimbar- Kai - Seram outer arc islands.

Pownall et al. (2016) recently proposed a new model for the Weber Deep, suggesting it is a young hyperextensional basin, related to SE-ward rollback of the Australian- Indian Ocean subduction zone, leaving the 450km long low-angle detachment fault plane exposed on parts of the Weber Deep floor, showing a grooved surfaces like seen on the top of metamorphic core complexes. Slip along the fault must have been >120km. This model suggests the Weber Deep may not be floored by new oceanic crust, but by hyperextended lower crust metamorphic rocks or by exhumed upper mantle ultramafic rocks.

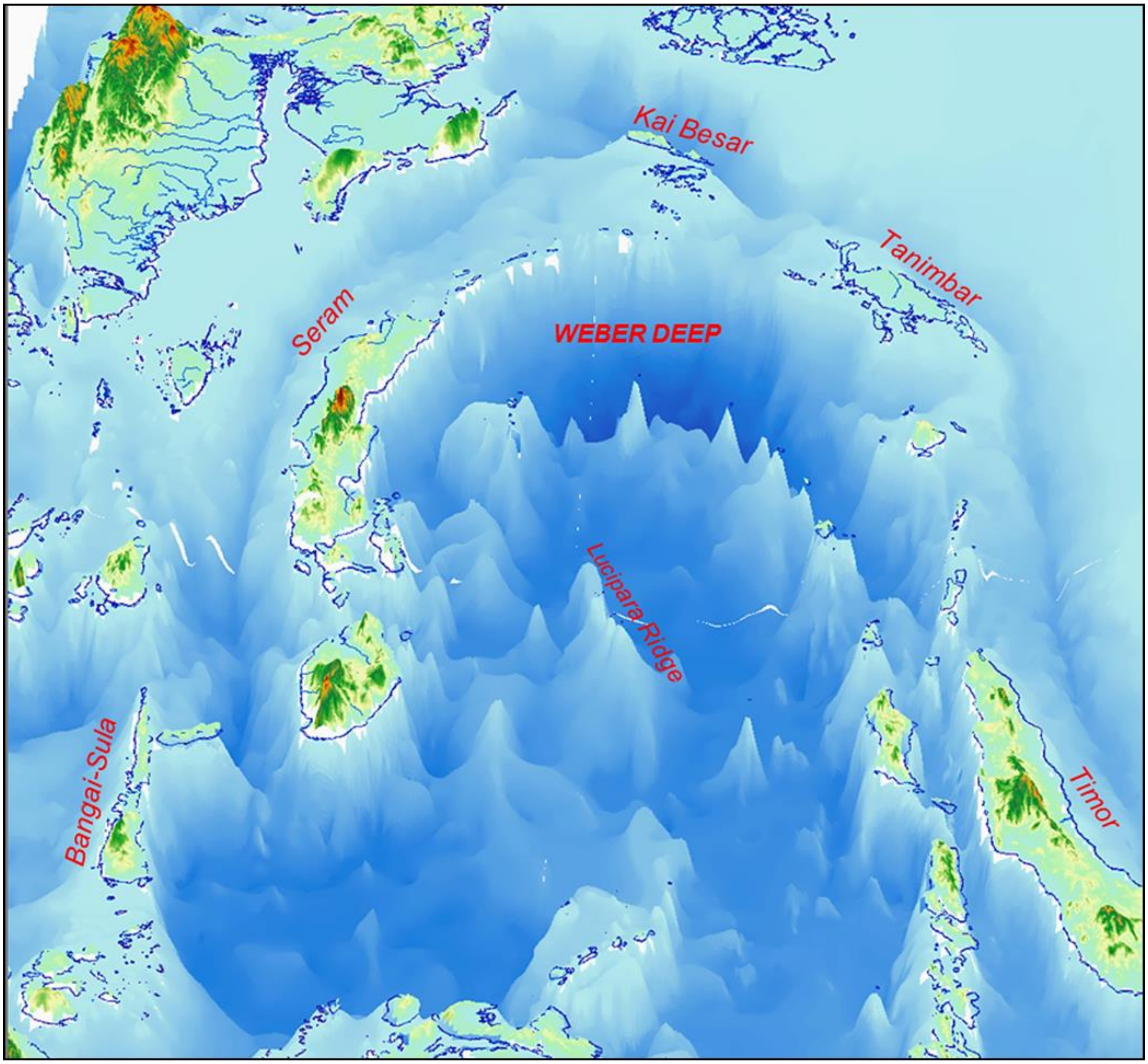

*Figure VII.1.6. Topography and bathymetry of Banda Sea region, looking East*

***Outer Arc (Tanimbar- Kai islands)***

The 'non-volcanic outer arc' also includes the small islands of Babar, Dai and the Tanimbar and Kai groups. These are relatively little studied. They are mainly a continuation of the forearc-accretionary system of Timor, with Triassic-Jurassic and younger sediments, folded and thrusted towards the Australian craton. On the islands closest to the Banda Sea metamorphic and ultrabasic rocks are common, a pattern similar to that seen on the Banda Sea sides of Timor and Seram.

The Kai Archipelago appear to represent three different geological provinces (cross-section of Figure VII.1.7):

1. East (Kai Besar): rifted block off Australian continental margin (Kai Besar 1 well has >1300m of little deformed Middle- Jurassic- Cretaceous sediments characteristic of the NW Australia- West Papua margin). With large scale, young extensional faulting;
2. Central province (Kai Kecil, Kai Dulah and Tayandu islands): continuation of the Banda Outer Arc accretionary prism,
3. Western (small islands Kur, Fadol, Tibor, etc.): small islands with common allochthonous material, like ophiolites, metamorphics, Early Oligocene arc volcanics, etc..('Banda Terrane?; similar to Leti and North Timor further West)

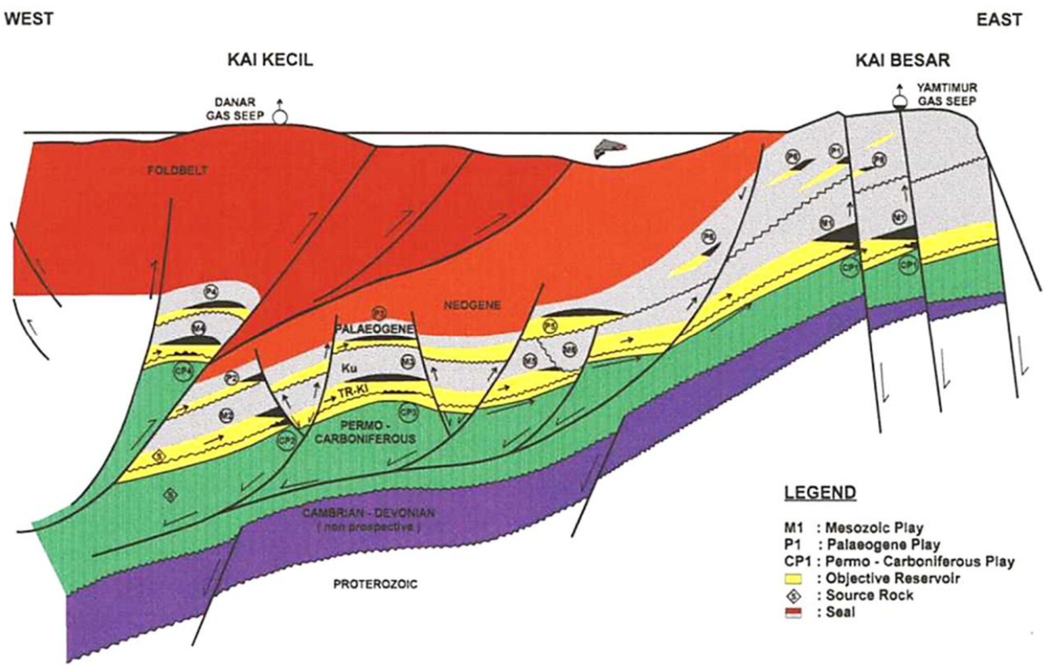


*Figure VII.1.7. Schematic cross-section across Kai islands: Kai Kecil is part of the Outer Banda Arc foldbelt/ accretionary prism, Kai Besar is part of a partly subducted continental block that rifted from the NW Australian margin (Union Texas 1997).*

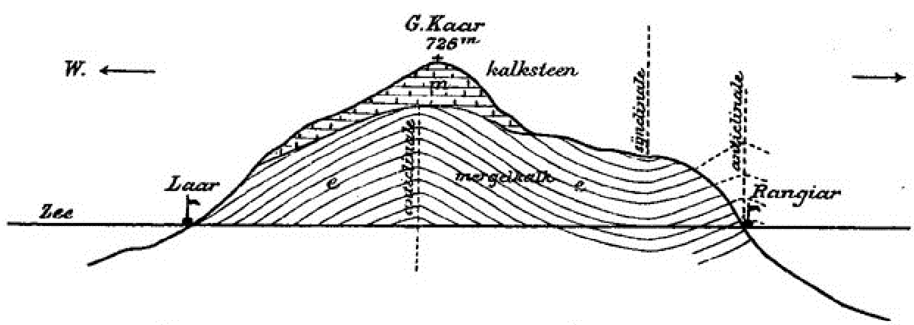


*Figure VII.1.8. Historic W-E cross-section through Kai Besar, showing weakly folded, mainly 10° W-dipping, Eocene marly limestone, overlain by Miocene and younger reefal limestone terraces (Verbeek 1908).*

The eastern zone of the Kai islands (Kai Besar) was not involved in thrusting. Instead, it appears to be a fragment of the Australian continental margin that experienced extensional faulting and underwent 2km of uplift in the last 10 My (Van Marle and De Smet, 1990). It looks like a rift shoulder at the W side of the Aru Trough, which is a very young and deep extensional basin.

Kur Island is located West of the Kai Islands but East of the Weber Deep. It has a small core of foliated Mesozoic gneiss and schists, covered by Early-Middle Miocene sandy limestone and surrounded by six uplifted Quaternary reef terraces (Figure VII.1.9) (Weber in Umbgrove 1934). The metamorphic core gave Early Miocene cooling ages of 24-17 Ma (Honthaas et al. 1997).

Possibly comparable situations suggesting a Late Oligocene- earliest Miocene exhumation event, and possible affiliation with the 'Banda Terrane' of Timor were observed in:

1. dredge sampling site Dr 201 (4250-3663m), SSW of Kur, where micaschists/ gneiss is overlain by polymict conglomeratic sands with Early Miocene (Te4-Te5; with larger forams *Spiroclypeus, Miogypsinoides dehaarti*) (Honthaas et al. 1997).

2. Leti island NE of Timor, where Brouwer and Molengraaff (1915) reported ultramafic and metamorphic rocks apparently overlain by latest Oligocene- earliest Miocene (Te4-Te5) limestones with *Miogypsinoides* and *Spiroclypeus* (see also VanGorsel 2012).

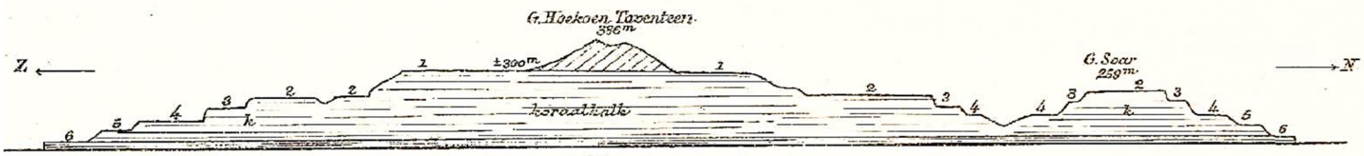


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*Figure VII.1.9. Historic S-N cross-section through Kur Island (West of Kai islands), showing six Quaternary reef terraces up to 300m elevation, and core of dipping mica schist and ?Miocene micaceous sandstones (Verbeek 1908).*

***Suggested reading- Banda Sea- East Banda Arc*** *(not a complete listing of all relevant papers)*

| | |
|---|---|
| Banda Sea region-General | *Umbgrove 1948, Bowin et al. 1980, 1981, Jongsma et al. 1989, Hartono 1990, Burhanuddin et al. 1994, 1999, Rehault et al. 1994, Villeneuve et al. 1994, Honthaas et al. 1998, Milsom 2000, 2001, Hinschberger et al. 1998, 2000, 2001, 2003, 2005, Cornee et al., 1998, 2002, Pownall et al. 2016.* |
| Banda Ridges | *Silver et al. 1985, Villeneuve et al. 1994, Cornee et al.1997, 2002* |
| Circum-Banda Sea Islands: (outer arc) | *De Marez Oyens 1913, Brouwer 1923, Bursch 1947, Schluter and Fritsch 1985, De Smet et al. 1989, Burollet, and Salle 1985, Van Marle and De Smet 1990, Charlton et al. 1991, Milsom et al. 1996, Honthaas et al. 1997, Callomon and Rose 2000* |

## *VII.2. East Sunda- West Banda Volcanic Arc (Lombok- Flores- Wetar)*

Sub-chapter VII.2 of Bibliography 7.0 contains 218 references on the geology of the volcanic arc islands East of Java.

The islands of the East Sunda- West Banda 'inner arc' East of Bali represent a young, active volcanic arc system, mainly of latest Miocene- Recent ages (Figure VII.2.1). The western part of this system is underlain by crust of continental thickness, but is thinning to the East; and most or all of the volcanic islands the Banda Arc East of Flores formed on oceanic crust (Curray et al. 1977).

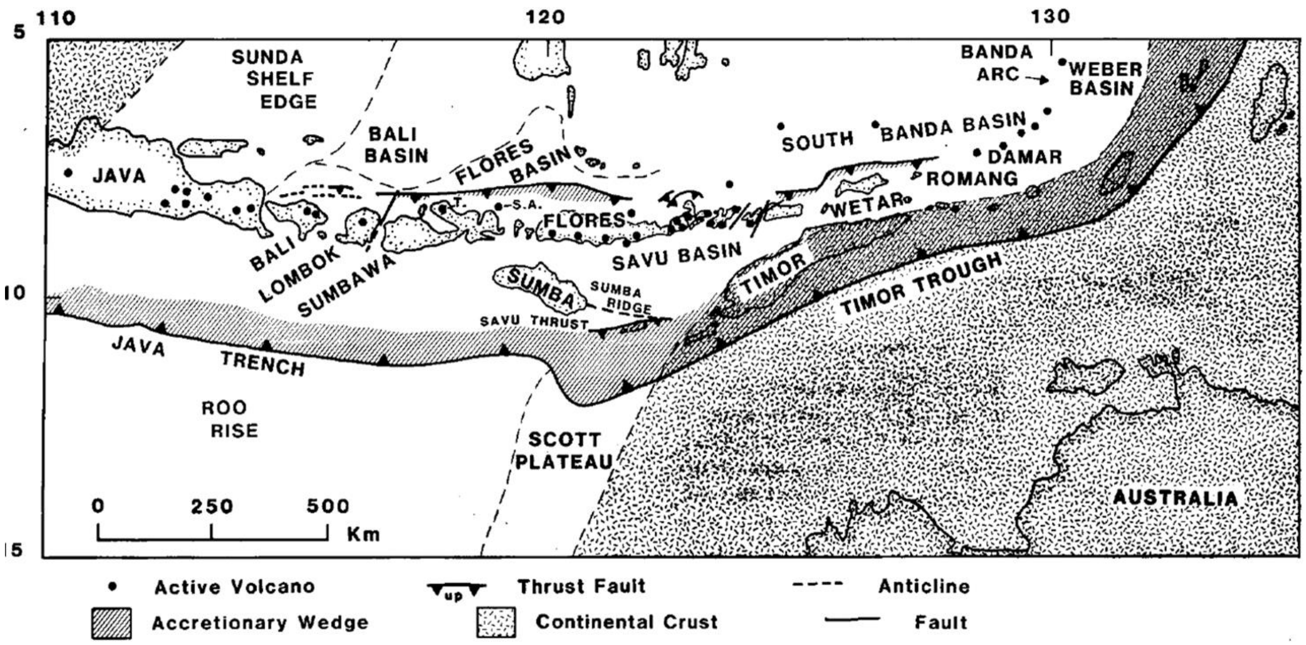



*Figure VII.2.1. Regional setting of East Sunda- West Banda volcanic arc showing active and inactive segments of the Banda Arc (Silver 1983).*

The southern parts of Bali, Lombok, Sumbawa and Flores have outcrops with remnants of a Late Oligocene- Early Miocene volcanic arc (Nishimura et al. 1981, Barbieri et al. 1987, Sudijono 1997, Ratman and Agustin 2005, Franchino et al. 2010, etc.). This arc probably formed on oceanic crust (e.g. Imai and Nagai 2009) and is the eastward continuation of the 'Old Andesites' arc of the Southern Mountains of Java and from here continues to West Sulawesi.

The geochemistry of the Banda Arc Pliocene-Quaternary volcanics shows typical intra-oceanic arc volcanic products, but the volcanics locally contain apparent contamination from a subducted continental source. This either reflects subduction of Australian-margin derived sediments, or is evidence that extended Australian continental margin crust was subducted to ~100km below the Banda Arc (Poorter et al. 1991, Elburg et al. 2004, 2005, Fichtner et al. 2010, Herrington et al. 2011, Nebel et al. 2011).

### *Alor- Wetar gap in active volcanism*

There is a gap in active volcanism in the Alor- Atauro- Wetar segment of the Banda Arc North of Timor, although large extinct volcanoes are present (Brouwer 1919, De Jong 1941; Figure VII.2.2). This lack of volcanism since ~3 Ma coincides with an absence of shallow earthquakes shallower than ~350 km in this segment (Figure VII.2.3).

The most likely explanation is that the subduction zone was locked here after collision of the Australian continental margin and the Banda Arc, with possible slab breakoff (Ely et al. 2011). This locking of the subduction zone probably is probably the reason for the formation of a belt of North-directed 'back-thrusting' immediately North of Alor-Wetar (see below).

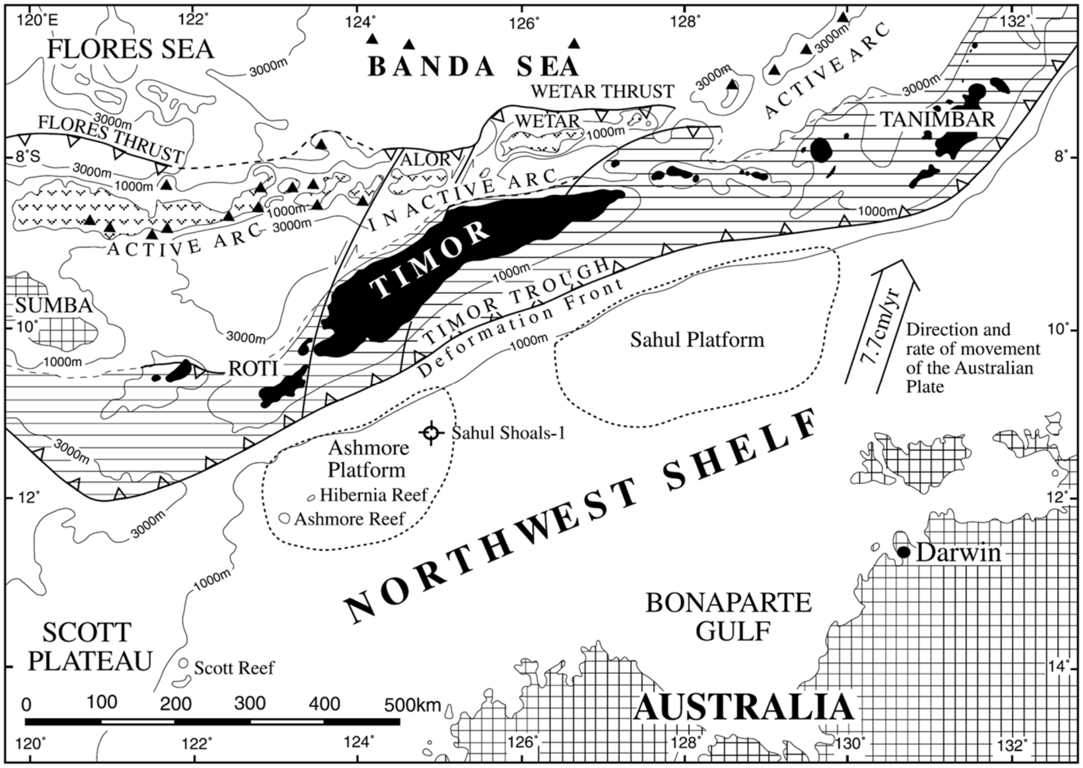



*Figure VII.2.2. Regional map showing active and inactive segments of the Banda Arc. The Alor-Wetar sector has been inactive for ~3 My after locking of the subduction zone at the Timor Trough. Active backarc thrusting North of the arc now accommodates part of the N-ward movement of the Australian plate.*

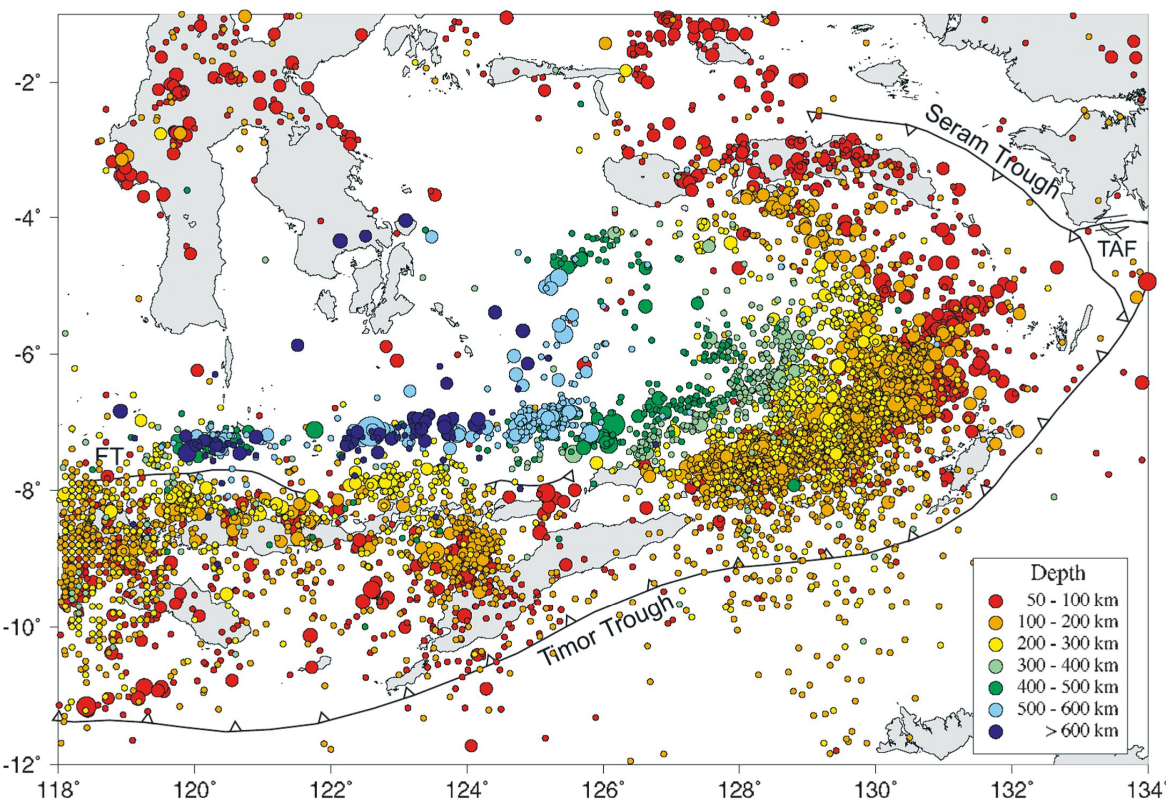



*Figure VII.2.3. Earthquake distribution along the Banda Arc (Das 2004). A north-ward deepening, continuous plane of earthquake hypocenters, from ~50km North of the Timor Trough to >600km under the South Banda Sea, reflects movement of the subducting Indian Ocean- Australian plate. Note virtual absence of slab earthquakes <300km in Timor/ Alor-Weter segment, suggesting slab breakoff.*

*Pliocene and younger uplift of Alor- Wetar sector islands*

The Alor, Atauro and Wetar islands have undergone significant young uplift, with Pleistocene reef terraces up to 700- 800m (De Jong 1941, Hantoro et al. 1994, Ely et al 2006, 2011). Hantoro et al. (1994) calcaulated 580m of uplift of Alor in the last 500 kyrs.

Pliocene stratiform sulfide-barite-gold deposits now in outcrop on Wetar island (Lerokis, Kali Kuning). These are interpreted to have formed on the flanks of a submarine volcano at ~2 km depth at around 4.8 Ma, suggesting several kilometers of late uplift (Sewell and Wheatley 1994, Scotney et al. 2005).

***Backarc thrusting North of the eastern Sunda Arc***

Active belts of north-directed thrusting have been identified from reflection seismic profiles and earthquakes in the backarc regions immediately North of Flores, Alor-Wetar, Flores, etc. (Figures VII.2.1, VII.2.2, VII.2.4) (Silver et al. 1983, McCaffrey and Nabelek 1984, 1986, 1987, Breen et al. 1989, Charlton 1997).

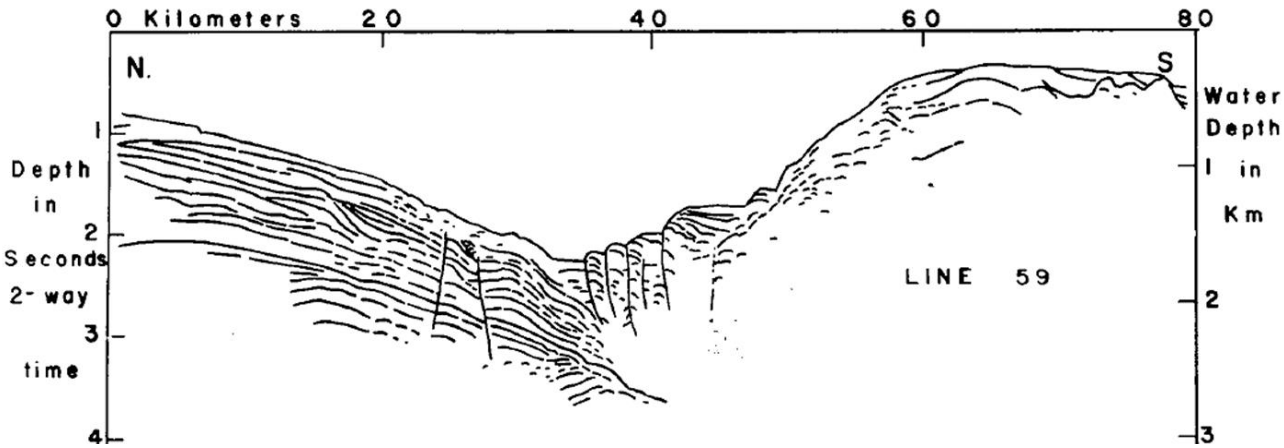



*Figure VII.2.4. Interpreted N-S seismic profile 59 in South Banda Sea, crossing the Flores Thrust in the backarc at west end of Sumbawa Island (Silver al. 1983).*

This thrusting has been explained as an early stage of subduction polarity reversal, after collision between the Banda Arc and the Australian continental margin locked the subduction zone at the Timor Trough (Silver et al. 1983). Remarkably, however, this belt of backarc thrusting may extends for ~2000km, as it can also be traced from Alor-Wetar west to North of Flores, Bali (McCaffrey and Nabelek 1987), then into southern Madura Straits and the Kendeng thrust zone of East Java, areas, where Indian Ocean subduction has not locked up yet by continent collision (e.g. Koulali et al. 2016).

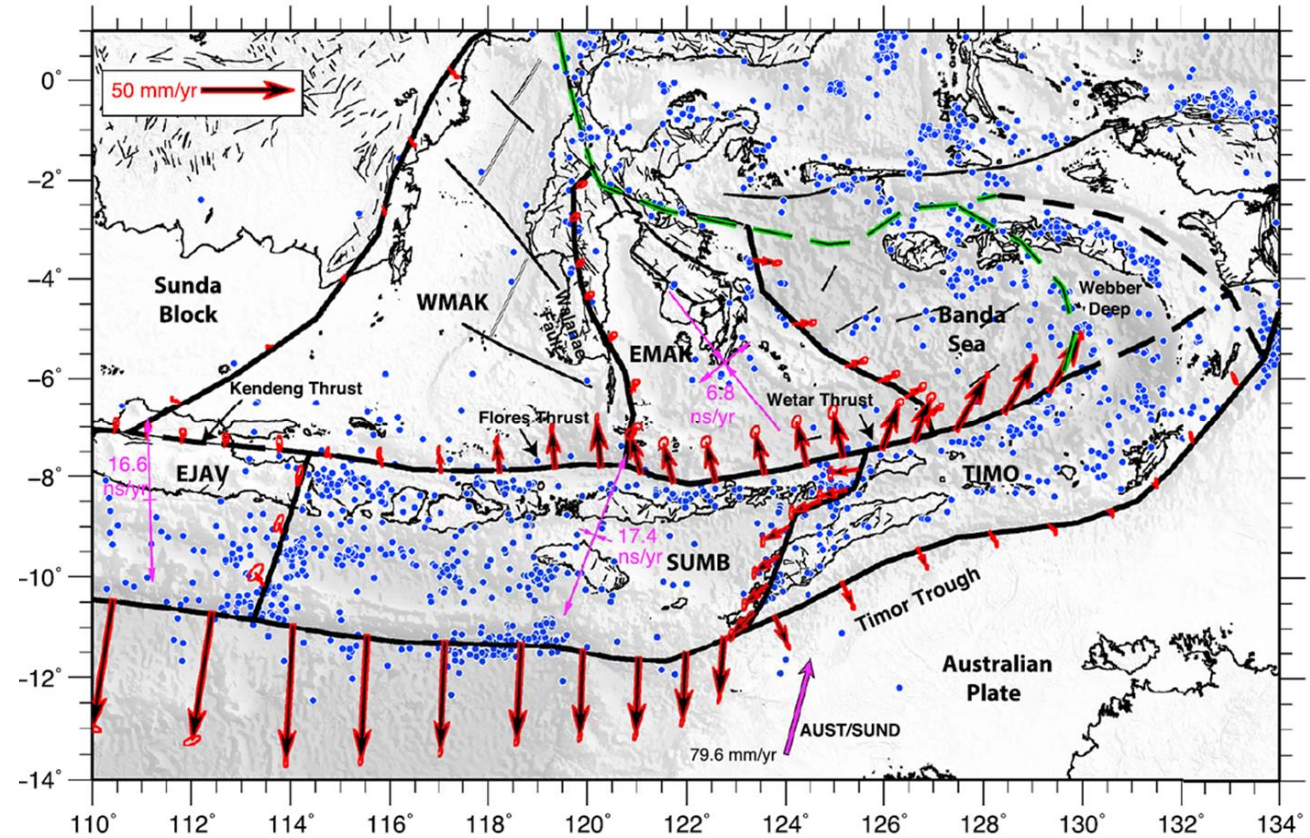



*Figure VII.2.4. Model of present relative slip at block boundaries south and north of the Sunda- Banda Arc, based on GPS data (Koulakov et al. 2016). Red arrows show motion of upper block/ hanging wall. Movement rates at Java Trench gradually diminish eastward into the now-locked subduction trench of the Timor Trough. The Kendeng- Flores- Wetar backarc thrust zone(s) are shown as a single, continuous block boundary, with slip motion increasing eastward from East Java to NE of Timor.*

### *Sumbawa - Porphyry Cu-Au deposits*

Sumbawa island is part of the East Sunda- West Banda Arc system and is home to one of the largest volcanic eruptions in historic times (Tambora 1815). It is probably underlain by remnants of the Late Oligocene Early Miocene 'Old Andesites' volcanic arc and its overlying limestones (Barbieri et al. 1987, Idrus et al. 2007).

The island is also home to several large, young porphyry copper-gold deposits, at Batu Hijau (1990 discovery) and Elang (Garwin 2000, 2012 ). These deposits are part of a porphyry metallogenic belt that extends from SE Java (Tumpangpitu/ Tujuh Bukit) to Sumbawa), a sector where the Roo Rise is subducting beneath the island arc, which may or may not be related (Maryono et al. 2018).

Reported ages of mineralization include ~7- 3.7 Ma (Garwin 2002), 6-3.7 Ma (Arif and Baker 2004), 3.7 Ma (Idrus et al. 2007), between 2-2.5 Ma (Maryono et al. 2018).

Mineralization probably formed at ~5 km depth,These are now exploited in open surface mines, attesting to the large amount of young uplift.

***Suggested reading- East Sunda- West Banda Arc*** *(not a complete listing of significant papers)*

| | |
|---|---|
| General and Tectonics | *Nishimura et al. 1981, Abbott and Chamalaun 1981, Silver et al. 1983, 1986, McCaffrey 1988,1989, Zen et al. 1992, Van der Werff 1996, Elburg et al. 2005, Shulgin et al. 2009, Planert et al. 2010, Luschen et al. 2011* |
| E Sunda- Banda volcanic arc | *Ehrat 1928, Kuenen 1935, Brouwer 1940-1954, De Jong 1941, Heering 1942, Hutchison 1977, 1981, Jezek and Hutchison 1978, Hendaryono 1998, Hoogewerff 1999, Hilton et al. 1989, 1992, Poorter et al. 1991, Vroon et al. 1992, 1993, 1995, 1996, 2001, Elburg et al. 2002, 2004, 2005, Ratman and Agustin 2005, Fichtner et al. 2010, Ely et al. 2011, Nebel et al. 2011* |
| Seismicity | *McCaffrey et al. 1985, McCaffrey 1989, Das 2004* |
| Back-arc thrusting | *Silver et al. 1983, 1986, McCaffrey and Nabelek 1984, 1986, 1987, Breen et al.1989, Charlton 1997,* |
| Sumbawa porphyry Cu-Au (Batu Hijau, Elang) | *Meldrum et al. 1994, Ali 1997, Gerteisen 1998, Arif and Baker 2004, Garwin 2000, 2002, Idrus 2006, 2008, 2018, Aye et al. 2010, 2011, Hoschke 2012, Kepli et al. 2014, Maryono et al. 2018,* |
| Wetar massive sulphide ores | *McKechnie et al. 1992, Sewell and Wheatley 1994, Scotney 2002, Scotney et al. 2005, Farmer 2011, Seran and Farmer 2012* |

### *VII.3. Sumba, Savu, Savu Sea basin*

Sub-chapter VII.3 of Bibliography 7.0 contains 92 references on the geology of Sumba and nearby islands in the Banda forearc West of Timor.

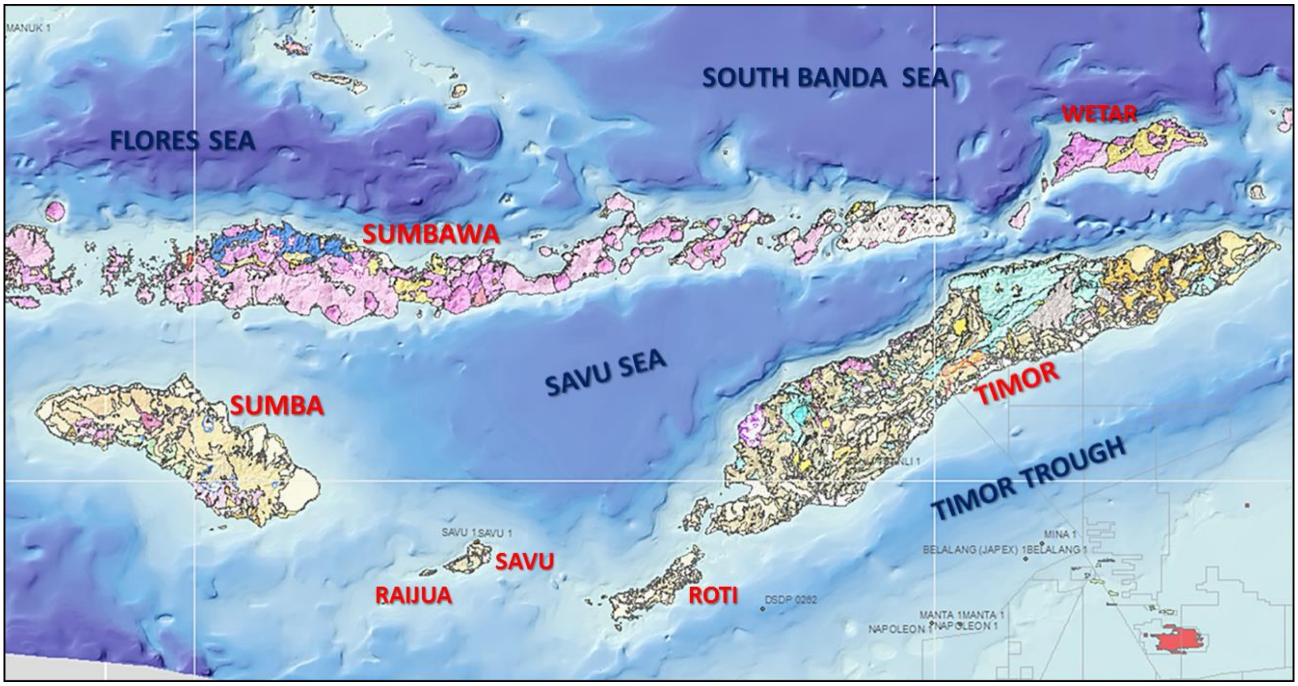



*Figure VII.3. Index map of areas discussed in Chapters VII.3 and VII.4.*

***Sumba***

Sumba island is part of a continental terrane located in the Banda forearc, between the Sumbawa- Flores sector of the Banda volcanic arc in the North, and the Java- Timor Trench/ accretionary prism in the South. No pre- Upper Cretaceous basement is known from Sumba, but gravity and seismic refraction data suggests Sumba is underlain by >24km thick, presumably continental crust (Chamalaun et al. 1981).

The Sumba terrane is flanked by the deep Lombok and Savu basins in the West and East, both very young and underlain by basement with oceanic crust thickness and seismic velocities (Curray et al. 1977; Karig et al.1987).

As first suggested by Hamilton (1977) Sumba is generally viewed as a micro-continental fragment that was detached from the SE Sundaland margin in Miocene time by the opening of the South Banda Sea, and moved South before the development of the present-day Banda volcanic arc (Hamilton 1979, Burollet and Salle 1982, Von der Borch et al. 1983, Audley Charles 1985, Djumhana and Rumlan 1992, Simandjuntak 1993, Wensink 1994, 1997, Van der Werff et al. 1994, Lee and Lawver 1995, Abdullah et al. 1996, 2000, Soeria-Atmadja et al. 1998, Satyana 2003, Prasetyadi et al. 2006, Satyana and Purwaningsih 2011, 2012, etc.). The most likely place of origin was the Java Sea shelf near the present Flores Basin, where it was a southern continuation of the West Sulawesi Late Cretaceous- Paleogene volcanic arc (Hamilton 1979).

However, not all authors viewed Sumba as a piece of Sundaland margin:
- Audley-Charles (1975) and Chamalaun et al. tended to favor an origin from the NW Australian margin, although there are no similarities whatsoever between the stratigraphy and magmatic events of Sumba and NW Australia;
- Rutherford et al. (2001) and Lytwyn et al. (2001) favored an origin of Sumba as part of the Late Cretaceous- Early Oligocene 'Great Indonesian Volcanic Arc' (which includes West Sulawesi), from which it separated at ~16 Ma and ended up in present position at ~7 Ma.

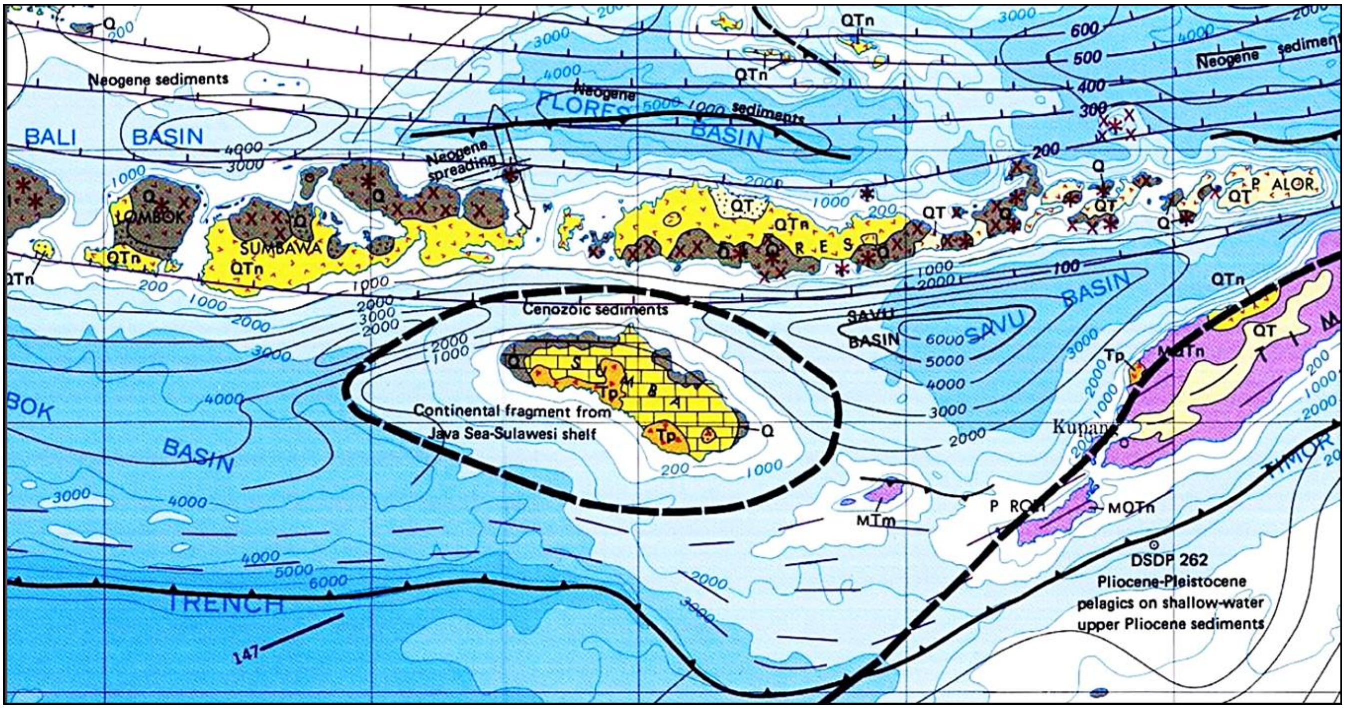



*Figure VII.3.1. Position of Sumba continental block in forearc between the Banda volcanic arc in North and the accretionary prism North of the Java Trench- Timor Trough in South (purple colors to SE) (Hamilton 1978).*

The Cretaceous- Neogene stratigraphic succession of Sumba is remarkably similar to that of SW Sulawesi (Late Cretaceous flysch, Paleo-Eocene island arc volcanics, Paleogene? granodiorites, mid-Oligocene unconformity within Middle Eocene- Early Miocene shallow marine carbonate-dominated section, etc.). There are also many similarities with the 'Banda Terrane' of Timor (Audley-Charles 1985), which was probably also derived from the Sundaland margin.

*Volcanic history*

The Cretaceous-Paleogene igneous-volcanic history of Sumba is comparable to that of the Sundaland, and totally unlike NW Australia. Three episodes of arc volcanism were identified: Late Cretaceous (86-77 Ma), Maastrichtian- Thanetian (71-56 Ma) and Middle Eocene- Early Oligocene (42-31 Ma) (Abdullah 1994, Abdullah et al. 1996, 2000). The episodes led to andesitic volcanics and associated granodiorite intrusions.

According to Abdullah et al. (op.cit) there is no evidence for Neogene volcanic activity, and all volcanic material in Miocene sediments may be reworked from older deposits. Burollet and Salle (1981) and Wensink and Van Bergen (1995) reported thick Early Miocene andesitic tuffs (Jawila Fm) in West Sumba , but rmore recent radiometric dating suggested a Late Eocene (37 Ma) age (Fortuin et al. 1997).

*Structure*

Unlike nearby Timor, Sumba island is relatively undeformed, with broadly N-dipping, faulted but not folded Cretaceous beds, unconformably overlain by less deformed Tertiary-Quaternary deposits (Figure VII.3.2; Von der Borch et al. 1983). An earlier report by Laufer and Kraeff (1957) reported more intense folding of Cretaceous deposits, with NNW strike direction (.Figure VII.3.3).

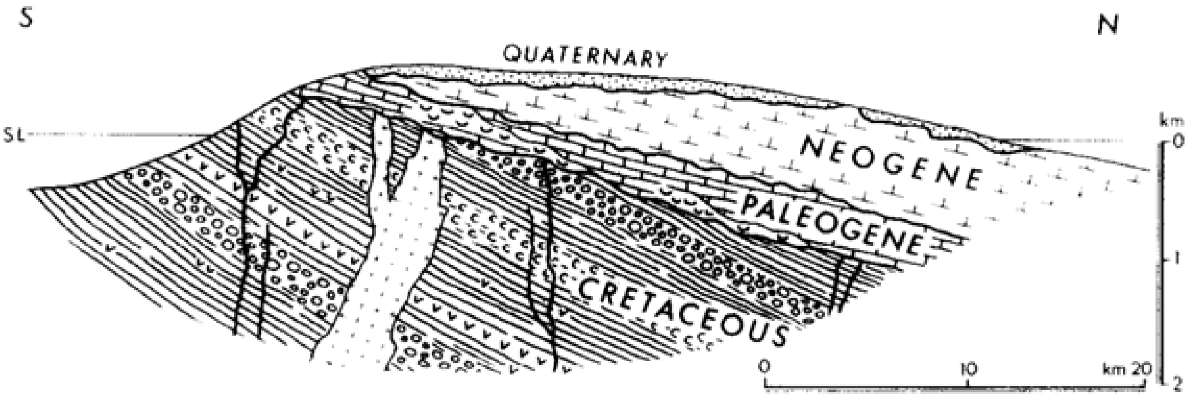



*Figure VII.3.2. S-N cross section of central E Sumba, showing broadly N-dipping Cretaceous, unconformably overlain by Tertiary sediments (Audley-Charles 1985, after Von der Borch et al. 1983).*

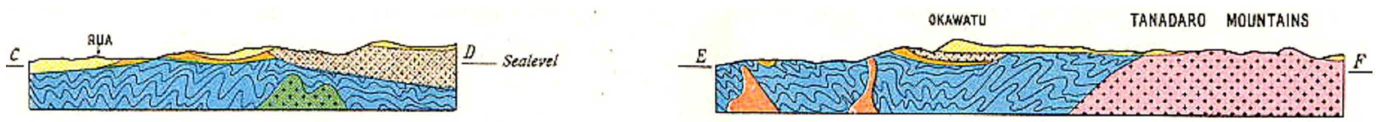



*Figure VII.3.3. S-N cross sections of S Sumba island, showing more intensely folded Cretaceous, unconformably overlain by relatively undeformed Eocene-Miocene sediments, and intruded by granite (Laufer and Kraeff, 1957).*

Paleomagnetic work suggests a ~60° clockwise rotation of Sumba between Jurassic (should be Cretaceous) and Miocene (Otofuji et al. 1979, 1981, Nishimura et al. 1981).

Wensink (1997), partly revising 1994 conclusions, suggested: (1) 53° CW rotation of the Sumba microcontinent between 78 and 65 Ma; (2) further CW rotation of 39° between 65 and 37 Ma (late Eocene Jawila volcanics); (3) 9° CW rotation between late Eocene and late Miocene, and (4) 4° CCW rotation since late Miocene- Early Pliocene. This suggests the >90° CW rotation of Sumba since Late Cretaceous was essentially completed by Late Eocene.

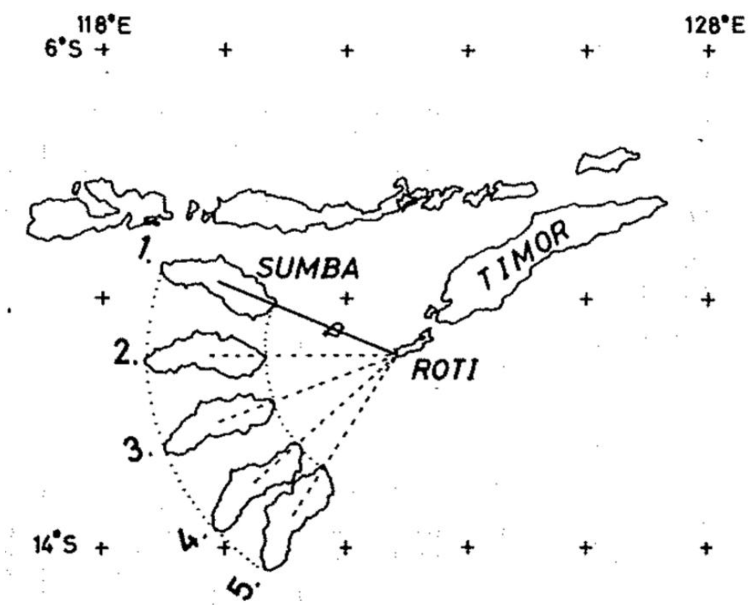



*Figure VII.3.4. Example of paleomagnetic study suggesting ~60° clockwise rotation since Jurassic- Cretaceous (Otofuji et al. 1979) (see also slightly different scenario of Wensink ,1997).*

*Cretaceous- Paleogene Stratigraphy*

A commonly quoted occurrence of Jurassic sediments on Sumba has never been substantiated. It was based on a report of a presumably Jurassic Aegoceratid ammonite fragment and *Inoceramus* from West Sumba by Roggeveen (1928). However, the original identification and age of the ammonite are questionable, and no other Jurassic fossils have ever been found since then. These are more likely to be Upper Cretaceous fossils (Van Gorsel, 2012).

Late Cretaceous flysch-type sediments of the Lasipu Fm are reportedly >1000m thick, rich in quartz and andesitic arc volcanic detritus and contain *Globotruncana* foraminifera and bivalve *Inoceramus*. Basal beds contain tropical Tethyan mollusc fauna *(Exogyra, Nerinea*, etc.). Turbidite flow directions suggest a paleoslope to the SW (Von der Borch et al. 1983), which if restored this for the ~60-90° post-Cretaceous clockwise rotation suggested by paleomafnetic data (Wensink 1994, 1997), would become a paleo slope dipping to the SE. These observations suggest deposition in a low-latitude setting, probably in the fore-arc of an active continental margin, on a slope dipping SE. Most likely this implies a Cretaceous paleo-position of Sumba at the SE margin of Sundaland, similar to shown in the reconstruction of Rangin et al. (1990).

Cretaceous flysch deposits are overlain unconformably by Middle- Late Eocene *Nummulites* limestones with the 'Asian' low latitude foram genus *Pellatispira* (Caudri 1934).

A mid-Oligocene(?) angular unconformity separates Late Eocene- earliest Oligocene (zone Tb-Tc) limestones with dips of ~30° from more horizontal earliest Miocene (Te5) and younger sediments (Caudri 1934). This is also observed in the 'Banda Terrane' of Timor, and in the mid-Oligocene faulting-erosional event in the Tonasa Limestone of SW Sulawesi (Wilson et al. 2000, etc.).

*Middle Miocene deepening (= Sumba breakaway?)*

A dramatic early Middle Miocene deepening of depositional facies takes place from Early Miocene carbonate platform facies (with *Miogypsina/ Miogypsinoides*) to Middle Miocene- Early Pliocene e Waikabubak Fm deep marine marls, suggesting >4km of subsidence, probably between ~15-13 Ma (Fortuin et al. 1997). Some of the Middle- Late Miocene pelagic muds have undergone extensive carbonate dissolution, suggesting deposition below the Carbonate Compensation Depth (Fortuin et al. 1992, Roosmawat and Harris 2009).

This Middle Miocene deepening is associated with extensional faulting (rifting), and a Serravallian- Early Tortonian peak in volcanoclastic supply (Fortuin et al. 1997).
Common large-scale slumping in the Late Miocene pelagic- turbiditic series of East Sumba suggests deposition on a (tectonically induced?) steep slope (mainly in Tortonian section; Fortuin et al. 1992, 1994). The rapid deepening and oversteepening of slope deposits may reflect the rifting and detachment of Sumba from SE Sundaland in Middle-Late Miocene time (Simandjuntak 1993, Fortuin et al. 1994, 1997).

*Post-Miocene uplift of Sumba island*

Post-Miocene uplift (possibly starting in Messinian/ latest Miocene), with N-NE tilting of Sumba island is suggested by:

1. Late Miocene deep marine pelagic marls, deposited below 3500-4500m water depths, are now up to 1000m above sea level (Fortuin et al. 1991, 1997). The most rapid rate of uplift was probably after 2 Ma (2.3 mm/yr; Roosmawati and Harris 2009);
2. Quaternary coral reef terraces of <1 My in age were raised up to ~600m above sea level, mainly along the north side of the island, suggesting recent uplift rates of 0.3-0.8 m/ 1000 years (Figures VII.3.5, VII.3.6) (Verbeek 1908, Jouannic et al. 1988, Hantoro 1993, Pirazzoli et al. 1993, Siregar and Setyagraha 1995, Bard et al. 1996, Nexer et al. 2015).

The highest parts of the Sumba block probably did not emerge above sea level before ~3 Ma (Fortuin et al. (1997). Keep et al (2003) and Roosmawati and Harris (2009) suggested the uplift of the Sumba block was caused by the subduction of a relatively buoyant promontory of the NW Australian NW margin (Scott Plateau) after initial collision at ~6-8 Ma.


*Figure VII.3.5. Sketch of East part of Sumba island from Verbeek (1908) who already observed the prominent uplifted coral reef terraces 1-6 up to 470m elevation.*

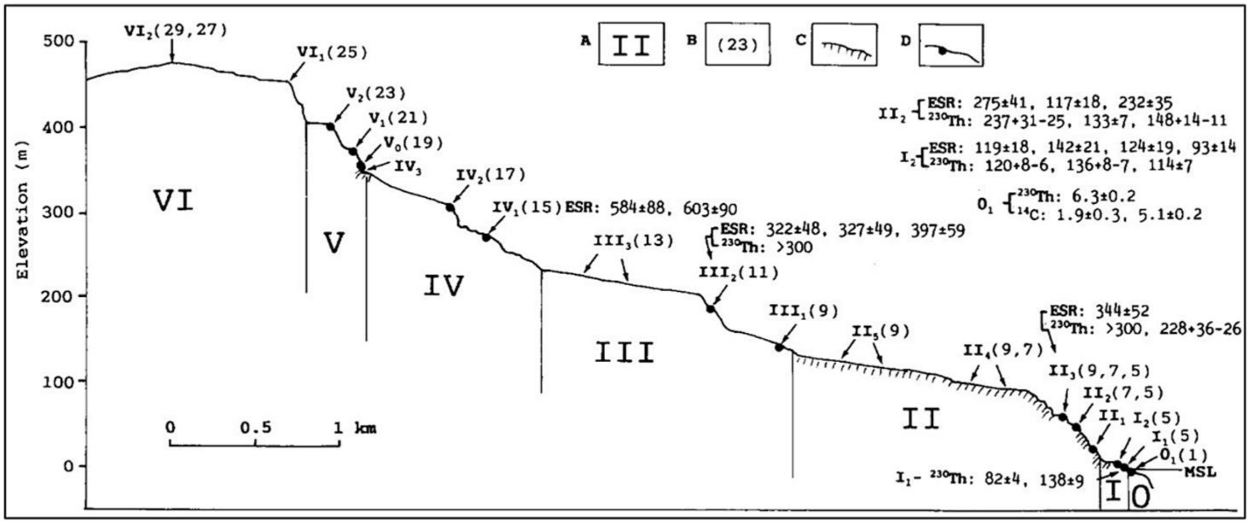



*Figure VII.3.6.. Profile at Cape Laundi, East Sumba, with six main Pleistocene coral reef terraces I-VI up to 475m elevation. With radiometric ages and correlations to Oxygen isotope stages (29-1). Progressively younging towards coastline (Hantoro 1993).*

***Savu***

Relatively small Savu island is an uplifted part of the Savu- Roti Ridge, which is the continuation of the Outer Banda Arc accretionary prism WSW of Timor. In the Bibliography Savu references are grouped with Sumba, although there are no similarities with the geology of Sumba.

Savu is composed mainly of thrust sheets of Late Triassic- Jurassic deep marine sediments (Reed 1985, Vorkink 2004, Harris et al. 2009), presumably distal NW Australian continental margin sediments. Remarkably, Cretaceous- Early Miocene sediments appear to be missing (Harris et al. 2009).

The directions of trusting in the accretionary wedge are opposite along the North and South coasts of Savu: South-directed thrusting is domiant in most of island (as expected in accretionary prism above a north-dipping subduction zone); in the North of the island thrusting is mainly North-directed backthrusting, over the Savu forearc basin (Figures VII.3.7, VII.3.8).

An up to 25m thick unit of pillow basalts is present in outcrops of the Jurassic Wai Luli Formation (Harris et al. 2009).

Relatively undeformed Pliocene- Early Pleistocene marls, comparable to the Batu Putih marls of Timor (in facies, not necessarily geologic setting), overlie the Upper Miocene scaly clay of the deformed section of Savu and have been uplifted probably ~3km in the last 2 million years (Reed 1985, Roosmawati and Harris 2009).

The unsuccessful Savu 1 well drilled on North Savu in 1975 is the only oil exploration well in the region, and penetrated repeated thrust slices and melanges The well TD at 1227m is in Cretaceous clastics similar to those of Sumba, not NW Australia (Harris et al., 2009).

Verbeek (1908) reported Permian coral limestones, presumably from mud volcanoes/ melange. Fragments of the Banda Terrane may be present on Savu and Rote (mentioned in Harris 2006)

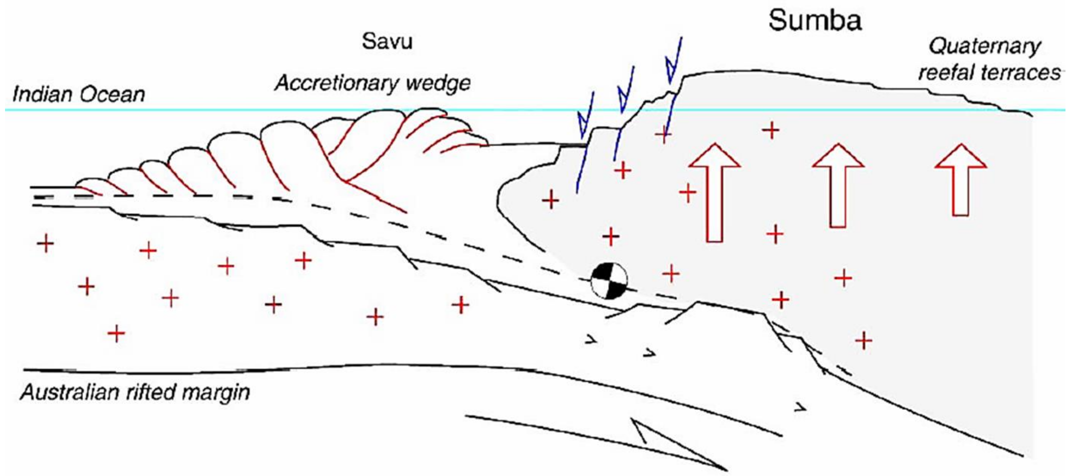



*Figure VII.3.7. Diagrammatic S-N regional cross-section, showing Savu as outcropping accretionary wedge above subducting Australian rifted margin, in front of Sumba continental block in Banda Arc forearc region (Fleury et al. 2009).*

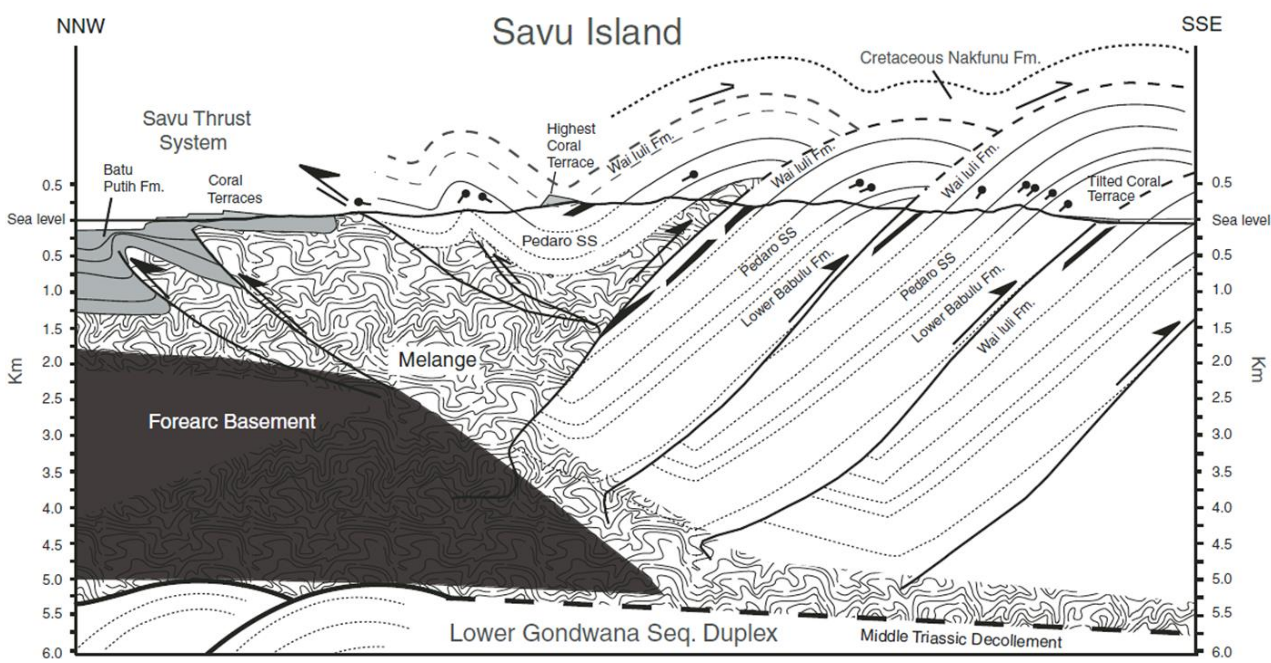



*Figure VII.3.8. Composite NNW-SSE section across Savu (Harris et al., 2009).*

*Young uplift Savu Island*

As for many islands in the Banda region, there is strong evidence for recent uplift of Savu island:

- Quaternary reeal limestone terraces up to 300m above sea level;
- foraminifera in the young marls of Savu suggest water depths over 3000m at ~4 Ma, 1-1.5 km at 1.8 Ma, and are now at several 100's of m above sea level (Vorkink 2004, Roosmawati and Harris 2009).

***Savu Sea Basin***

The Savu Basin NW of Timor is a deep (>3km) and probably young basin in the forearc area North of Timor. It is underlain by by thin (12-14km) crust, possibly oceanic (Beiersdorf and Hinz, 1980, Reed 1985, Harris 2006, Fleury et al. 2009). Harris (2006) suggested it was probably part of the South Banda Sea Late Neogene extensional system.

No wells were drilled in the basin, so all all studies of sedimentation are based on uncalibrated seismic lines, extrapolated to comparable units in the onshore stratigraphies of Sumba, Savu etc..

Basin fill is generally thin (up to 4.8 km in thickest part) and relatively undeformed, unconformably on block-faulted pre-Late Miocene basement (Van der Werff ?, Van Weering ?, Toothill, and Lamb 2009, Rigg and Hall 2012).

The Savu basin may be subdivided into a Miocene? South Savu Basin and a deeper Pliocene-Recent active North Savu Basin (Van der Werff 1995).

***Some suggested reading- Sumba, Savu*** *(not a complete listing of all relevant papers)*

| | |
|---|---|
| Sumba General/ Tectonics | *Caudri 1934, Van Bemmelen 1949, Laufer and Kraef 1957, Hamilton 1978, Burollet and Salle 1982, Effendi and Apandi 1982, Chamalaun et al. 1982, Von der Borch 1983, Audley-Charles 1985, Djumhana and Rumlan 1992, Simandjuntak 1993, Wensink 1991, 1994, 1997, Fortuin et al. 1991, 1992, 1994, 1997, Abdullah 1994, Abdullah et al. 1996, 2000, Soeria-Atmadja et al. 1998, Lytwyn et al. 2001, Rutherford et al. 2001, Satyana 2003, Keep et al. 2003, Fleury 2005, 2009, Satyana and Purwaningsih 2011, 2012* |
| Sumba paleomagnetic studies | *Otofuji et al. 1979, 1981, Nishimura et al. 1981, Chamalaun and Sunata 1982, Wensink et al. 1997* |
| Savu island | *Verbeek 1908, Reed 1985, Vorkink 2004, Harris et al. 2009, Roosmawati and Harris 2009* |
| Savu Sea Basin | *Reed 1985, Reed et al. 1987, Kusnida 1992, Van Weering et al. 1989, Van der Werff 1991, 1995, Fleury 2005, Fleury et al. 2009, Toothill, and Lamb 2009, Tampubolon and Saamena 2009, Rigg and Hall 2011.* |

## *VII.4. Timor, Roti, Leti, Kisar*

Timor is a key area for unraveling and constraining the geodynamic history of Eastern Indonesia. Its complex geology and unique rock associations, as well as some unusually diverse Late Paleozoic- Mesozoic fossil assemblages have attracted numerous researchers since the early 1900's.

This chapter of the bibliography lists >650 papers for the combined territories of Indonesian West Timor, Timor Leste, and the adjacent smaller islands like Roti, Kisar and Leti. This does not include all papers that discuss Timor in a larger regional context.

Timor and surrounding islands are part of the Sunda-Banda 'non-volcanic outer arc', which contains both relatively undeformed parts of the Banda forearc (e.g. Sumba) and the intensely folded-thrusted collisional belt between the Banda Arc forearc and the subducting NW Australian continental margin (Figure VII.4.1).

The fold-and-thrust belt can be traced all around the Banda Arc from the Java Trench accretionary prism in the West to Timor and futher East and NE to the islands of Babar, Tanimbar, Kai, and eventually Seram-Buru.

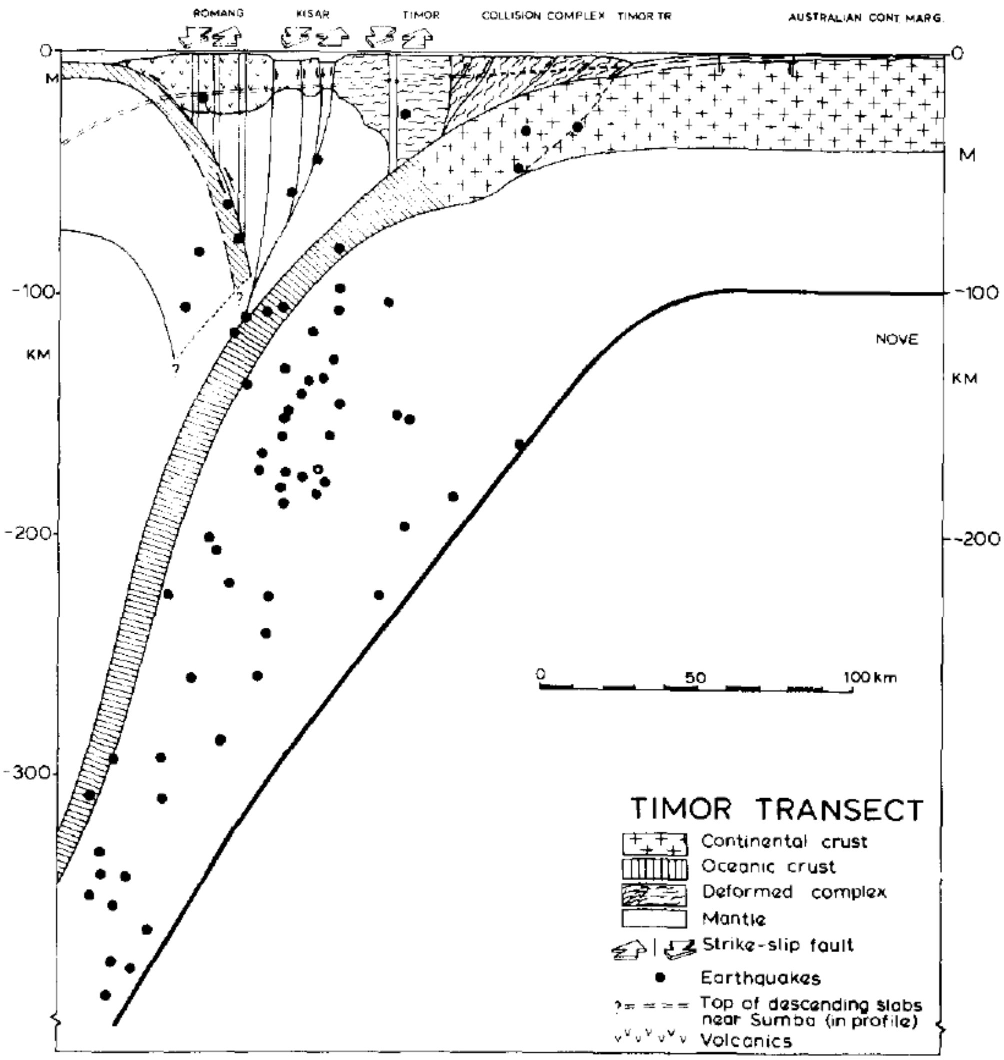



*Figure VII.4.1. N-S regional cross-section from marine geophysical data from Banda Sea- Banda Arc (Romang- Kisar) off NE Timor island (all part of upper plate)- Timor Trough to NW Australian margin. Showing North-dipping subducted oceanic crust, partly subducted NW Australian continental margin, the South Timor accretionary wedge and the newly forming Wetar backarc thrust zone (Jongsma et al. 1989).*

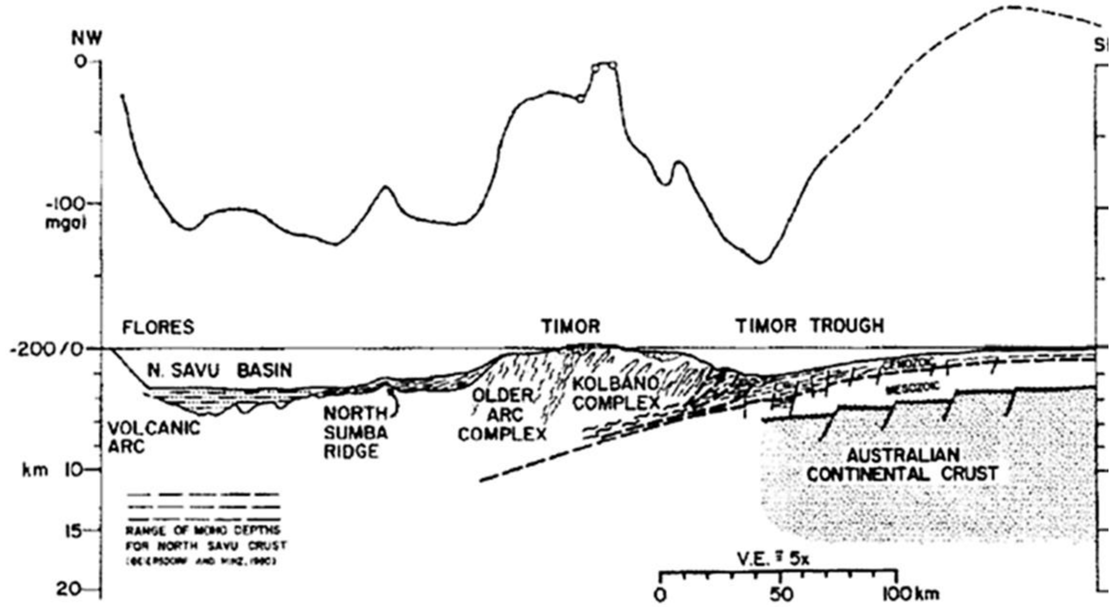



*Figure VII.4.2. 'Traditional' NW-SE regional cross-section from Savu Sea (oceanic)- Timor island- NW Australian continental margin, with observed free-air gravity profile (McBride and Karig 1987).*

Much of the pioneering work on West Timor island was by Dutch and German workers between 1912-1941 (Molengraaff, Brouwer (1913-1942), Wanner (1909-1942), Tappenbeck (1940), De Roever (1940-1942). and later by De Waard (1954-1959). Notable subsequent work was by Barber (1976-1986), Charlton (1987-2017) and Harris and co-workers and others (1989-2011).

The geology of Timor Leste became known mainly since the 1950's through the works of Grunau (1953, 1956, 1957), Wanner (1956), Brunnschweiler (1978) and Audley-Charles (1965-2011).

### *Tectonics*

Timor island was first recognized as an Alpine style fold-and-thrust belt by Wanner (1913) and Molengraaff (1913, 1915). Although on an Indonesia-scale map the Timor 'foldbelt' may look small, the length of the island is ~500km, which makes it of similar size as the French and Swiss Alps combined.

Two major issues surround the tectonics of Timor, both of which have been debated for about 100 years, and both are still not settled:

1. how much of the Timor rock record represents the thrusted sedimentary cover of the northern Australian continental margin ('para-autochthonous') and how much represents nappes of Asian/ Banda forearc origin ('allochthonous')?
2. what was the main age of folding and thrusting on Timor: it is all young (Late Miocene- Present Banda Arc collision) or were there older deformational phases (Eocene or Oligocene)?

Most of the authors that did the pioneering fieldwork in the 1910's- 1950's recognized that Timor island is an alpine-style thrust belt, with superposed units of different character, and that the timing of the main thrusting (including overthrusting of Banda Terrane) was pre-Miocene (Molengraaff 1912, 1913, Wanner 1913, Tappenbeck 1939, Brouwer 1942, Gageonnet and Lemoine 1957) or even as old as Middle-Late Eocene (Sopaheluwakan 1990, Reed et al.1996, Villeneuve et al. 2010, 2012) or 'Laramide' (end-Cretaceous) (Sartono 1992).

These inferred deformational events are all well before the assumed (latest Miocene?-) Pliocene time of arrival of Australian continental margin at the Banda Arc trench, and, if correct, this shows these could not have taken place along the NW Australian passive margin.

Miocene and younger structuring on Timor is primary normal and local strike-slip faulting, and major uplift, perhaps more in line with the forearc setting postulated by authors, rather than a collision zone.

Timor island includes outcrops of tectonostratigraphic units that are of different origins:
1. unquestionable distal deep marine Mesozoic- Cenozoic deep marine deposits, that formed the cover of the subducted crust of the Australian plate margin (Kolbano Complex accretionary prism along South coast);
2. unquestionable Sundaland margin-derived units of the overriding Banda forearc (the structurally highest overthrust units of the 'Banda Terrane').
3. in-between units of more controversial tectonic position, whether part of the Banda forearc or derived from the subducted distal Australian margin (Maubisse terrane, 'Gondwana Sequence').

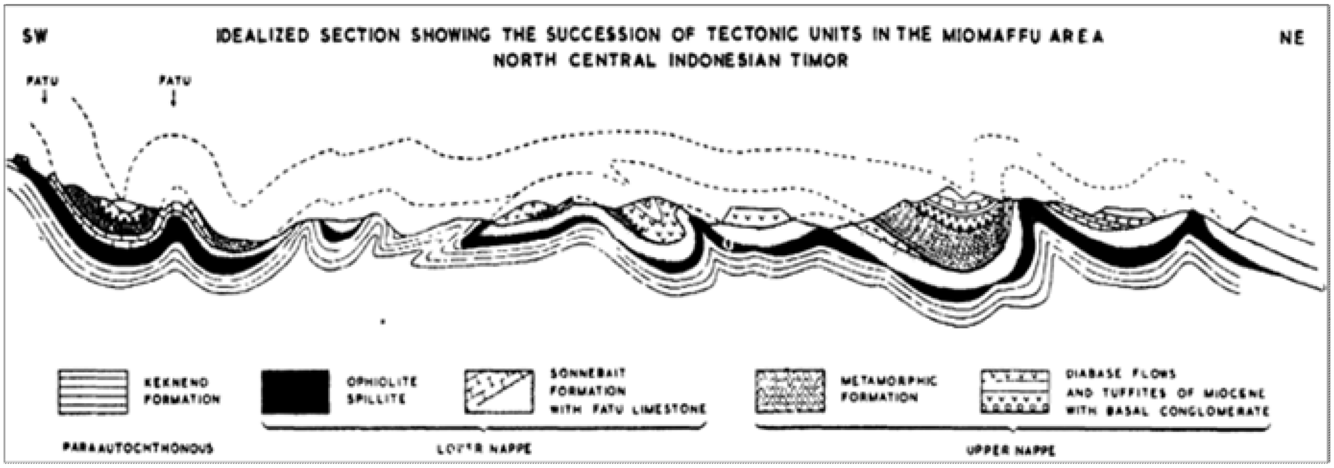



*Figure VII.4.3. SW-NE cross-section, showing widespread folding-thrusting in part of northern Central Timor (Marks, 1961). 'Upper Nappe' = Banda Terrane, Lower Nappe = Maubisse/ Sonnebait Terrane.*

Four to six major tectonostratigraphic units may be distinguished, from base to top (Figure VII.4.3):
1. 'Para-autochthonous' so-called 'Gondwana sequence', mainly composed of folded-thrusted Permian and Triassic flysch-type clastics (Atahoc-Cribas, Kekneno, etc, formations), overlain by more calcareous Late Triassic and Jurassic pelagic deposits (Aitutu and Wai Luli formations). Most of the current authors view these beds as folded and uplifted 'pre-breakup' section of the NW Australian margin, although sediment provenance studies, etc., do not appear support this. (see below)
2. 'Allochthonous?' Maubisse/ Sonnebait Formation nappe (looks like remnants of an oceanic terrane with thick Permian pillow basalts and reddish pelagic deposits with well-preserved, relatively low-latitude Permian crinoid/fusulinid limestones and Triassic ammonoid limestones).
3. 'Allochthonous' Banda Terrane nappe: a Sundaland-derived nappe with pre-mid-Cretaceous metamorphics, Upper Cretaceous and Eocene arc volcanics, etc. (see below);
4. ?Middle- Late Miocene(?) melange: In many cases large blocks of this 'Maubisse' facies are in chaotic deposits of the widespread Bobonaro melange. Probably a mix of fault zone material and mud diapir deposits;
5. 'Autochthonous' latest Miocene- Early Pleistocene 'Batu Putih/ Viqueque Formation deep marine pelagic marls of the Central Basin, overlying Bobonaro melange. These are deposits are the only deposits on Timor that are undisputably not tectonically displaced and clearly post-date the main deformational event on Timor.
6. Kolbano Sequence of imbricated Jurassic- Cretaceous-Paleogene? deep marine pelagic deposits, forming fold-thrust belt along the south coast from Kolbano in West Timor to the Betano area in Timor Leste (accretionary prism of Australian continental margin material).

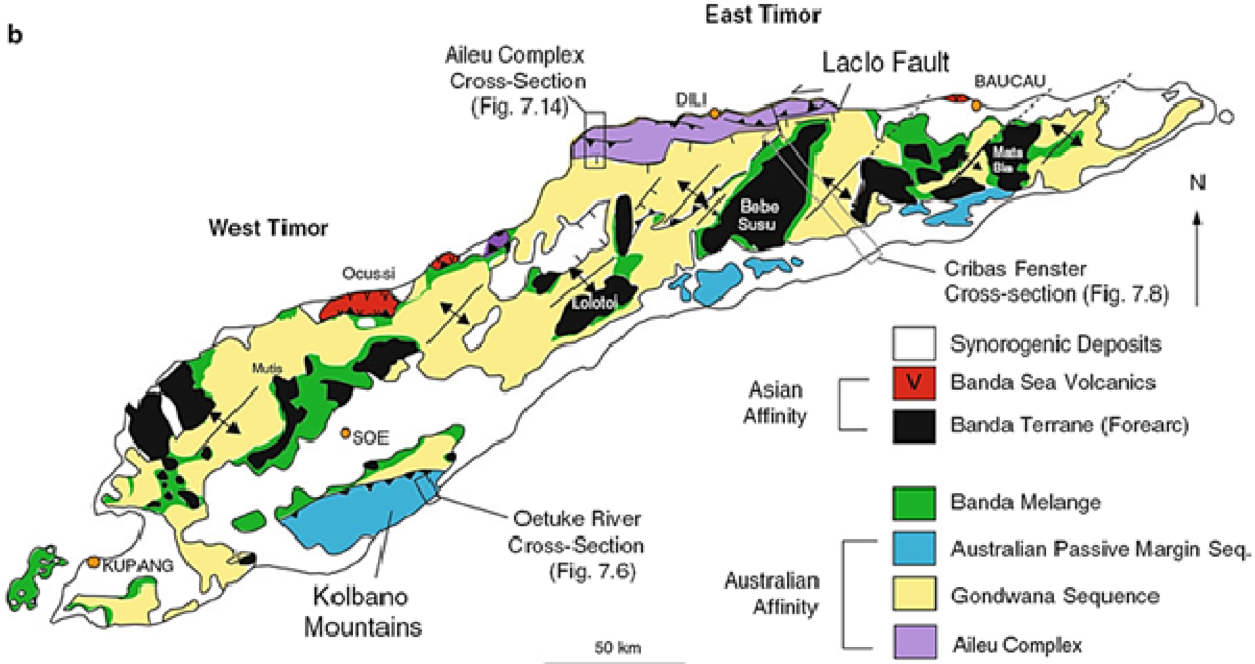



*Figure VII.4.4. Simplified geologic map of Timor, showing distribution of alleged Australian-affinity tectonostratigraphic units, overthrust from North by Asian-affinity nappes ('Banda Terrane'), and separated by 'Banda Melange' (= part of Bobonaro melange) (Harris (2011).*

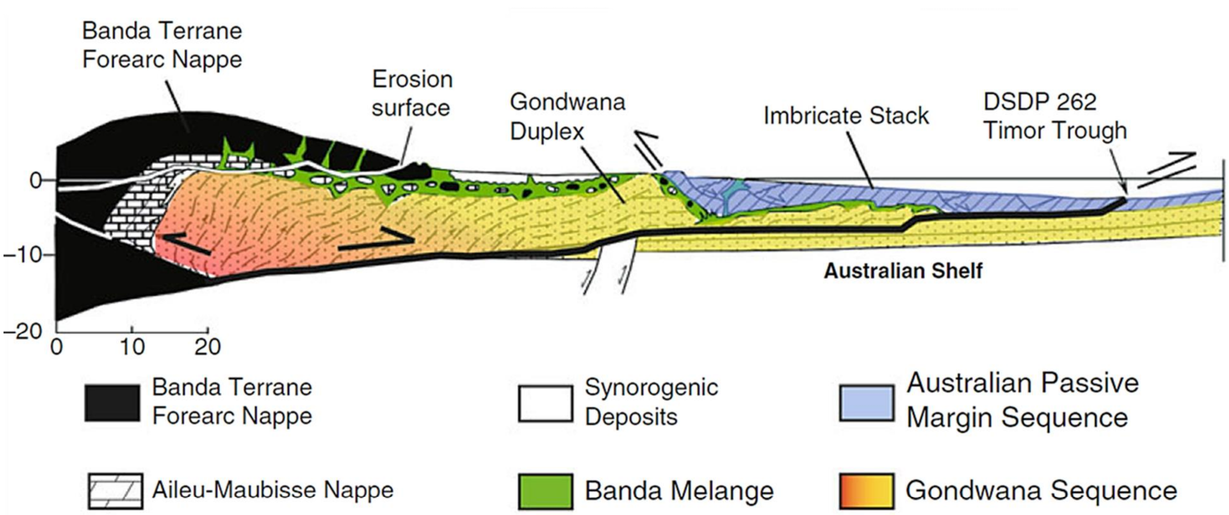



*Figure VII.4.5. Interpreted NW-SE cross-section of Timor, showing most of Timor as imbricated Australian margin material (Harris 2011).*

***Tectonic model(s) of the Timor region***

Several different models have been proposed for Timor island. Two end-members

1. Timor= mainly recently deformed Australian margin material (e.g. Figure VII.4.5). Many of the current authors appear to accept this relatively in-place formation model for Timor, and view units like the 'Gondwana Sequence and Maubisse complex as the imbricated (duplexed) and uplifted external parts of the NW Australian margin sediment cover (Hamilton 1979, Charlton, Harris and Haig, op.div., Sawyer et al. 1993, Audley-Charles 2011, Tate et al, 2014). This model works better if the subduction zone of the Banda Arc was located North of the island, and if the Timor Trough/trench is viewed as 'merely a thrust front'.

2. Timor = mainly forearc of the Banda Arc.This more dynamic view is that most of Timor island (not including the Kolbano Range accretionary prism along the South coast) represents part of the Banda forearc that was relatively undeformed during the collision with the Australian continental margin in mid-Pliocene. The most

intense thrusting and emplacement of Banda Terrane and other allochthonous units took place during pre-Miocene collision(s), probably at the Sundaland margin (Barber 1979, 1981, Bowen et al. 1981, Johnston and Bowin 1981, Jacobson et al. 1981, Harsolumakso and Villeneuve 1993, Villeneuve et al. 2005, 2013, Van Gorsel 2014)

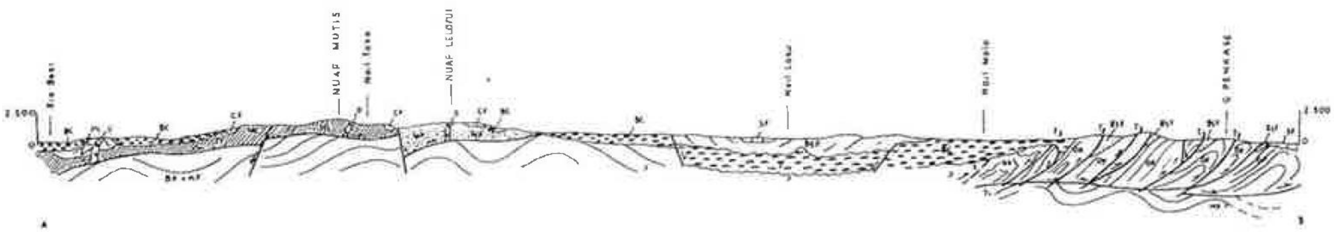


*Figure VII.4.6. N-S cross-section of West Timor (Hartono 1978)*

***1. 'Para-autochthonous' Gondwana Sequence***

This sequence is the tectonically lowest unit on Timor, and is mainly composed of folded-thrusted Permian-Early Triassic flysch-type clastics (Cribas, Kekneno series, etc, formations), overlain by more calcareous and argillaceous Late Triassic- Jurassic pelagic beds (Babulu, Wai Luli, formations) and possibly younger pelagic deposits. are uplifted to elevations of almost 3000m.

Views on the paleotectonic setting of this unit still vary widely, from:

(1) imbricated NW Australian margin sediments (majority of current workers, incl. Charlton, Harris, Haig, Tate, implicitly also R. Hall by not showing any Timor allochthonous units in his classic reconstructions);

(2) part of a terrane that rifted in Permian and broke off the Australia or New Guinea margin in Triassic time, went through a long pelagic drift stage from Late Triassic to Paleogene (?) and collided with an intra-oceanic arc ('Banda Terrane') around Late Eocene- Early Oligocene time (Villeneuve et al. 2010, etc.).

The composition and provenance indicators of the Permian-Triassic 'Gondwana Sequence' sandstones of Timor do not look like distal equivalents of same-age sediments on the Australian margin:

1. they are relatively immature, lithics-rich sandstones much less mature than the age-equivalent quartz-rich sediments on the Australian NW Shelf (Brouwer 1942).
2. Lithics are mainly metamorphic and volcanic rocks, not what would be expected for NW Australian 'old continent' provenance (unless somehow drainage from the East Australian active margin can be demonstrated);
3. paleocurrent directions of Permian sandstones on Timor are predominantly to the WSW, suggesting a source area to the North or East (Bird 1987, Cook et al. 1989, Bird and Cook 1991);
4. detrital zircon age distributions show greater similarities with rocks on the New Guinea-derived Birds Head and Sula Spur than with rocks in the NW Australia drainage system (Zobell 2007, Ely et al. 2014, Zimmermann and Hall 2014, 2016, Spencer et al. 2016).

Structural interpretions also become a lot more simple if the central and northern parts of Timor island are viewed as parts of the colliding 'upper plate' Banda forearc:

1. it makes the Kolbano thrust belt a classic accretionary prism of imbricated distal margin sediments, of which it shows all the usual characteristics, and
2. it does not require the rather unrealistic stacking of 10 or 10's of kilometers thick imbricate stacks of margin sediments to fill the space between outcrop and the top of the subducting plate (as shown in Figs. VII.4.5).

***2. Maubisse/ Sonnebait 'nappe'?***

Another possible 'suspect terrane' is the Maubisse/ Sonnebait series of authors. Like the Banda terrane it was viewed one of the higher 'nappes' and contains Permian- Cretaceous rocks and faunas that are very different from the Australian NW Shelf. De Waard et al. (1954, 1955, 1957) viewed the 'Sonnebait nappe' as the highest structural unit on Timor, Harris interprets it as a unit that is structurally below the Banda Terrane.

The Permian in Maubisse terrane or facies is composed of marls and reddish limestones interbedded with pillow basalts. Limestones are very rich in crinoids, blastoids and solitary corals of much higher diversity and more tropical aspect than nearby NW Shelf Permian. Fusulinid foraminifera are present as well, which are unknown from Australia. This already led Gerth ( ), Audley-Charles (1968), Brown et al. 1968 to assume these rocks originated thousands of kilometers North of Northern Australia which was peri-glacial in Early Permian time.

Permian limestones are presumably overlain by thin, condensed, Triassic cephalopod limestones of 'Tethyan' affinity (generally found as loose blocks) and by Jurassic- Cretaceous deep sea clays and pelagic marls. It may be viewed as an oceanic seamount assemblage that formed during a Permian breakup event, then drifted in oceanic setting until Cretaceous or Eocene collision with a subduction complex.

Some authors claim stratigraphic transitions between 'Maubisse' limestones and Permian Atahoc shales of the 'Gondwana sequence' and view the limestones and clastics as interfingering and lateral facies (e.g. Reed et al. 1996, Charlton et al. 2002).

### *3. Banda Terrane*

Scattered across the central zone of W Timor and E Timor are 15 complexes of the so-called 'Banda Terrane', name coined by Audley-Charles and Harris 1990, Harris 2006, etc.. These metamorphic- volcanic-sedimentary complexes are remnants of an apparently 'allochthonous' thrust complex, that often overlies intensely deformed Permian- Triassic siliciclastics (Figure VII.4.7).

Older names for Banda Terrane units include ôSchist-Palelo complexô(Tappenbeck 1939, De Roever 1940, Brouwer 1942, etc.), ôMutis Unitô(De Waard 1957, Marks 1961) and Lolotoi Complex (Audley Charles, 1965).

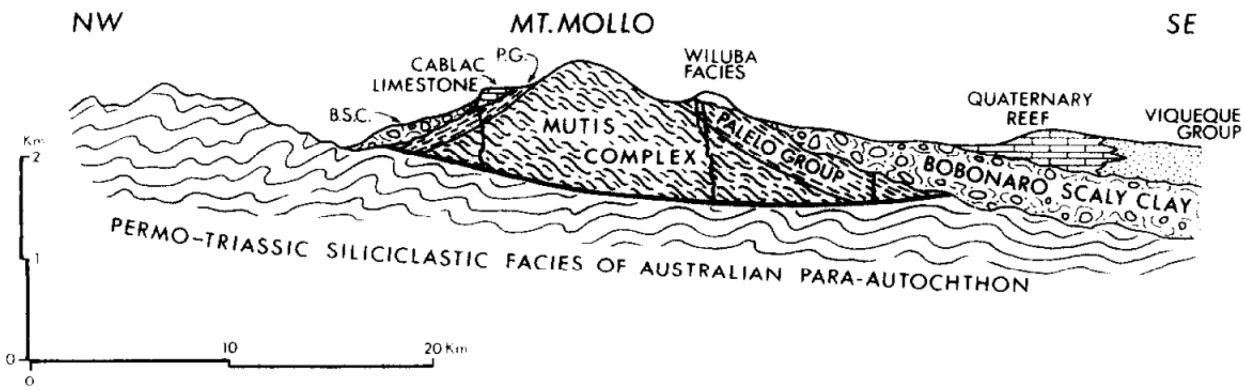



*Figure VII.4.7. Diagrammatic N-S cross-section across Banda Terrane thrusted unit at the Mollo complex of West Timor. Thick Mutis Complex metamorphics overlain by Palelo Group Upper Cretaceous-Paleogene flysch and arc volcanics (Audley-Charles 1985; after ??).*

Banda Terrane tectonostratigraphy reflects a Late Cretaceous- Paleogene 'active margin' setting and can not be correlated to any rocks or events on the NW Australian margin. There are, however, many similarities to the stratigraphy of SW Sulawesi and SE Kalimantan (Meratus) and also Sumba Island. These complexes have therefore been recognized as 'allochtonous nappes' of Sundaland origin since before the 1930's. (see also Earle 1981, Barber 1981, Audley Charles and Harris 1990,

These are outcrops of metamorphic rocks (Mutis, Boi, Mollo, Lolotoi, etc. complexes) often associated with ultramafic ophiolitic rocks, and stratigraphically overlain by 'Palelo Group' Upper Cretaceous and Eocene arc volcanics and 'flysch-type' sediments. There are also Eocene shallow water carbonates with SE Asian *Pellatispira* forams, unconformably overlain by latest Oligocene- Early Miocene shallow water Cablac Limestone.

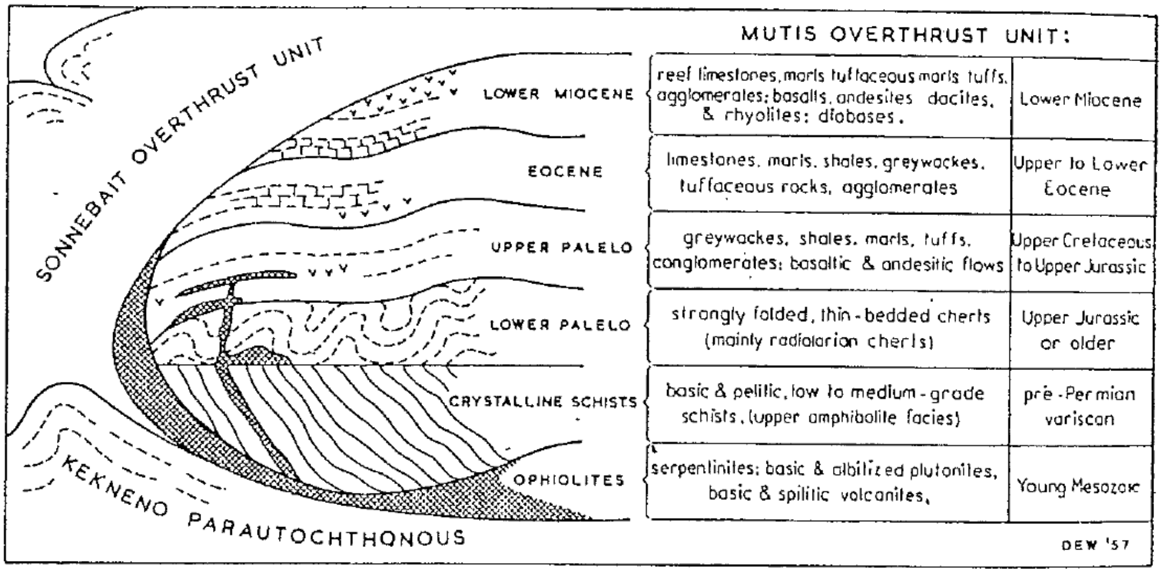



*Figure VII.4.8. Diagrammatic stratigraphy of 'Mutis Overthrust Unit (= Banda terrane) of West Timor from Marks (1961) (Palelo units now known to be of Cretaceous age))*

Banda terrane stratigraphy suggests the oldest rocks were affected by mid-Cretaceous metamorphism in a subduction zone (Sopaheluwakan 1990), presumably at the SE Sundaland margin, followed by mid-Cretaceous exhumation in a deep marine environment (Lower Palelo mid-Cretaceous radiolarian cherts), followed by Late Cretaceous marine turbiditic sedimentation.

The Banda Terrane blocks of Timor probably formed part of the active Sundaland margin, with Late Cretaceous and Eocene arc volcanics of the 'Great Indonesian volcanic arc' of Harris (2006). It was affected by an Oligocene folding-uplift event during a period of carbonate deposition (also seen on Sumba and SW Sulawesi), and must have broken away from the Sundaland margin in Miocene-Pliocene time, to end up in the Banda forearc after opening of the S Banda Sea (see also Barber 1979, 1981, Earle 1979, 1983, etc.).

*Eocene metamorphic cooling age*

It may be noted that radiometric ages of the Banda Terrane metamorphics vary widely. Some are Early Cretaceous, which is in line with the stratigraphic position below Late Cretaceous sediments, and the 87 Ma age for the youngest detrital zircon age in Lolotoi complex metasediments (Standley and Harris 2009).

Reported Middle- Late Eocene ages (~35-45 Ma) and some even younger, radiometric ages are clearly too young to be the original metamorphic cooling age, and may reflect a Late Eocene heating/cooling event from associated arc volcanism, or, as suggested by Sopaheluwakan et al. (1989) may reflect the timing of thrust emplacement of the Banda Terrane over a (detached?) part of the Australian continental margin.

Whichever of these ages age is favored, this metamorphism and younger thermal overprint are all much older than the Pliocene- Recent Australia- Banda Arc collision and could not have taken place along the NW Shelf passive margin.

*Banda Terrane uplift- Oligocene unconformity*

In the Banda Terrane of Timor Late Eocene limestones with *Pellatispira* are unconformably overlain by relatively undeformed latest Oligocene - Early Miocene Cablac Limestone. The basal conglomerate contains clasts of schists and Cretaceous sediments, suggesting a significant Oligocene folding-uplift event (Tappenbeck? ).

Tappenbeck (1939) interpreted this stratigraphic unconformity to represent the age of major thrusting on Timor. The oldest age of the post-thrust Cablac Limestone is well constrained by the presence of latest Oligocene larger foraminifera *Miogypsinoides complanata* and *Spiroclypeus* (Te4) in the basal conglomeratic beds of the Cablac-equivalent limestone (Marks 1954).

Remarkably, a similar unconformity at the base of earliest Miocene limestone is also known Sumba (Caudri 1934) and from SE Sulawesi, where *Miogypsina*-bearing limestones contain also reworked clasts of Upper Cretaceous *Globobotruncana* pelagic limestone and serpentine (Van der Vlerk and Dozy 1934).

### 5. 'Autochthonous' deep marine Pliocene Batu Putih/ Viqueque Formation, Central Basin

The 'autochthonous' latest Miocene- Early Pleistocene deep marine pelagic marls ('*Globigerina* Limestone') of the Batu Putih/ Viqueque Formation are exposed mainly in the Central Basin of both West and East Timor. This formation is the only deposit on Timor that is undisputably not tectonically displaced. Total thickness is probably up to ~800m (Hartono et al. 1978).

The deposition of the relatively undeformed deep water Batu Putih/ Viqueque pelagic marls above the Bobonaro melange/olistostrome and older intensely deformed older rocks shows:

1. the main folding-thrusting event(s) and melange formation on Timor happened before Late Miocene time;
2. paleobathymetry of ~1000- 1500m of the lower units suggests a major Late Miocene or slightly older subsidence event (De Smet et al. 1990) This possibly reflects the rifting/ breakup of North and Central Timor from the SW Sundaland margin druring the opening of the South Banda Sea.

The age of the Batu Putih/ Viqueque Formation is primarily Pliocene, but a late Middle Miocene- Early Pleistocene (N15-N22) range was suggested by Kenyon (1974) and Hartono et al (1978). Several more recent studies did not identify any beds older than latest Miocene (zone ~N18; Roosmawati and Harris 2009, Tate et al. 2014).

Paleogeography interpretations by Kenyon (1974) show an uplifted area North of the Central Basin, and deep marine sediment transport to the South for the later parts of the Viqueque Formation. The first recorded influx of turbiditic clastic sediments in the Pliocene pelagic deposits ranges from ~2.2 Ma in West Timor (De Smet et al. 1990), ~3-4 Ma (Harris )
This is thought to reflect the first uplift above sealevel and erosion in northern Timor.

Another key observation to be explained is the basement lithologies in Suai explaration wells in the SW part of Timor Leste. These wells show ~ xxx m of Viqueque Formation marls above relatively thick Bobanaro olistostrome/ melange, above Eocene *Pellatispira* Limestone and/or Lolotoi metamorphics (Cockroft et al. 2005). These rocks only occur in the 'Banda Terrane'. If correctly described and described this 'kills' the interpretation of Figure VII.4.4, and the notion of Gondwana Sequence' as imbricated sediments of the current Australian margin.

The Batu Putih pelagic marls grade upward into turbiditic sediments and record the rapid Late Pliocene-Pleistocene uplift and emergence of Timor island above sea level:
- uplift from ~1000- 1400m water depth to present elevations of >500m above sea level after 0.2 Ma (Late Pleistocene; De Smet et al. 1990, Van Marle 1991);
- .

### 6. Kolbano Sequence Australian Margin sequence/ Ofu series '

A belt of imbricated, north-dipping thrust slices along the South coast of Timor can be followed from the Kolbano area in West Timor to Betano area in Timor Leste. It also continues southward offshore as an imbricated package all the way to the Timor Sea trench (e.g. Poynter et al. 2013, Keep ?)). Thrust slices are composed mainly of deep water Triassic- Early Tertiary sediments. These were named Ofu series by Dutch workers in the 1930's- 1950's.

Unlike the tectonostratigraphic units of more questionable origin discussed above, these may safely be interpreted as distal slope sediments scraped off the N-ward subducting Australian continental margin, as an accretionary prism system. Stratigraphy has been described in detail by Charlton ( )

Structural restorations by Sani et al. (1995) suggest shortening of ~45 km in the onshore Kolbano thrust belt, mainly between 2.2- and 1.6 Ma, after which the main deformation migrated South (offshore) to the present-day Timor Trough. Total shortening, excluding shortening under Timor Trough, probably >200 km. The onset of collision was probably at ~3.7 Ma; subduction at the Timor Trough locked up at ~1.6 Ma.

The Cretaceous in this unit with its reddish claystones and radiolarian cherts and locally common manganese nodules and laminae and partly dissolved shark teeth, was already recognized by Molengraaff (1915?).as very deep-sea clays, deposited in several 1000's of meters of water, below the Carbonate Compensation Depth.

Mesozoic radiolaria were studied by Tan Sin Hok (), Munasri, Recently there has been a sharp increase in small-scale mining of Cretaceous manganese deposits by local villagers in the Niki-Niki area (Idrus et al. 2012, 2013).

The Triassic- Cretaceous deep marine deposits of Rote island are probably equivalent of Kolbano complex of Timor.

### *7. North Timor to Tanimbar Ophiolite- Aileu metamorphics belt*

Along the North coast of Timor Island are large bodies of a relatively young ophiolite complex (Atapupu-Manatato peridotites). These ultramafic rocks are underlain by a metamorphic sole of Aileu Complex schists, composed of amphibolites, quartzite, etc. A gradual increase in metamorphic grade from Permo-Triassic clastics towards schists at the ophiolite body was described in NE West Timor by Barber et al. (1977).

The Aileu metamorphic complex appears to be mainly from metamorphosed 'Maubisse complex' Permian sediments and basic volcanics (Molengraaf and Brouwer 1915, Barber and Audley Charles 1977).

Similar Aileu-type ophiolite-metamorphic rocks are found farther East on many islands of the innermost parts of the Outer Banda Arc, from Kisar to Leti, Moa, Sermata, West Tanimbar, and probably all the way to Seram (Figure VII.4.9).

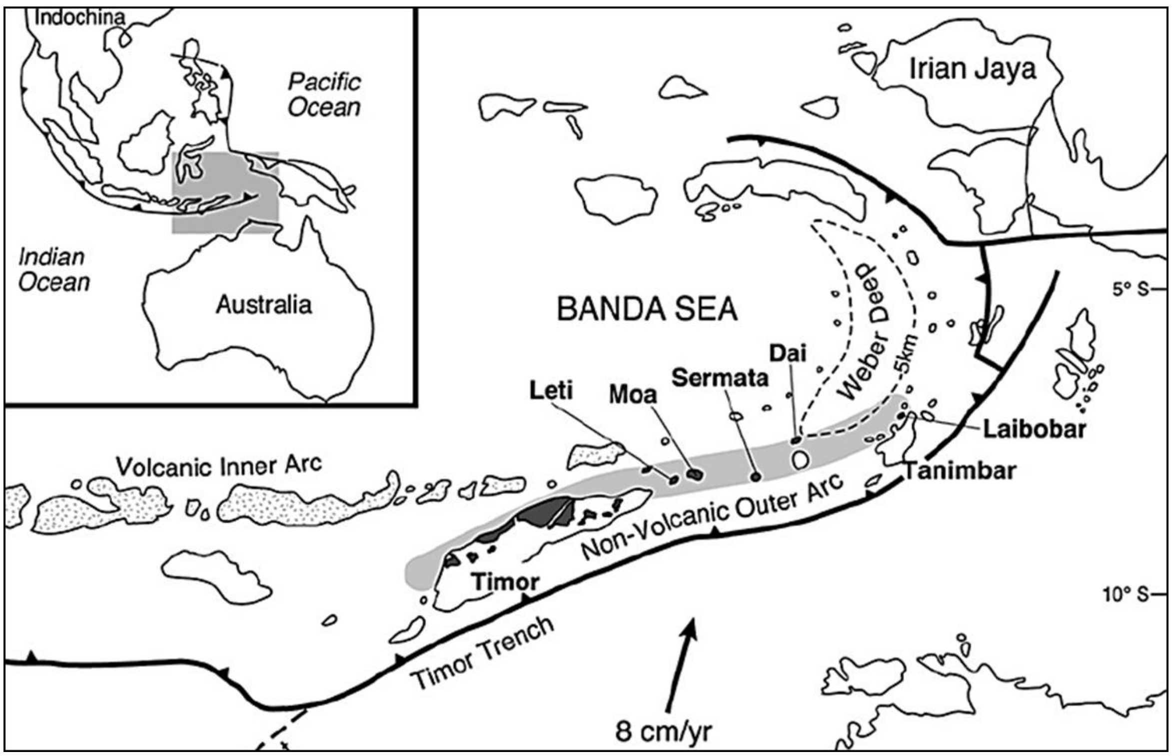



*Figure VII.4.9. Distribution of young ophiolite-metamorphic rocks from North Timor to East (in black) (Kaneko et al. 2007)*

The ultrabasic complex was described by a.o. Molengraaf and Brouwer (1915; Leti), Berry and Grady (1981), Berry and McDougall (1986) (Late Miocene cooling ages ~8-6 Ma), Harris (1991) and Kaneko et al. (2007).

Middle-Late Miocene radiometric ages (cooling/uplift ages?) suggest the North Timor Aileu metamorphic-ophiolite complex is considerably younger than similar Cretaceous rocks of the Banda terrane of the central zone, but appear to predate the collision between the Timor- Tanimbar sector of the Banda fore-arc and the NW Australian continental margin.

Reported radiometric cooling ages of metamorphics vary from:
- 12- 18 Ma (AFT data from Kisar; Standley and Harris 2009);
- 10-11 Ma (K-Ar ages from Leti; Kaneko et al, 2007);

- ~8 Ma (Ar/Ar of hornblende from North Timor; Berry and McDougall, 1986);

The young 'Aileu ophiolite- High-P metamorphic complex' can be traced East through the innermost Banda Outer Arc islands Leti, Moa, Sermata, etc. to Laibobar West of Tanimbar (Figure VII.4.9; Molengraaff and Brouwer 1915, Brouwer 1921, Kaye 1989, Kaneko et al. 2007), etc.. From there it continues north via the islands of Tidor, Kasiui, Watubela and Manawoko, where serpentinites, amphibolites and schists were reported by Verbeek (1908) and Wichmann (1925), all the way around to the ophiolite-metamorphic complexes of Seram.

The surface geology of Leti island was described in remarkable detail by Molengraaff and Brouwer (1915; reviewed in Van Gorsel 2012; Figure VII.4.10). They describe what appears to be a metamorphic sole under a serpentinite thrust, formed from increasingly higher-grade metamorphic Permian clastics, very similar to the Aileu Formation described from NE West Timor by Barber et al. (1997).

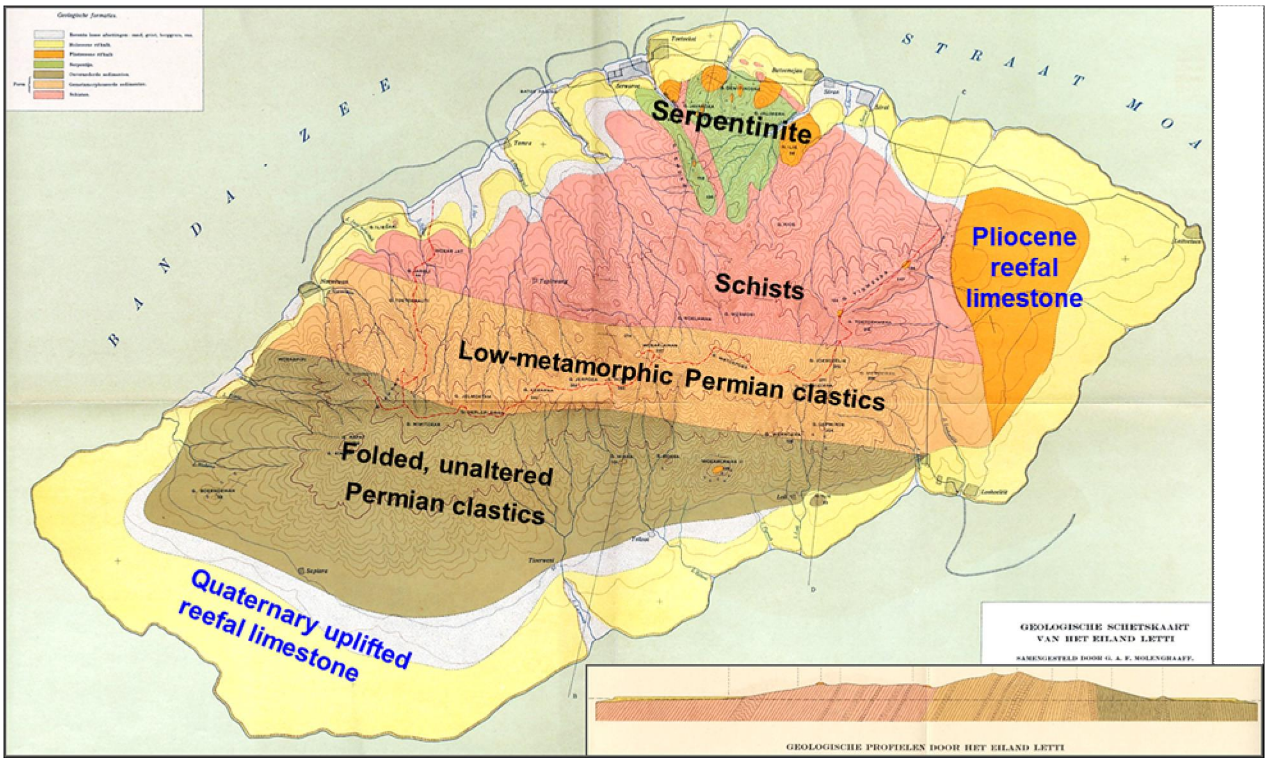



*Figure VII.4.10. Geologic map of Leti Island (Molengraaf and Brouwer 1915), describing a 'metamorphic sole' under and ophiolite body. Map shows N-dipping non-metamorphic Permian sediments in South (brown), gradually grading into high-metamorphic schists in N direction, where it abuts a serpentinite body (light green). Entire island surrounded by >300m thick uplifted Pleistocene coral terraces (yellow)*

### *Subduction at the Timor Trough*

By 1975, in the early days of plate tectonics interpretation in the Indonesian region, geologists interpreted the Timor Trough as the eastern extension of the Java-Sunda Trench subduction zone, where the axis of the Trough marks the surface trace of a subduction zone, but here with downwarping of continental crust into the subduction zone instead of oceanic crust (e.g. Figure VII.4.1). This is still presumeably a correct interpretation, but in the mid-1970's this was a topic of heated debate between Mike Audley Charles (Imperial College, London) and Warren Hamilton (US Geological Survey).

Audley-Charles and Milsom (1974) argued that the Timor Trough is 'merely a downbuckle in continental crust' and that the actual trace of the subduction zone is north of Timor island. This view was disputed by Fitch and Hamilton (1974), Katili (1975), Hamilton (1979), Jacobson et al. (1979), Bowin et al. (1980), etc, but it still appears to persist today among some workers (Audley-Charles 2011, Baillie et al. 2013, 2014).

The traditional interpretation of the Timor Trough as subduction trench (e.g. Hamilton 1978) still makes the most sense. The obvious uninterrupted bathymetric deep that continues East from the Java Trench into the Timor Trough and father East is closely parallel to the axis of negative gravity anomalies, that had been known since the marine geophysical surveys of Vening Meinesz (1930). The location of the Java Trench and Timor Trough immediately south of a belt of imbricated sediments became even clearer after early seismic reflection surveys by Shell in the early 1970's (e.g. Beck and Lehner 1974). This thus became the 'text-book' trench-accretionary prism complex of the Banda subduction zone.

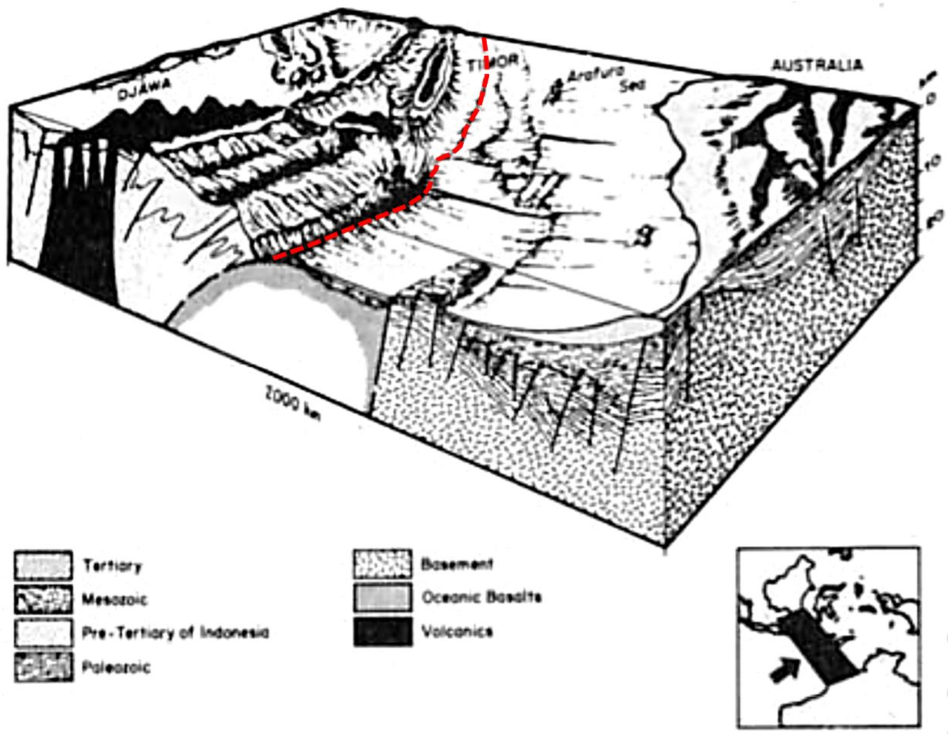



*Figure VII.4.11. Block diagram showing 'traditional' view of Timor Trench as the continuation of the Java subduction trench (Beck and Lehner 1974) (a continuous bathymetric deep in front of imbricated accretionary wedge)*

The Timor Trough/ Trench has all the characteristics of a subduction trench, although it is now mostly inactive:

1. a wide belt of imbricated distal Australian margin sediments runs along the south coast of Timor, both onshore and offshore. This accretionary prism represents 100's, if not 1000's, of kilometers of shortening in ocean floor and distal continental margin sediment cover, and this magnitude of shortening can only be accounted for by subduction;
2. downward buckling of the Australian continental shelf towards the Timor Trough: the present-day slope of the Australian margin at the Timor Trough is not a depositional slope, but the result of post Middle Pliocene (2.4 Ma) downward flexing of Australian crust that was formerly at shelfal depths (DSDP Site 262; Veevers et al. 1978);
3. There is clear bathymetric link between the Timor Trough and the Javan Trench, which is the 'holotype' of subduction trenches.
4. Seismic tomography images of the downgoing plate shows the cool subducting plate below Timor surfacing at the Timor Trough. Seismic activity and GPS measurement suggests there is little or no active subduction at the Timor Trench today (Kreemer et al. 2000), as the arrival of Australian continental blocks terminated subduction at this sector.

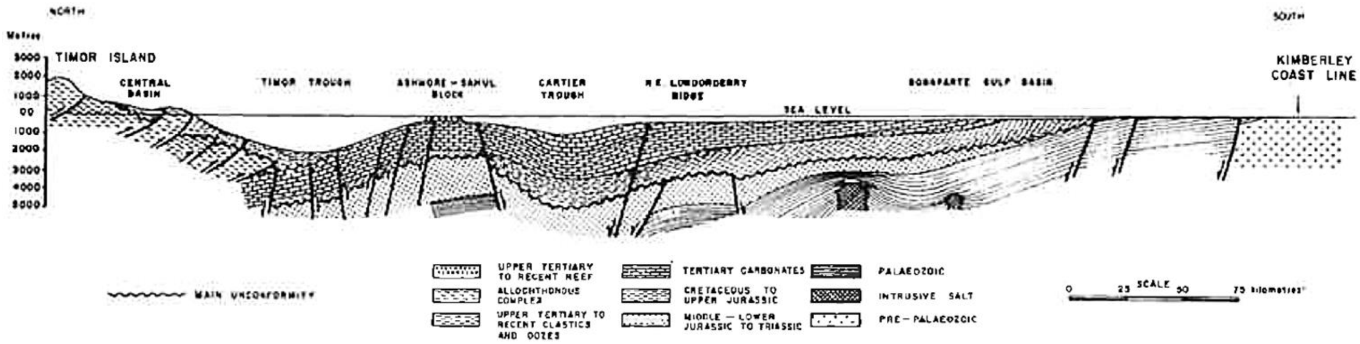



*Figure VII.4.12. Cross-section from Australian NW Shelf (Bonaparte Basin) to Timor (Powell and Mills 1978).*

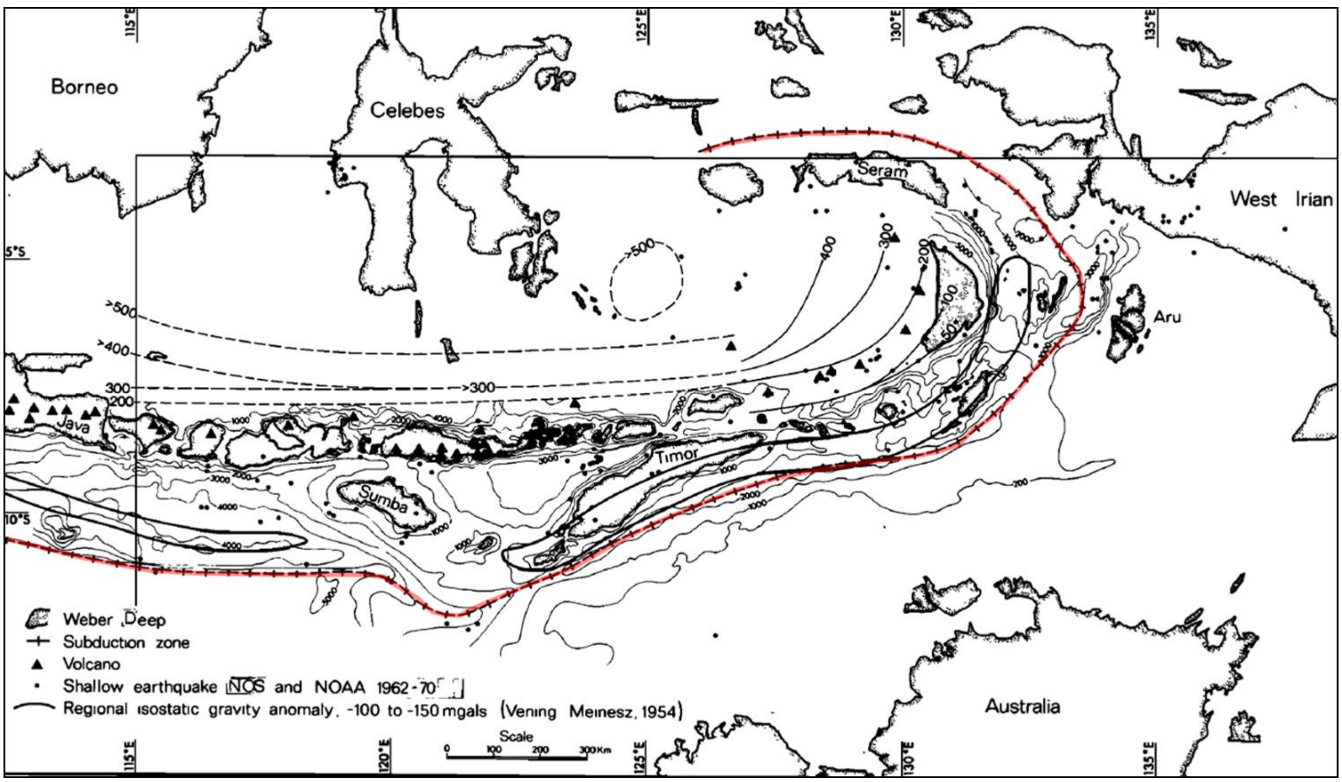



*Figure VII.4.13. The Banda arc subduction zone trench can be followed from the Java Trench, through the axis of the Timor and Tanimbar Troughs to Seram- Buru (Fitch and Hamilton, 1974).*

### *Paleomagnetic studies*

Several paleomagnetic studies provide interesting constraints on the paleoposition of the various tectonostratigraphic terranes of Timor.

*Permian Maubisse- Cribas Formation*

1. Wensink and Hartosukohardjo (1990a) placed the Permian Maubisse limestones at paleolatitude of ~39° with 55° clockwise rotation since then;
2.. Panjaitan and Hutubessy (1997, 2004) placed the Permian Maubisse and Cribas Formations at ~25-48° in the northern Hemisphere, along the southern margin of Eurasia, questioning the prevalent 'Gondwana Sequence' interpretation.

*Mid-Cretaceous Nakfunu Formation oceanic sediments*

Wensink et al. (1987) placed the mid-Cretaceous Nakfunu Fm bathyal red clays in the Kolbano accretionary prism at paleolatitude of ~20°, probably in Southern Hemisphere, which was probably well North of the NW Australian margin at that time (presumably at 30-40° S). Today it is at 10°S. If correct, this suggests (a) sediments moved ~1200 km North since deposition in an oceanic environment, and (b) the Kolbano fold-thrust belt/ accretionary prism may contain the off-scraped sedimentary cover of several 1000's of kilometers of subducted oceanic and distal continental margin crust!

*Eocene Metan Formation arc volcanics of Banda Terrane*

Wensink and Hartosukohardjo (1990b) placed the Eocene Metan volcanics from the Mutis Massif of West Timor (= allochthonous Banda Terrane) at ~17°N. These volcanics were presumably part of the SE Asia Eocene magmatic arc system that continued East from the Sundaland margin.

### *Young uplift of Timor and surrounding islands*

Late Miocene and younger tectonics on Timor include normal faulting, strike slip faulting and significant Late Pliocene- Recent uplift. Except for the Kolbano/ accretionary wedge on-an offshore of the South coast of Timor there are no compressional/ collisional folding ot thrusting.

Timor and most of the surrounding islands show evidence of up to several kilometers young uplift, in the form of uplifted Pleistocene coral terraces, uplifted Late Miocene- Pleistocene deep marine deposits and thermochronologic data suggesting several kilometers of uplift.

Pleistocene reef terraces (Soe Formation) form belts of limestone around the coasts, that are unconformable over all older rocks.

Elevations of Pleistocene reefs on Timor and nearby islands include (see also Figure VII.4.15):
- 1280m or more (Molengraaff 1912)
- Kisar (185m; Kuenen 1933, Standley and Harris 2009),
- Aitaro (700m; Ely et al. 2011),
- Dai (650m; Kaneko et al. 2007),
- Sermata (400m; Brouwer 1921, Kaneko et al 2007),
- Babar (650m; Verbeek 1908),
- Kai Besar (340m; Verbeek 1908),
- Sumba (475m; Jouannic et al. 1988, Pirazzoli et al. 1993), etc.

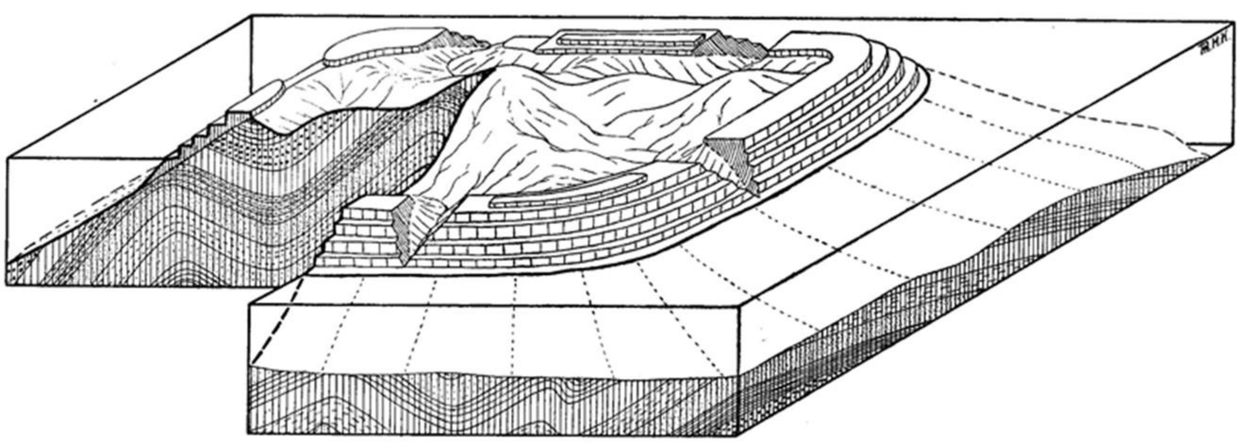


*Figure VII.4.14. Kisar Island, N of Timor, showing core of metamorphic rocks, surrounded by four or more well-developed uplifted Pleistocene coral terraces (Kuenen 1933)*

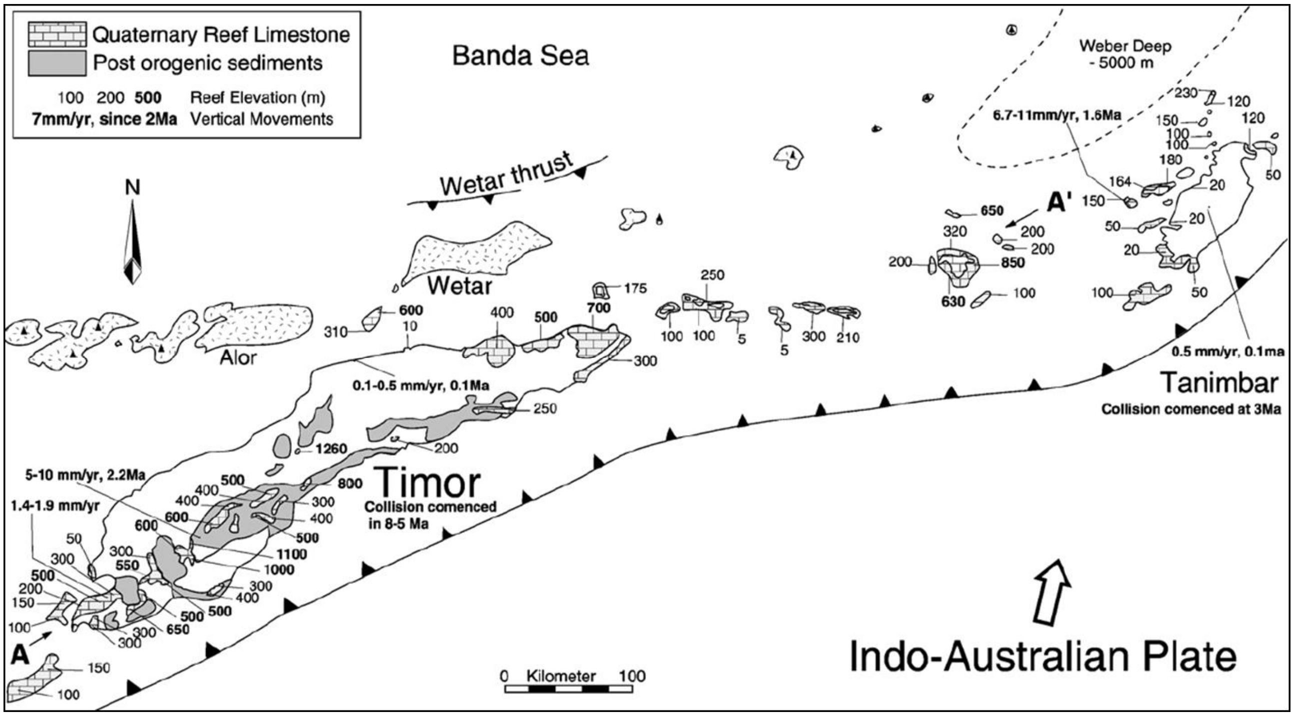



*Figure VII.4.15. Compilation of elevations of uplifted Pleistocene reefal limestones in the Outer Banda Arc (Kaneko et al. 2007). Young uplift here is generally tied to isostatic rebound after slab breakoff.*

Thermochronologcal analyses by suggest an increase in amount of Late Pliocene- Recent uplift and erosion in Timor Leste (~1-2 km in the Kolbano foldbelt in South Timor to 3-5 km in the Aileu slate belt in the North since ~1.8 Ma; Tate et al. (2014).

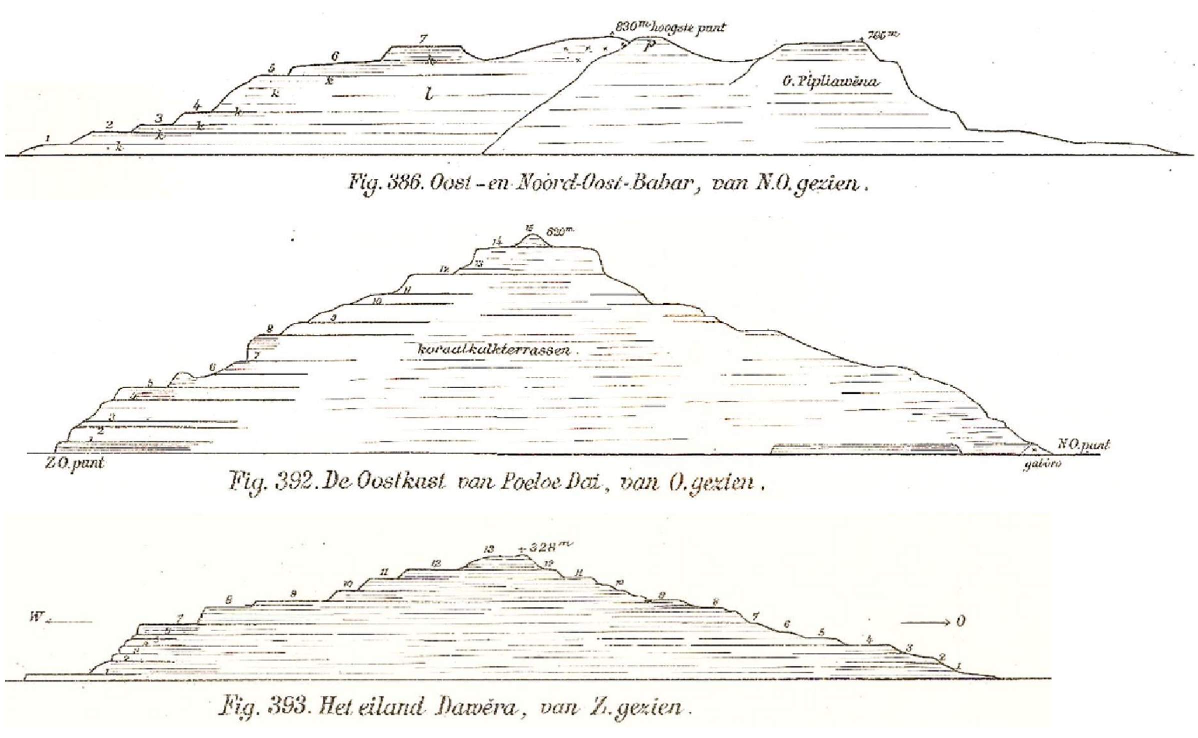



*Figure VII.4.16. Many of the smaller outer arc islands East of Timor are largely covered by Pleistocene coral reef terraces, Examples from Babar (from E-NE), Dai (from East) and Dawera (from South) with up to 16 terraces up to 830m elevation (Verbeek, 1908).*

This young and probably still ongoing uplift of Timor and surrounding islands is probably best explained as isostatic rebound after slab breakoff (Figure VII.4.17; Kaneko et al. 2007).

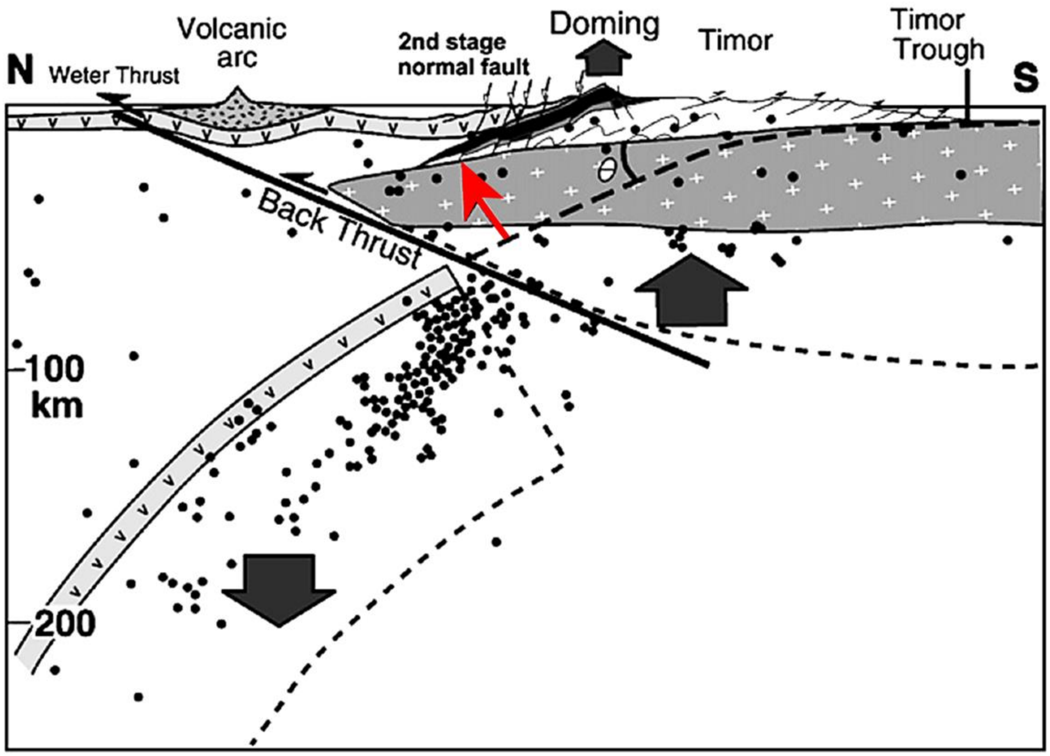



*Figure VII.4.17. The most likely explanation for late uplift of Timor (especially in North) and adjacent Banda outer arc islands is isostatic rebound of buoyant subducted Australian continental crust after slab breakoff, as depicted in this cross-section of Kaneko et al. (2007).*

### *Paleontology of Timor*

Timor has been famous for over 100 years for its rich Permian- Triassic marine macrofossils. The West Timor expeditions of Wanner (1909, 1910-1911), Molengraaff (1910-1912) and Jonker (1915) were largely aimed at fossil collecting. Most of these collections are now in Naturalis Museum in Leiden, The Netherlands.

Early classic paleontological studies were mostly carried out or commisioned by German paleontologist Johannes Wanner between 1907 and 1942.

Many beautifully illustrated paleontological monographs were produced in 16 volumes of the Wanner-edited series 'Palaontologie von Timor', published in Stuttgart, Germany. These include those on ammonites (Welter 1922, Diener 1922), corals (Gerth 1921), crinoids and blastoids (Wanner 1916-1949), brachiopods (Broili 1916), molluscs (Krumbeck 1921), etc.. Much of this work on Paleozoic and Mesozoic paleontology of Timor was summarized in Van Gorsel (2014a,b).

Unfortunately, most of this classic fossil material was not collected in stratigraphic context, but came from displaced blocks in 'Bobonaro melange' or was obtained from local villagers.

### *Oil and gas seeps and exploration*

Oil and gas seeps are relatively common on Timor island, but no commercial hydrocarbon fields have been discovered here, despite:

- five phases of oil-gas exploration in Timor Leste since 1893 (Cockroft et al. 2005, Charlton and Gandara 2014, Charlton et al. 2017)
- >20 onshore wells drilled in Timor Leste by Timor Oil between 1914 and 1975 found small non-commercial oil and gas accumulations only.
- onshore exploration in West Timor by Amoseas in early 1990's (Banli 1 well; Sawyer et al. 1993, Sani et al. 1995))
- nearby offshore wells by BOCAL/Woodside in the 1970's (e.g. Mola 1, Savu 1 wells).

Large offshore oil-gas fields South of the Timor Trough are not in 'Timor geology', but are in the Jurassic 'Plover sandstone play' of the Australian NW continental margin (Bayu Undan and Sunset-Troubadour fields in the Timor Leste Joint Operating Zone; Abadi field in Indonesian waters

Over 30 oil and gas seeps have been documented on Timor, mainly along the south coast of Timor Leste (Figure VII.4.18; Charlton 2002). These seeps have been tied to Upper Triassic bituminous marine limestones of the Aitutu Formation, which may contain up to 23% TOC.

More recently thin, organic-rich 'paper shales' from West Timor, presumably Permian lacustrine deposits, were described as potential hydrocarbon source rocks by Lelono et al. (2016, 2017).

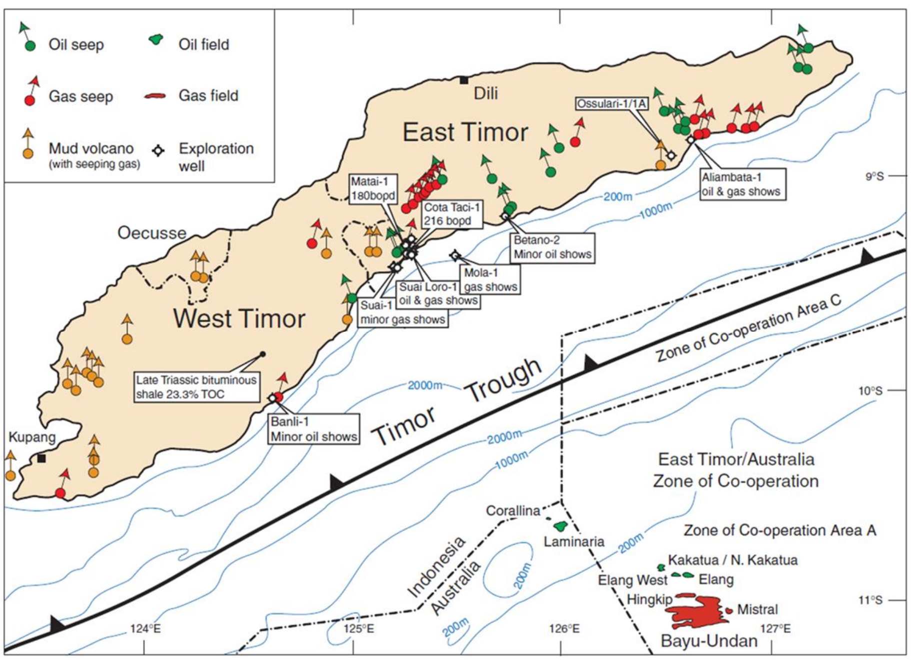



*Figure VII.4.18. Oil and gas seeps on Timor. (Charlton 2002)*

Due to the structural complexity of Mesozoic rocks in the imbricated thrust belt of South Timor island accumulation of significant commercial hydrocarbon deposits is perhaps unlikely, and exploration would be extremely challenging. However, the presence of deeper, more simple inversion structures in both West Timor and Timor Leste has been suggested by Charlton (2002, 2004 and others).

### *Mud volcanoes and Bobonaro melange*

Mud volcanoes/ diapirs are common across Timor island, with more than 15 fields mapped in West Timor by Tjokosapoetro (1978), mainly associated with the young Central Basin or with the Kolbano Complex accretionary prism (Figure VII.4.19). Some are associated with older beds, probably in wrench fault zones (Barber et al. 1986).

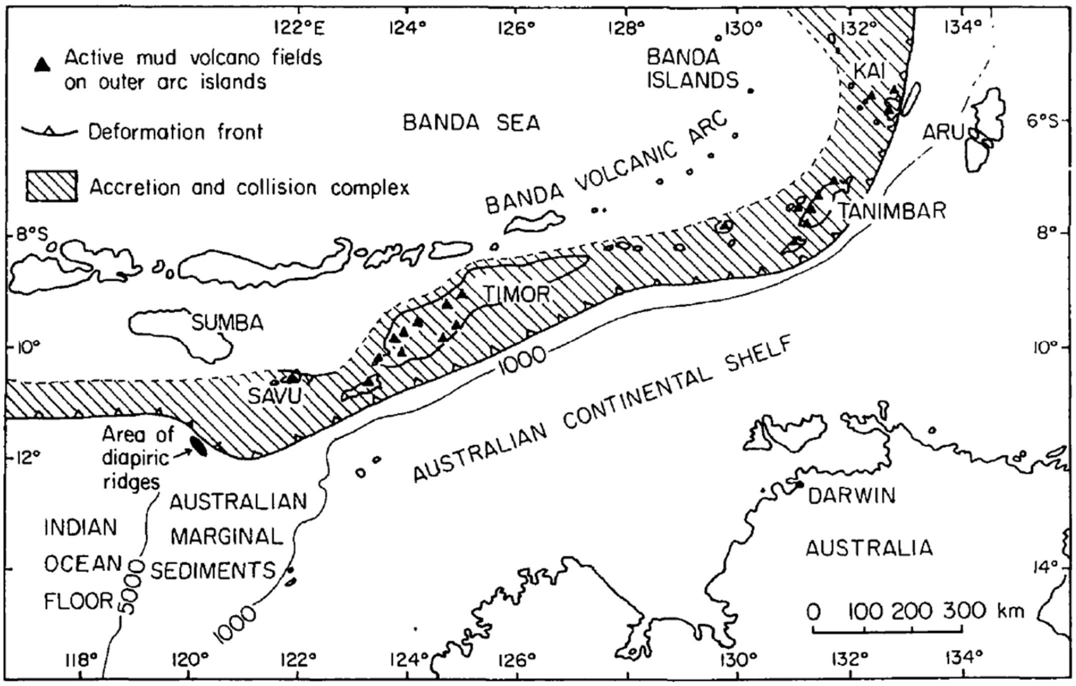
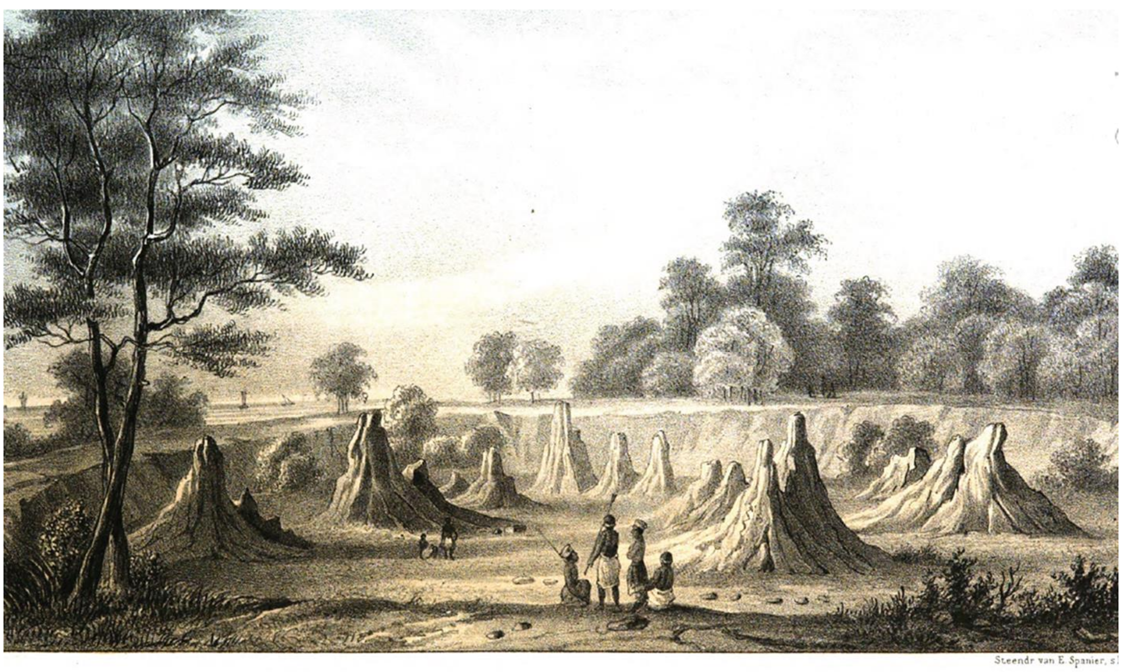



*Figure VII.4.19. Mud volcanoes (black triangles) are present on most islands of the Outer Banda Arc accretion/ collision complex (Barber and Brown 1988).*

Mud diapirism is triggered by overpressured shales, and forms chaotic surface deposits with large blocks in a clay matrix. Some mud volcanoes produce saline water, others have flammable gas.



SLIJKVULKANEN VAN POELOE KAMBING. IN DE STRAAT SAMAUW.

*Figure VII.4.20. Crater of 'mud volcano' on Pulau Kambing island, off SW Timor (from S. Muller, 1857).*

Most of the 'Bobonaro scaly clay' melange with large blocks on Timor may actually have been generated by mud diapirs, sourced from the underlying Late Triassic- Jurassic marine shale-dominated section, rather than as sedimentary olistostromes or tectonic overthrusting (Barber et al. 1986, Barber and Brown 1988, Barber 2013).

Seismic profiles and outcrops of islands like Savu, Roti, show that mud diapirism is particularly common in the frontal parts of accretionary overthrust complexes. (e.g. Ware and Ichram 1997, Harris et al. 2009).

### *Roti (Rote) Island*

Roti (Rotti, Rote) is a relatively small island SW of Timor, and an exposed part of the 'Savu-Roti Ridge'. Its geology was first observed by Wichmann (1892), who, in 1889 discovered the first Jurassic fossils in Eastern Indonesia (described by Rothpletz (1891, 1892). Significant later work was done by Verbeek (1908), Brouwer (1914, 1921), Hasibuan (2007) and Roosmawati and Harris (2009).

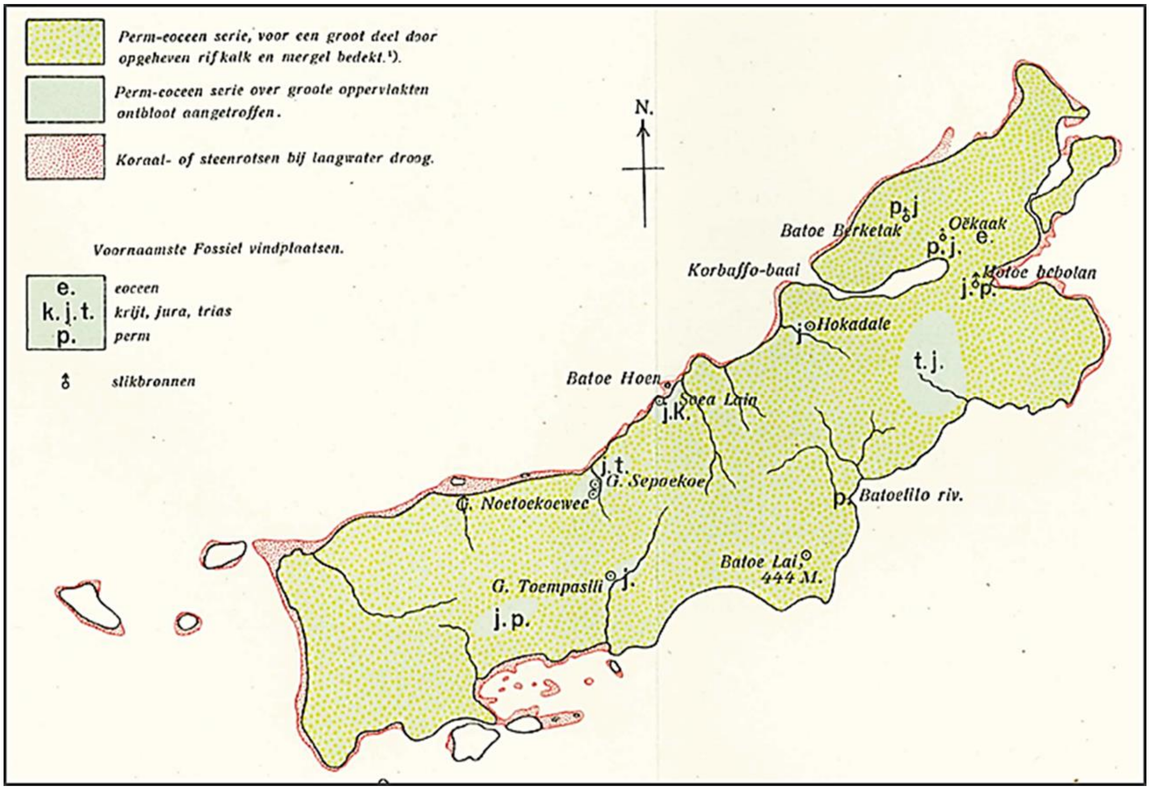



*Figure VII.4.21. Early geologic map of Roti by Brouwer (1921). Most of island is folded Permian- Eocene successions, largely covered by young marls and Quaternary reef limestones. Varous 'windows' in young cover yielded Permian (p), Triassic (t), Jurassic (j), Cretaceous (k) and Eocene (e) fossils*

The geology of Roti appears to be a continuation of the Kolbano thrust-belt/ accretionary prism of South Timor. It is composed mainly of folded and commonly steeply dipping Mesozoic- Tertiary deep marine sediments, with some mud volcanoes and associated 'melange' deposits, unconconformably overlain by thin Neogene marls (equivalent of Batuputih Formation of Timor?) and widespread uplifted Quaternary coral reef terraces. The Geological Survey map of Rosidi et al. (1979, 1996) shows Roti island as Tertiary melange overlain by Quaternary limestone, which does not adequately characterize the nature and geologic complexity of Roti.

The stratigraphic succession can be summarized as:

1. Triassic sandstones ('Babulu-equivalent'?), overlain by Late Triassic limestones ('Aitutu-equivalent'?) with molluscs *Daonella, Halobia* and *Monotis salinaria* (recognized to be virtually identical to Norian facies in the European Alps by Rothpletz (1892);
2. Jurassic is known from two settings (a) folded Wai Luli Fm-equivalent very deep marine reddish marly limestones and calcareous shale with radiolaria, chert and manganese nodules (Brouwer 1921), and (b) Jurassic ammonites from mud volcano deposits (see below);
3. relatively thin Cretaceous pelagic shales, limestones and chert with *Globotruncana*, etc. (equivalent of Nakfunu and Borolalo Formations of Timor;
4. Tertiary Ofu Formation-equivalent pelagic limestones;;
5. Pliocene- Early Pleistocene deep marine marls ('synorogenic' Batu Putih facies), 37-237m thick, in discontinuous patches along the South coast. Roosmawati and Harris 2009).

*Mud volcanoes*

Several mud volcanoes and assumed mud volcano deposits were described by Wichmann (1892), Verbeek (1908), Brouwer (1921) and others. Roosmawati and Harris (2009) interpreted these deposits as equivalent of the Bobonaro melange of Timor.

Blocks and clasts in the mud volcano/ melange include:
(1) Early and Middle Jurassic ammonites and belemnites. Ammonites and rock similar to mud volcano ammonites from Yamdena (Wanner and Jaworski 1931);
(2) blocks of reddish fossiliferous Permian limestones, shales and porphyric rock, with *Timorites* ammonite (= 'Maubisse facies' of Timor)
(3) rare crystalline schists.

*Young uplift*

As for Timor, young upift of Roti island is demonstrated by:
1. the extensive Pleistocene coral limestone terraces that are now uplifted up to 210m above sea level (Brouwer 1921). Merrits et al. (1998) suggst Roti island uplifted 170m in the last ~125,000 years.
2. Pliocene- Early Pleistocene deep marine marls deposited in ~3000m water depth are now exposed in outcrop, suggesting ~3km of uplift in the last 2 million years (= ~1.5mm/year; Roosmawati 2005, Roosmawati and Harris 2009)

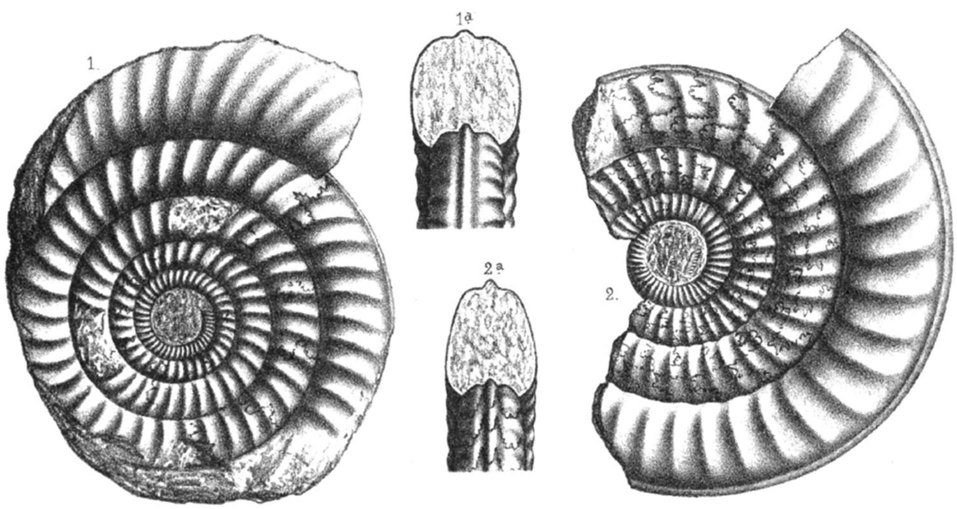
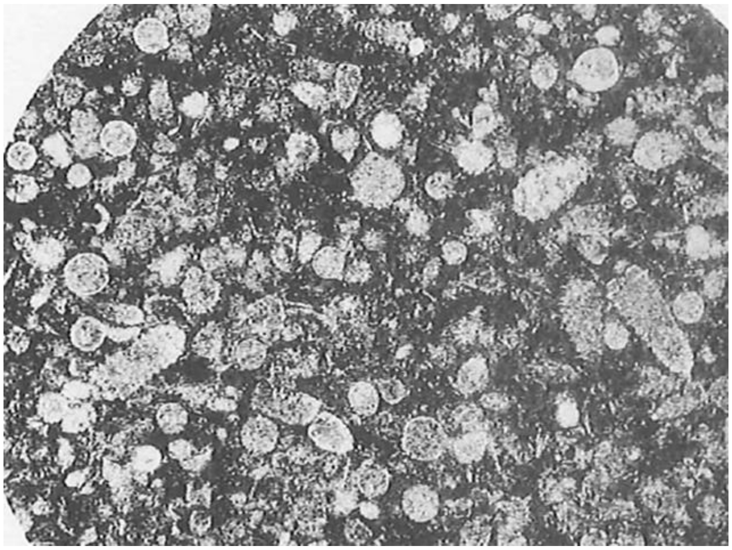



*Figure VII.4.22. The first Jurassic ammonites from East Indonesia were found on Roti island by Wichmann in 1899. The species figured above are Early Jurassic Arietites were described as A longicellus and A. rotticus n.sp. by Rothpletz (1892).*

*Paleontology*

A bit like 'big sister' Timor, the island of Roti has been a source of much paleontologic interest:
- Permian brachiopods were described by Broili (1922), corals by ?
- Late Triassic macrofaunas were described by Rothpletz (1892), Wanner (1907), Renz (1909) and Krumbeck (1921), including 'Tethyan' bivalve molluscs *Monotis salinaria, Daonella*. Late Triassic ammonites by Wanner (1911), Triassic belemnites by Von Bulow (1915).
- Early and Middle Jurassic ammonites by Rothpletz (1892), Boehm (1908), Krumbeck (1922) and Jaworski (1933). Mainly Early Jurassic (*Dactylioceras* spp., *Arietites* spp., *Arnioceras,* etc.) also some Middle Jurassic (*Macrocephalites*). Of North Tethyan affinities? (Meister 2007).
- Jurassic belemnites by Stolley (1929), Stevens (1964?)
- Middle Jurassic 'low-latitude' radiolaria by Sashida et al (1999);
- Late Jurassic calcisphere limestones described by Brouwer (1921) and Wanner (1940);
- Cretaceous radiolaria in the pioneering study of Tan Sin Hok (1927), using samples collected by Molengraaff and Brouwer. Tan's assumption that his radiolarian-rich samples from Roti were of Neogene age was proven to be wrong by Riedel and Sanfilippo (1974; Albian-Turonian ages) and others.
- Late Miocene and younger calcareous nannofossils first studied by Tan Sin Hok (1927) and re-studied by Kamptner (1955) and Jafar (1975). A chalk sample from Bebelain belongs to Late Miocene zone upper NN9

(*Discoaster hamatus* zone; early Tortonian, ~10 Ma), but also contains common reworked Early Cretaceous-Early Miocene nannoplankton (Jafar 1975).)



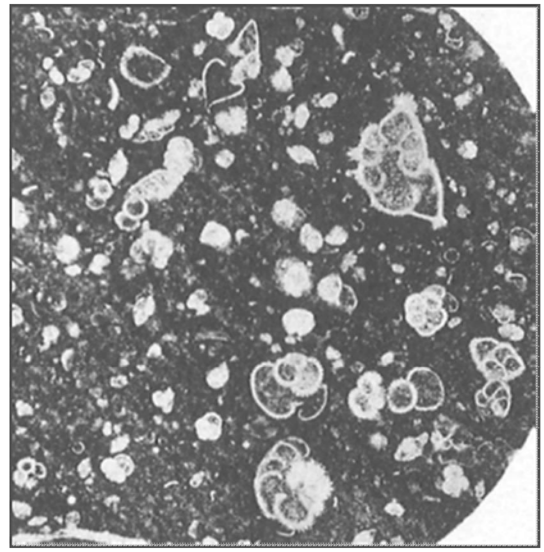


*Figure VII.4.23. Thin sections of pelagic sediments from Sua Lain area, N coast Roti. Left: Upper Jurassic marl rich in radiolaria and calcispheres; Right: Upper Cretaceous deep marine limestone with keeled Globotruncana and other planktonics (Brouwer, 1921).*

A final 'oddity' on Roti island, given the deep water nature of the Jurassic- Paleogene section, is the presence of thin (Middle?) Eocene limestone on the Landu Peninsula of NE Roti. It reportedly is folded in with the Mesozoic sediment series and contains common with common *Nummulites* and other shallow marine larger foraminifera (*Discocyclina, Asterocyclina*; Brouwer 1921, Douville 1923). This is most likely a calciturbidite in deeper marine facies.

A similar-age Eocene shallow marine limestone with *Nummulites javanus, Discocyclina* and *Alveolina* was reported from the island Raijuwa (Renjuwa) SW of Savu by Verbeek (1908). Here it is unconformably overlain by Early Miocene *Lepidoocyclina* Limestone, which suggests it exhibits more Sumba-like geology.

### *Timor area plate reconstructions*

The presence of both clearly allochthonous (Banda Terrane) and clearly autochthonous Australian margin units (Kolbano thrust belt) of Timor is well established, but, as discussed above, there are still different opinions on some of the intermediate units.

Plate reconstructions are a useful tool to visualize the various possible scenarios suggested by interpretations of tectonostratigraphies and structural styles. Somwhat remarkable are Hall reconstructions ??...

One reconstruction scenario that probably best honors the different tectonostratigraphies is shown in Figure VII.4.24 (Villeneuve et al. 2010). It shows:

1. in Eocene- Early Oligocene time the Timor Banda Terrane (Tm) was part of a magmatic arc system, together with Sumba and West and North Sulawesi.
2. This magmatic arc was built on a continental sliver that had just separated from the East Kalimantan/ SE Sundaland margin by Middle-Late Eocene opening of the Makassar Straits- Celebes Sea marginal backarc basin. This changed the Sumba- Banda Terrane- West/North Sulawesi arc from a Late Cretaceous-Paleogene continental margin arc to an intra-oceanic arc;
3. Collision of microcontinental plates(s) around Early or Middle Oligocene time with one or more microplates: Kolonodale Block (5 on Figure VII.4.24) with the West Sulawesi part of the arc, and (2) 'Timor-para-autochthonous'/'Gondwana Sequence' (4 on Figure VII.4.24) with the Timor Banda Terrane. Comparable Mesozoic stratigraphies of the colliding plates suggest (a) these two colliding microcontinental blocks may actually have been a single block; (b) the onset of pelagic sedimentation suggests they separated from the Gondwana margin in Triassic time, and (c) Permian- Early Triassic sandstone provenance suggests these

plates morely likely originated from near the Tasmanide active margin of New Guinea than from the NW Australia margin.

4. Plates that will collide with East Sulawesi in Miocene time (Banggai-Sula, etc.) are shown as still 'on hold' in the Indian Ocean Realm, but not necessarily in the position shown in Figure VII.4.24.
5. Late Miocene- Pliocene opening of the South Banda Sea separates Sumba and Timor from the area South of its former neighbour Sulawesi.

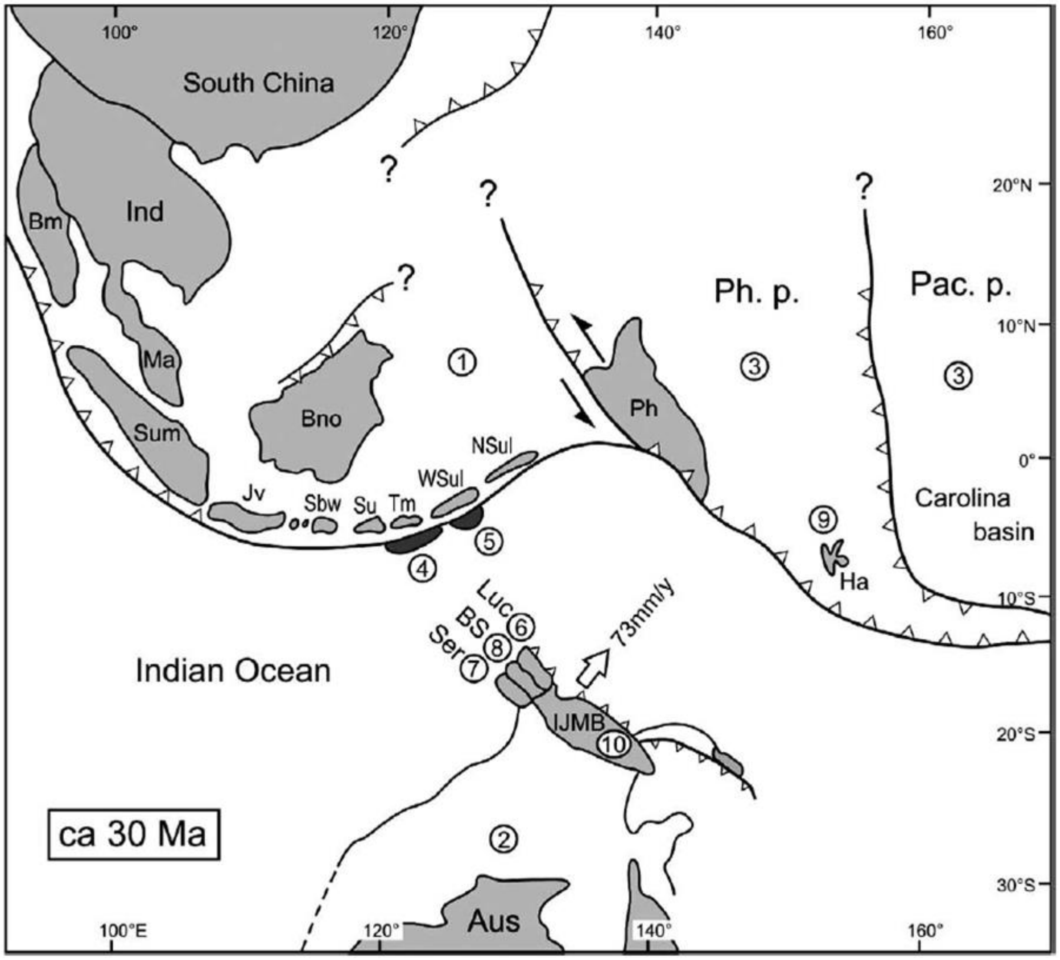



*Figure VII.4.24. Schematic plate reconstruction Early Oligocene, showing Banda Terrane of Timor (Tm) as part of the same Eocene arc system as Sumba (Su) and West and North Sulawesi (WSul, NSul) (Villeneuve et al. 2010). For more explanation see text.*

***Suggested reading- Timor*** <u>*(not a complete listing of all relevant papers)*</u>

Timor General, Tectonics: *Wanner 1913, Brouwer 1942, De Waard 1954-1957, Grunau 1957 Audley Charles 1965, 1968, 2011, Carter et al. 1976, Brunnschweiler 1978, Hamilton 1979, Barber 1981, Bowin et al. 1981, Charlton 1989, 2002, 2012, 2013, Audley Charles and Harris 1990, Sawyer et al. 1993, Reed et al. 1996, Milsom et al. 1996, 2001, Harahap 2003, Harris et al. 2000, Villeneuve et al. 1998, 2005, 2010, Harris 2006, 2011, Kaneko et al. 2007, Zobell 2007, Keep et al. 2009, Keep and Haig 2010, Haig 2012, Benincasa et al. 2012, Duffy et al. 2013, 2017, Tate 2014, Tate et al. 2014, 2015, 2017*

Permian- Mesozoic stratigraphy and faunas:
*many historic papers summarized in Charlton et al. (2002-Permian and 2009- Triassic), Kristan-Tollmann 1987, 1988, Bird et al. 1989, Bird and Cook 1991, Haig et al. 2007, 2010, 2014, 2017, Davydov et al. 2013, Haig and Bandini (2013).*

Banda terrane/ metamorphic complexes: *Molengraaff and Brouwer 1915, De Roever 1939, 1940, Tappenbeck 1940, De Waard 1954, 1957, Berry and Grady 1981, Earle 1981, 1983, 2008, Sopaheluwakan 1990,Sopaheluwakan et al. 1989, Audley Charles and Harris 1990, Harris 1991, 2006, 2011, Kaneko et al. 2007, Standley and Harris 2009*

Ophiolite complexes: *Harris 1989, 1992, Helmers et al. 1989, Sopaheluwakan 1990, Harris and Long 2000, Ishikawa et al. 2007, Kaneko et al. 2007*

Permian- Triassic sst provenance *Bird 1987, Bird and Cook 1991, Zobell 2007, Permana et al. 2013 Ely et al. 2014, Zimmermann and Hall 2014, 2016, Kwon et al. 2014, Spencer et al. 2016*

Kolbano fold-thrust belt (Australian margin accretionary prism along South coast): *Charlton 1987, 1989, Charlton and Suharsono 1990, Harsolumakso et al. 1995, Sani et al. 1995, Keep et al. 2005*

Post- orogenic Batu Putih/ Viqueque *Kenyon 1974, De Smet et al. 1990, Van Marle 1991, Haig and McCartain 2007, Roosmawati and Harris 2009, Haig 2012, Tate et al. 2014*

Roti: *Wichmann 1892, Brouwer 1922, Krumbeck 1922, Hasibuan 2007, Roosmawati and Harris 2009*

Leti and nearby islands *Molengraaff and Brouwer 1915, Brouwer 1921, Kaneko et al. 2007, Kadarusman et al. 2010, Van Gorsel 2012*

Savu *Verbeek 1908, Harris et al. 2009*

Post-orogenic uplift *Kuenen 1933, Chappell and Veeh 1978, Tjokrosapoetro 1978, Vita-Finzi and Hidayat 1991, Roosmawati and Harris 2009*

Timor paleomagnetic studies *Chamalaun 1977ab, Wensink and Hartosukohardjo 1987 1990ab, Panjaitan and Hutubessy 1997, 2004*

Oil and Gas *Sawyer 1993, Cockroft et al. 2005, Charlton and Gandara 2014, Charlton et al. 2017.*

### *VII.5. Indonesian Timor Sea, Sahul Platform*

This sub-chapter contains 78 references to the geology of the Timor Trough/ Timor Sea, which is in the domain of the NW Australian continental margin, south of the Timor- Tanimbar islands. It comprises the offshore South Timor accretionary prism (the onshore part is the Kolbano fold-thrust bust of South Timor), the Timor Trench and the distal NW Australian continental margin.

Parts of the Australian continental margin are within the Indonesian Economic Zone and in the Timor Leste-Australia ZOCA joint operating zone. Significant gas fields are present in Middle- Late Jurassic and basal Cretaceous reservoir sands (Abadi, Bayu-Undan, Sunrise, Troubadour fields), similar to the 'Plover play' elsewhere in the Bonaparte Basin of the Australian NW Shelf.

The downwards flexing of the downgoing Australian plate caused widespread Late Miocene- Pliocene) normal faulting (Harrowfield et al. 2003, Keep et al. 2007).

***Suggested reading- Timor Sea*** *(not a complete listing of all relevant papers)*

General, Tectonics: *Nagura et al. 2003, Seggie et al. 2003, Barber et al. 2004.*

# VII. REFERENCES BANDA SEA- LESSER SUNDA ISLANDS

## *VII.1. Banda Sea, East Banda Arc (incl. Tanimbar, Kai, Aru)*

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Achdan, A. & T. Turkandi (1982)- Geologic map of the Kai and Tayandu Islands, Maluku, Quadrangle 2810, 2910, scale 1:250,000. Geol. Res. Dev. Centre Indonesia, Bandung.
*(Second edition of 1982 map. ?Pre-Cambrian metamorphic rocks on Kur and Fadol Islands (biotite schist and granitic gneiss). Oldest rocks on Kai M Eocene Yamtimur Fm marls with planktonic foraminifera and 700m thick M-U Eocene Elat Fm limestones with Lacazinella wichmanni, Discocyclina, Nummulites, Alveolina; unconformably overlain by Late Oligocene Tamingil Lst and Oligocene- M Miocene Meduar Lst)*

Agustiyanto, D.A, M. Suparman, E. Partoyo & D. Sukarna (1994)- Geological map of the Moa, Damar and Bandanaira sheets, Maluku, Quadrangles 2607, 2707, 2708, scale 1:250.000. Geol. Res. Dev. Center, Bandung.
*(Geology of outer arc islands E of Timor: Kisar, Leti, Moa. Also active Banda Sea volcanoes Damar, Serua, Nila. South Leti with Permian sandstones; most of island Permian? metamorphics and ultrabasics)*

Agustiyanto, D.A, M. Suparman, E. Partoyo & D. Sukarna (1994)- Geological map of the Babar sheet, Southeast Maluku, scale 1:250.000. Geol. Res. Dev. Center, Bandung.
*(Most of Babar island Mio-Pliocene melange with blocks of ?Permian metamorphics, Permo-Triassic limestone, Jurassic shales, ophiolite (equivalent of Bobonaro Complex of Timor). Also minor Jurassic shales with ammonites and belemnites) (equivalent of Wailuli Fm of Timor). Sermata Island with ?Permian metamorphic rocks only)*

Bowin, C., G.M. Purdy, C. Johnston, G. Shor, L. Lawver, H.M.S. Hartono & P. Jezek (1980)- Arc-continent collision in Banda Sea region. American Assoc. Petrol. Geol. (AAPG) Bull. 64, p. 868-915.
*(Elaborate, key paper on E Indonesia tectonic history. The Banda Outer Arc of Timor, etc., contains fragments of Australian crust that probably rifted off in Jurassic time, collided with Sulawesi and split off and collided with Australian continental margin in last 3 My. Water depths of 5km and low heatflow values (1.1. HFU average) suggest ages of Banda Sea basins >60 Ma)*

Bowin, C. & C. Johnston (1981)- Arc-continent collision in Banda Sea region: reply. American Assoc. Petrol. Geol. (AAPG) Bull. 65, p. 867.
*(Response to Crostella (1981). Reiterate they regard all Timor rocks N of Kolbano thrust belt as originally part of pre-collision Banda Arc outer arc ridge)*

Brouwer, H.A. (1923)- Geologische onderzoekingen op de Tenimbar eilanden. Jaarboek Mijnwezen Nederlandsch Oost-Indie 50 (1921), Verhandelingen, p. 117-142.
*('Geological investigations on the Tanimbar Islands')*

Brouwer, H. (1923)- Bijdrage tot de geologie van Groot Kei en de kleine eilanden tussen Ceram en de Kei-eilanden. Jaarboek Mijnwezen Nederlandsch Oost-Indie 50 (1921), Verhandelingen 2, p. 143-168.
(6*Contribution to the geology of Kai Besar and small islands between Ceram and the Kai islands'*).

Brown, B.J., R.D. Muller, C. Gaina, H.I.M. Struckmeyer, H.M.J. Stagg & P.A. Symonds (2003)- Formation and evolution of Australian passive margins: implications for locating the boundary between continental and oceanic crust. Geol. Soc. America (GSA) Spec. Paper 372, p. 223-243.

Burhanuddin, S. (1994)- Geologie des bassins de la Mer de Banda (Indonesie). Ph.D. Thesis, Universite de Bretagne Occidentale, Brest, p. 1-197. *(Unpublished)*
*('Geology of the Banda Sea basins'. Grab samples from North Banda Basin seafloor suggest crust of NE Banda Basin is oceanic to transitional, and is a Late Miocene backarc basin dated as 7-10 Ma. Exact age of South Banda Basin remains unknown. Triassic platform carbonate and island arc volcanics sampled from the N part*

*of Banda Ridges. Volcanic arc remnants successively younger in southern direction. Banda Sea domain currently under compression)*

Burhanuddin, S., J.A. Malod, Ulva R., F. Hinschberger & Sultan (1999)- A new morphology and discovery of sea mount in the basin between Ambon and Buru islands: result of Image IV Expedition. In: I. Busono & H. Alam (eds.) Developments in Indonesian tectonics and structural geology, Proc. 28th Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, 1, p. 43-49.
*(New submarine volcano between Buru and Ambon in small 4000m deep E Buru basin. Seamount water depth range from -3600m- -200m. Dredge samples andesitic volcanics. Part of Pliocene- Quaternary Ambelau-Ambon volcanic arc of Honthaas et al. 1998)*

Burhanuddin, S., L. Sarmili, J.P. Rehault, J.A. Malod, R.C. Maury, H. Bellon, Y. Anantasena & Syaefuddin (1994)- Cekungan Laut Banda Utara (Indonesia Timur): suatu sketsa baru punggungan Tampomas dan batuan dasar samuderanya. Proc. 23rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, 1, p. 509-519.
*('The North Banda Sea Basin (E Indonesia): a new sketch of the Tampomas ridge and oceanic basement'. New bathymetric map confirms oceanic nature of North Banda Sea. Main morphological feature in N Banda Sea is NW-SE trending Tampomas Ridge, SW of Buru, interpreted as remnant strike-slip fault. Pillow lavas dredged from E flank indicate Late Miocene (9 ±3Ma) back-arc basin floor (cross-section looks like big rotated fault block with 2 sec of relief; JTvG))*

Burollet, P.F. & C.L. Salle (1985)- Tectonic significance of the Banda Sea. Proc. 14th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 2, p. 477-490.
*(Geological reconnaissances in Kai and Tanimbar Archipelagoes show E-W succession of: (1) folded Paleogene-Miocene of Australian borderland and accretionary wedges; (2) Neogene basins with overpressured shales and mud volcanoes; (3) melange olistolites or nappes overthrusting part of Neogene basins; (4) Pre-Tertiary basement terranes in W part. Banda Sea represents stretched internal sea)*

Bursch, J.G. (1947)- Mikropalaontologische Untersuchungen des Tertiars von Gross Kei (Molukken). Schweizerische Palaontol. Abhandl., 65, 3, p. 1-69.
*('Micropaleontological investigations of the Tertiary of Kai Besar'. Well-illustrated descriptions of limestones with Eocene (incl. Lacazina; should be Lacazinella; JTvG) and Early Miocene larger forams)*

Callomon, J.H. & G. Rose (2000)- Middle Jurassic ammonites from the island of Babar in the southern Moluccan forearc, Indonesia. Revue Paleobiologie, Geneve, Spec. Vol. 8, p. 53-64.
*(M Jurassic ammonites from outcrops on Babar. Fauna dominated by Satoceras satoi (=Macrocephalites group), a bioprovincially Austral sphaeroceratid genus, unknown in W Tethys, but characterizes Late Bajocian-Early Callovian, and known also from Sula and W Irian Jaya)*

Charlton, T.R., M.E.M. de Smet, H. Samodra & S.J. Kaye (1991)- The stratigraphic and structural evolution of the Tanimbar islands, eastern Indonesia. J. Southeast Asian Earth Sci. 6, 3-4, p. 343-358.
*(Stratigraphy of Tanimbar islands comparable to other Banda forearc islands like Timor, with Australian continental margin sequences added to forearc/collision complex by accretionary processes. Oldest rocks M-Late Triassic sandstones and E-M Jurassic grey shales, found only in ejecta of mud volcanoes. Oldest rocks in normal outcrop is Ungar Fm sandstone of probable Late Jurassic-E Cretaceous age. Major unconformity cut out Late Cretaceous-Paleogene. Miocene siliciclastic Tangustabun Fm and succeeding carbonate clastic Batimafudi Fm deformed in Pliocene, and unconformably overlain by E Pleistocene-Recent post-orogenic sediments. Structurally Tanimbar comparable to W Timor)*

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Charlton, T.R., S.J. Kaye, H. Samodra & Sardjono (1991)- Geology of the Kai Islands: implications for the evolution of the Aru Trough and Weber Basin, Banda Arc, Indonesia. Marine Petroleum Geol. 8, 1, p. 62-69.

*(E Kai islands dominated by normal faults, downthrowing to Aru Trough, with no sign of earlier compressive forearc deformation. Aru Trough extensional feature, in direct bathymetric continuity with compressional Timor-Tanimbar Trough. Banda Arc thrust front steps W-ward as result of extension in Aru Trough. Thrust front runs N-S through Kai group, separating inactive accretionary complex to W from active extension in E. Weber Basin results from E-W extension, with pre-existing thrust faults probably reactivated in extension as low-angle normal faults. Both compressional and extensional deformation since Pliocene)*

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*(Early Miocene reefal carbonate with Lepidocyclina (N) dredged from Rama Ridge, indicating Banda Sea ridges were present in Early Miocene, with major tectonic subsidence between M Miocene and E Pliocene. (Age assignment may be questioned; could also be Late Oligocene or Middle-Late Miocene; JTvG))*

Cornee, J.J., M. Villeneuve, M. Ferrandini, F. Hinschberger et al. (2002)- Oligocene reefal deposits in the Pisang Ridge and the origin of the Lucipara Block (Banda Sea, Eastern Indonesia). Geo-Mar Letters 22, p. 66-74.
*(M-L Oligocene reefal deposits with Pararotalia mecatepecensis and pelagic E Pliocene muds dredged from Pisang Ridge in Banda Sea, confirming it is part of continental/ continental arc Lucipara Block (incl. Tukang Besi, Lucipara and Rama ridges). Lucipara Block drifted from N Irian Jaya in M Miocene and collided with Kolonodale Block in Late Miocene. A late Early Oligocene volcanic arc developed in Weber Trough area, then uplifted to shallow-water position at Early-Late Oligocene boundary in Pisang Ridge. Late Oligocene- E Miocene metamorphism subsequently developed, prior to deposition of E Miocene coral reefs in Rama Ridge. Locally, Late Miocene metamorphism identified in Lucipara Ridge, prior to latest Miocene-Pliocene drowning and splitting of Lucipara Block into several small blocks throughout Banda Sea region)*

Cornee, J., M. Villeneuve, J.P. Rehault, J. Malod, J. Butterlin, P. Saint-Marc, G. Tronchetti et al. (1997)- Stratigraphic succession of the Australian margin between Kai and Aru islands (Arafura Sea, eastern Indonesia), interpreted from Banda Sea II cruise dredge samples. J. Asian Earth Sci. 15, 4-5, p. 423-434.
*(Dredges in Aru Trough E of Kai Besar recovered fairly complete Australian margin section, 3000-4000m thick, from ?Carboniferous- Permian to Jurassic- Miocene. Displaced Eocene carbonate with Lacazinella)*

Cox, L.R. (1924)- Some Late Kainozoic pelecypoda from the Aru Islands. Geol. Magazine 61, 2, p. 56-63.
*(Brief descriptions of ?Mio-Pliocene pelecypods, incl. Ostrea, Pecten spp., Clementia, etc.)*

Currie, E.D. (1924)- On fossil Echinoidea from the Aru Islands. Geol. Magazine 61, 2, p. 63-72.
*(Brief descriptions of small collection of ?Mio-Pliocene echinoids from limestones and sandy limestones of Aru Islands. Believed to be of probable Pliocene age)*

De Marez Oyens, F.A.H.W. (1913)- De geologie van het eiland Babber. Handelingen XIVe Nederlandsch Natuur- Geneeskundig Congres, Delft 1913, p. 463-468.
*(online, read only at: http://babel.hathitrust.org/cgi/pt?id=uc1.b3093404;view=1up;seq=999)*
*('The geology of the island Babar'. Rocks-fossils similar to Timor: Permian pink crinoidal limestone and marl (100m tall 'fatu' in middle course of Jer Lawi river, believed to be part of nappe over Triassic-Jurassic sediments), Triassic sandstones-claystones with Daonella, Jurassic marls rich in ammonites and molluscs (Arietes, Phylloceras, Stephanoceras, Lytoceras, Posidonia; Liassic- Callovian; Wanner 1931). Sandstones with plant remains, mica-bearing and probably Triassic. Associated with volcanics (diabase). Complex thrust structural style similar to nearby Timor. Left bank of Jer Lawang river composed of serpentinized peridotite. Distinct young coral limestone terraces at 150, 210, 260, 550, 615 and 650m, highest in NE. No figures)*

De Smet, M.E.M., A.R. Fortuin, S. Tjokrosapoetro & J.E. van Hinte (1989)- Late Cenozoic vertical movements of non-volcanic islands in the Banda Arc area. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, 2-3, p. 263-275.
*(Late Cenozoic sections on non-volcanic outer arc islands Timor, Buton, Buru, Seram and Kai suggest vertical movements were intermittent and differed widely in arc. Short periods of uplift alternated with longer periods of tectonic rest or subsidence. Deformation has character of tilting or doming of whole islands or parts of islands)*

De Smet, M.E.M., T.R. Charlton, S.J. Kaye, S.R. Troelstra & L.J. Van Marle (1989)- Late Cenozoic history of the island of Yamdena, Tanimbar archipelago, eastern Indonesia. In: L.J. van Marle (1989) Benthic foraminifera from the Banda Arc region, Indonesia, and their paleobathymetric significance for geologic interpretations of the Late Cenozoic sedimentary record, Free University Press, Amsterdam, p. 145-162.
*(Yamdena mostly folded Miocene slope sediments, with large amounts of reworked Late Cretaceous, Paleogene and Early Miocene fauna. Angular unconformity between Late Miocene and Pleistocene records Pliocene folding and uplift event. Mud volcanoes along Yamdena Strait common ferro-manganese nodules, ?Triassic sst, ?Cretaceous calcilutite, serpentinite, metabasites)*

Douville, H. (1908)- Sur les Lepidocyclines dôun calcaire de lôîle Grand-Kei. In: R.D.M. Verbeek, Molukkenverslag. Geologische verkenningstochten in het oostelijke gedeelte van den Nederlandsch Oostindische Archipel. Jaarboek Mijnwezen Nederlandsch Oost-Indie 37 (1908), Wetenschappelijk Gedeelte, p. 690-693.
*('On the Lepidocyclinas from a limestone from Kai Besar island'. Description of Aquitanian Lepidocyclina (Eulepidina) from Tamangil, Kai Besar, collected by Verbeek)*

Dwiyanto, B. (1985)- Marine geology and geophysics of the Northern Banda Sea. M.Sc. Thesis University College London, p. 1-94. *(Unpublished)*

Fitriannur, M.R. (2015)- New insights into the development of the Timor- Tanimbar Trough based on 3D seismic data. Proc. SE Asia Petroleum Expl. Soc. (SEAPEX) Conf., Singapore 2015, 4.3, 6p. *(Extended Abstract)*
*(Seismic interpretation of BP West Aru I-II PSC blocks, NE of Tanimbar. Australia- Indonesia collision in Miocene heralded onset of Neogene transpressions, local uplift and flexural extension. Sedimentary cover forming accretionary wedge uplifted and exposed in Timor during collision and fore-deep known as Timor-Tanimbar Trough developed)*

Fitriannur, M.R. (2017)- A future play in a frontier area: deltaic systems of the Late Cretaceous play in the West Aru area at the Indonesia-Australia continental margin. Proc. 41st Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA17-106-G, 15p.
*(Late Cretaceous (Campanian-Maastrichtian) progradational package in Barakan-Tanimbar (W Aru) margin. Late Cretaceous ('Ekmai') delta top sands without hydrocarbons penetrated by Barakan-1 and Koba-1 wells. Potential new hydrocarbon play)*

Fujimoto, M., Y. Guo, A. Fatwa & Y. Sasaki (2014)- Challenges of sub-thrust imaging using broadband three-dimensional seismic data: a case study in the outer Banda Arc, Indonesia. Proc. 38th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA14-G-122, 15p.
*(Seismic imaging and processing of Timor Trough- accretionary prism S of Babar; little geology interpretation)*

Fujimoto, M., Y. Sasaki, Y. Guo & M. Ohara (2014)- Broadband seismic imaging of thrust belt along the Outer Banda Arc in Indonesia. Proc. 77th EAGE Conf. Exhib., Madrid, WS04-C02, 5p.
*(Seismic techniques in Babar Selaru PSC block SW of Yamdena (Tanimbar))*

Granath, J.W., J.M. Christ, P.A. Emmet & M.G. Dinkelman (2010)- Insights into the tectonics of Eastern Indonesia from ArafuraSPAN, a long-offset long-record 2D seismic reflection dataset. Proc. 34th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA10-G-063, 9p.

*(Examples of deep seismic images in Seram- Aru Trough- Arafura shelf- Bonaparte Basin. Seram thrust believed to initiate with obduction of ophiolites in hinterland at ~9 Ma and frontal deformation continues today with interaction of thrust front with young Tarera-Aiduna left-lateral fault system. Seram thrust wedge detached above Cretaceous. Timing of extension in Aru Trough Late Pliocene-Quaternary. Weber Deep large normal offset on edge of shelf cross-cutting Banda accretionary prism, with young oceanic crust in deepest parts)*

Gregory, J.W. (1923)- The Banda Arc: its structure and geographical relations. The Geographical J. 62, p. 20-30.
*(Early overview of geology of Banda island, including description of Kai Besar, Aru Islands)*

Gregory, J.W., L.R. Cox & E.D. Currie (1924)- The geology of the Aru Islands. Geol. Magazine 61, p. 52-72.
*(Aru Archipelago group of some eighty low islands, probably extension of SW New Guinea. According to Verbeek (1908) consist of almost horizontal limestone plateau, broken by uplift into more than 80 pieces. Probably with core of Mio-Pliocene? limestone with quartz sand)*

Hadiwisastra, S. (1995)- Revisi umur Formasi Batilembuti, Tanimbar, Maluku: implikasi umur dan biostratigrafi nannoplangton. J. Riset Geologi Pertambangan (LIPI) 1, 1, p. 12-19.
*(online at: http://pustaka.geotek.lipi.go.id/wp-content/uploads/2016/02/Riset-Vol.1-No.1-1995-.pdf)*
*('Revision of the age of the Batilembuti Formation, Tanimbar, Moluccas: implications for age and nannoplankton biostratigraphy'. Upper Tertiary calcarenites-shales of Batilembuti Fm of Yamdena Island with E Pliocene NN14-NN15 nannofossils)*

Hantoro, W.S., E. Sibowo, M.S. Hadiwisastra and S. Shofiyah (1993)- Upper Pleistocene vertical tectonic activity of Tanimbar Island, South East Maluku: coral reef study. In: Proc. Seminar Role and Quaternary geology development in Indonesia, Inst. Tekn. Bandung (ITB), p.

Harris, R.A. (1992)- Peri-collisional extension and the formation of Oman-type ophiolites in the Banda Arc and Brooks range. In: L.M. Parsons et al. (eds.) Ophiolites and their modern oceanic analogues. Geol. Soc. London, Spec. Publ. 60, p. 301-325.
*(Banda orogen ophiolites internal structure shows extensional strains. High-T metamorphic sole with continental protoliths locally preserved. Savu and Weber basins provided modern analogues of peri-collional extension processe, which open small ocean basins that may be obducted shortly after they form)*

Hartono, H.M.S. (1990)- Late Cenozoic tectonic development of the Southeast Asian continental margin in the Banda Sea area. Tectonophysics 181, p. 267-276.
*(Assumes Banda Sea underlain by old oceanic crust, compatible with low heat flow, and allochthonous units on Timor are of Australian origin. Data from N Banda microcontinents, dredged samples from Banda/ Lucipara ridges, etc., support interpretation of microcontinents translated left-laterally westward from Irian Jaya)*

Hartono, H.M.S. (1990)- Terbentuknya busur volkanik Banda. Geologi Indonesia 13, 2, p. 105-112.
*('Formation of the Banda volcanic arc')*

Hartono, H.M.S. (1990)- Origin and emplacement of allochthonous terranes in the Banda outer arc. Bull. Marine Geol. Inst. 5, 1, p. 24-33.

Hartono, H.M.S. (1996)- Initial development of the Banda volcanic arc. In: G.P. & A.C. Salisbury (eds.) Trans. 5th Circum-Pacific Energy and Mineral Resources Conference, Honolulu 1990, Gulf Publishing, Houston, p. 155-161.
*(Oldest age of E Sunda magmatic arc is 19 ± 2 Ma, (E Miocene) from Flores (FT dating of zircons of andesites by Nishimura et al. 1979). Minimum age for initiation of Banda Arc volcanism is age of Metan Volcanics of Timor, Eocene, 39-56 Ma (but questionable if these are part of Banda Arc?; most other ages latest Miocene and younger; JTvG))*

Hartono, H.M.S., C.S. Hutchison, S. Tjokrosapoetro & B. Dwiyanto (1991)- Studies in East Asian Tectonics and Resources (SEATAR) Crustal Transect 4- Banda Sea. Committee for Co-ordination of Joint Prospecting for Mineral Resources in Asian Offshore Areas (CCOP) and IOC, 30p.

Hartono, H.M.S. & M. Istidjab (1976)- Preliminary report: geochemical analyses of volcanic rocks of the Banda island arc volcanos and its regional implications. Proc. 13th Sess. Sess. Comm. Co-ord. Joint Prospecting Mineral Resources in Asian Offshore Areas (CCOP), Kuala Lumpur, p. 345-364.

Heim, A. (1939)- Geological reconnaissance report on the Tanimbar, Kai and Aroe islands, N.E.I.. Geol. Survey Indonesia, Bandung, Open File Rept. H39-01, p. 1-75. *(Unpublished; original probably Stanvac report)*

Heim, A. (1942)- Lebende Diapire in den sudostlichen Molukken. Eclogae Geol. Helvetiae 35, 2, p. 225-234.
*(online at: http://retro.seals.ch/cntmng?type=pdf&rid=egh-001:1942:35::400&subp=hires)*
*'Active diapirs/ mud volcanoes in the SE Moluccas'. Tanimbar and Kei islands are active diapirs. On mud volcanoes on Tanimbar and Kai islands. About 30 young diapyrs identified on Tanimbar islands. With brief descriptions of geologic setting)*

Hinschberger, F., J.A. Malod, J. Dyment, C. Honthaas, J.P. Rehault & S. Burhanuddin (2001)- Magnetic lineations constraints for the back-arc opening of the Late Neogene South Banda Basin (Eastern Indonesia). Tectonophysics 333, p. 47-59.
*(New analysis of magnetic lineations E part of S Banda (Damar) Basin infers opening in Late Miocene- E Pliocene, 6.5- 3.5 Ma. Cessation of spreading probably arc-continent collision at ~3 Ma. Damar basin began as intra-arc basin, separating Banda arc in S from incipient Lucipara arc to N)*

Hinschberger, F., J.A. Malod, J.P. Rehault, J. Dyment, C. Honthaas, M. Villeneuve & S. Burhanudin (2000)- Origine et evolution du bassin Nord-Banda (Indonesie): apport des donnees magnetiques. Comptes Rendus Academie Sciences, Paris, Earth Planetary Sci. 331, p. 507-514.
*(N Banda Sea Basin opened in Late Miocene in back arc setting. Magnetic, bathymetric data and radiometric dates from dredges of its basement used to depict basin evolution. Sea floor spreading occurred from 12.5- 7.15 Ma directed by three large NW-SE transform faults, West Buru, Tampomas and Hamilton fracture zones)*

Hinschberger, F., J.A. Malod, J.P. Rehault & S. Burhanuddin (2003)- Apport de la bathymetrie et de la geomorphologie a la geodynamique des mers de lõEst-Indonesien. Bull. Soc. Geologique France 174, 6, p. 545-560.
*(N and S Banda Seas and Weber Trough formed in Neogene by back-arc spreading and slab roll-back. Magnetic anomalies define ages of 12.5- 7.1 Ma for N Banda Basin and 6.5- 3.5 Ma for S Banda Basin. Weber Trough >7300m deep, remains enigmatic. N Banda Basin SE rifted margin morphology preserved along Sinta Ridges. Basin presently in compression and crust subducted W under E Sulawesi. N border N Banda Basin reactivated into sinistral transcurrent motion in S Sula Fracture Zone. S Banda Sea two parts (Wetar, Damar), separated by NNW-SSE volcanic Gunung Api Ridge, interpreted as sinistral strike-slip zone. Dredging of Triassic limestones and metamorphic basement suggests Sinta and Rama Ridges are continental block fragments. Banda Ridges fringed to S by Nieuwerkerk- Emperor of China- Lucipara volcanic chains with andesites and basalts of 8- 3.5 Ma. New volcanic seamount SE of Buru and volcano on Pisang Ridge with sub-aerial volcanic morphology and subsidence evidenced by reefal limestones on flank, now at ~3000m depth. Basement depths ~1000m below age-depth curve for back-arc basins and ~2000m below curve for oceanic crust. Except for one M Eocene (46-Ma) N-MORB type basalt (from ophiolitic complex?), Basalts-andesites dredged from Banda Sea ridges of Neogene ages (Tukang Besi ~10 Ma, Nieuwerkerk- Emperor of China 8-7 Ma, Lucipara 7-3 Ma). Lucipara- Nieuwerkerk- Emperor of China and Wetar segment of Banda Arc were part of single volcanic arc at 8-7 Ma, with subduction of Indian Ocean continental crust below continental blocks of Australian origin, followed by back-arc rifting/ spreading. End of magmatic activity at 3 Ma result of collision of Timor with Wetar segment of Sunda arc)*

Honthaas, C., J.P. Rehault, R.C. Maury, H. Bellon, C. Hemond, J.A. Malod, J.J. Cornee, M. Villeneuve et al. (1998)- A Neogene back-arc origin for the Banda Sea basins: geochemical and geochronological constraints from the Banda ridges (East Indonesia). Tectonophysics 298, p. 297-317.
*(Except for one M Eocene (46-Ma) N-MORB type basalt (thought to belong to ophiolitic complex), volcanics dredged from Banda Sea ridges all Neogene age: ~10 Ma for Tukang Besi back-arc basalts, 8-7 Ma for Nieuwerkerk–Emperor of China calc-alkaline andesites and 7-3 Ma for Lucipara OIB-type transitional basalts and cordierite-bearing andesites. Isotope signatures suggest assimilation of continental crust. Lucipara-Nieuwerkerk- Emperor of China Ridges and Wetar segment of Banda Arc parts of single volcanic arc at 8-7 Ma, with subduction of Indian Ocean continental crust below continental blocks of Australian origin, followed by back-arc rifting/ spreading. End of magmatic activity on both volcanic segments at 3 Ma thought to result from collision of Timor with Wetar segment of Sunda arc.*

Honthaas, C., M. Villeneuve, J.P. Rehault, H. Bellon, J.J. Cornee et al. (1997)- Kur island: geology of the Eastern flank of the Weber trough (Eastern Indonesia). Comptes Rendus Academie Sciences, Paris 325, 11, p. 883-890.
*(Data from Kur Island and nearby dredgings show unknown events on E margin of Weber basin: (1) E Oligocene magmatic arc; (2) E Miocene metamorphism event between 24-17 Ma; and (3) E Pliocene deformation, related to Australian plate- Banda arc collision. Weber basin was created in Pleistocene with uplift of E margin)*

Huang, Y.S., T.Q. Lee, S.K. Hsu & T.N. Yang (2009)- Paleomagnetic field variation with strong negative inclination during the Brunhes chron at the Banda Sea, equatorial southwestern Pacific. Physics Earth Planetary Interiors 173, p. 162-170.
*(Analysis of paleomagnetic variation of last 820 kyr in core from Banda Sea)*

Hutchison, C.S. (1977)- Banda Sea volcanic arc: some comments on the Rb, Sr and cordierite contents. Warta Geologi (Newsl. Geol. Soc. Malaysia) 3, 2, p. 27-35.
*(online at: https://gsmpubl.files.wordpress.com/2014/09/ngsm1977002.pdf)*
*(Unusually high Rb/Sr ratios in volcanic rocks and cordierite in rhyolite at Tanjong Illipoi (Wetar) indicate strong continental crustal influence in source of volcanic rocks. Romang also with higher Rb/Sr ratios than active volcanic arc. Wetar different from other islands of Banda Arc because of abundant light grey rhyolite and dacite. This extinct, eroded and uplifted portion of Banda volcanic arc N of Timor affected by subducted Australian continental Plate. Cordierite in rocks of Ambon also imply continental crustal basement in N part of Banda Arc)*

Hutchison, C.S. & P.A. Jezek (1978)- Banda Arc of eastern Indonesia: petrography, mineralogy and chemistry of the volcanic rocks. In: P. Nutalya (ed.) Proc. 3rd Regional Conf. Geology and Mineral Resources of SE Asia (GEOSEA III), Bangkok, Asian Inst. Techn., p. 607-619.
*(Four distinct volcanic rock series in Neogene Banda arc: High-K alkaline andesites (Gunung Api, Damar, etc.), calcalkaline andesites (Serua, Manuk), tholeitic basalts (Ambon, Banda Neira, Kelang), cordierite-bearing dacites and rhyolites (Ambon))*

Irwansyah & Panuju (2012)- Integrated microfossil analysis of Pre-Tertiary sediments in the Bubuan Island, Tanimbar, Maluku. Proc. 41st Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta, 2012-SS-26, 1p. *(Abstract only)*
*(In Indonesian. Biostratigraphy analysis of outcrop samples of Pre-Tertiary sediments from mud volcano deposits on Bubuan island, Tanimbar group, shows Late Triassic (with early nannofossils Obliquipithonella prasina and Cassianospica), Jurassic and Late Cretaceous ages)*

Jacobson, R.S., L.A. Lawver, K. Becker & G.G. Shor (1977)- Anomalously uniform heat flow in the Banda Sea. EOS, Trans. American Geophys. Union (AGU) 58, p. 515. *(Abstract)*

Jacobson, R.S., G.G. Shor, R.M. Kieckhefer & G.M. Purdy (1979)- Seismic refraction and reflection studies in the Timor-Aru Trough system and Australian continental shelf. In: J.S. Watkins et al. (eds.) Geological and

geophysical investigations of continental margins, American Assoc. Petrol. Geol. (AAPG), Mem. 29, p. 209-222.
*(Timor-Tanimbar-Aru Trough system of Banda Sea not deeper than 3.6 km, and is E extension of Java Trench. Seismic profiles strongly suggest it is surface trace of subduction zone, with downwarping of continental crust into subduction zone)*

Jasin, Basir & N. Haile (1996)- Uppermost Jurassic- Lower Cretaceous radiolarian chert from the Tanimbar Islands (Banda Arc), Indonesia. J. Southeast Asian Earth Sci. 14, p. 91-100.
*(Two radiolarian assemblages from deep marine cherts on Ungar Island: (1) Upper Tithonian- Berriasian Archaeodictyomitra apiara Assemblage, with mixture of Tethyan and non-Tethyan species (incl. Archaeodictyomitra brouweri A Tan, Pantanellium lanceola, Cyrtocapsa, etc.)) and (2) Late Valanginian-Barremian (Cerops septemporatus assemblage) (similar to Argo Abyssal Plain assemblages decribed by Baumgartner 1993?; JTvG))*

Jongsma, D., T. Sumantri, A.J. Barber, W. Huson, J.M. Woodside & S. Suparka (1989)- Bathymetry and geophysics of the Snellius-II triple junction and tentative seismic stratigraphy and neotectonics of the northern Aru Trough. In: Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, 2-3, p. 231-250.

Jongsma, D., J.M. Woodside, W. Huson, S. Suparka & D. Kadarisman (1989)- Geophysics and tentative late Cenozoic seismic stratigraphy of the Banda Arc-Australian continent collision zone along three transects. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, 2-3, p. 205-229.
*(Three marine geophysical regional transects across Banda Arc- Australian continent collision zone, East of Timor, North of Tanimbar and SE of Seram)*

Karta, K. (1985)- Etude geodynamique de la mer de Banda (Indonesie) par interpretation des donnees magnetiques et gravimetriques. These Docteur-Ingenieur, Universite Bretagne Occidentale, p. *(Unpublished)*
*('Study of geodynamics of Banda Sea by interpretation of magnetic and gravity data')*

Koesoemadinata, R.P., Humbarsono & B. Riyanto (1983)- Sekitar munculnya pulau baru di Kepulauan Kai, busur kepulauan Banda. Proc. 12th Ann. Conv. Indon. Assoc. Geol. (IAGI), p. 53-59.
*('The emergence of a new island in the Kai islands', Banda arc')*

Lapouille, A., H. Haryono, M. La Rue, S. Pramumijoyo & M. Lardy (1985)- Age and origin of the seafloor of the Banda Sea (eastern Indonesia). Oceanologica Acta 8, 4, p. 379-389.
*(Magnetic anomalies of Banda Sea oceanic crust tied to Cretaceous, suggesting plate is piece of trapped Indian Ocean floor crust. (More recent work suggests Miocene age of oceanic crust; JTvG))*

Lee, C.S. & R. McCabe (1986)- The Banda-Celebes-Sulu Basin: a trapped piece of Cretaceous-Eocene oceanic crust? Nature 322, 6074, p. 51-54.
*(Banda, Celebes and Sulu basins poorly understood marginal seas. Banda basin possibly trapped oceanic basin once continuous with Late Jurassic Argo abyssal plain. Celebes and Sulu basins also underlain by oceanic crust. Celebes and Sulu Seas may have been continuous with Banda basin. (NB: most of suggested Cretaceous ages proven wrong by subsequent ODP wells, dredge results, etc.; Hutchison 1992, etc.))*

Leybourne, B.A. & N.B. Adams (1999)- Modeling mantle dynamics in the Banda Sea triple junction:exploring a possible link to El Nino Southern Oscillation. OCEANS 99 MTS/IEEE. Riding the Crest into the 21st Century 2, 2, p. 955-966.
*(Evaluation of mantle depths from gravity and seismic studies indicates upwelling of mantle from ~30-40 km under continental shelf of Australia to 21 km in Banda Arc. From here mantle rises to 14 km in Weber Deep and reaches depth of 7 km in N Banda Sea. Seismic epicenter data delineate spatial boundaries of flow regimes and define magmatic migration routes. Epicenter magnitudes are visualized in 3 dimensions by color-coding. Animation portrays upwelling and divergence of mantle flow structures (geostreams) underlying tectonic trends of region and resulting counterflow in volcanic arcs based on 'surge tectonic' hypothesis)*

Linthout, K., H. Helmers & J. Sopaheluwakan (1997)- Late Miocene obduction and microplate migration around the southern Banda Sea and the closure of the Indonesian Seaway. Tectonophysics 281, 1-2, p. 17-30.
*(Ultramafites on Timor N coast, on smaller islands in S Outer Banda Arc and on SW Seram are fragments of M Miocene oceanic lithosphere, obducted in Late Miocene. Cool sole rock metamorphosed by overriding oceanic lithosphere. Kaibobo lherzolitic complex (SW Seram) obduction started ~9.5 Ma, emplacement completed at ~8 Ma and fast vertical movements continued until ~7 Ma. Obduction of lherzolite on N Timor also at 8 Ma and cooling to 300° C at 5.5 Ma. Oceanic lithosphere formed in E Miocene (~6 Ma prior to start of obduction). Obducted ultramafites formed close to passive margin by slow spreading in short-lived interarc Timor Plate (16-9.5 Ma). Model good agreement with 9.9-7.5 Ma history of shallowing and closure of Indonesian Seaway, as inferred from biogeographic patterns and thermal evolution of Miocene equatorial Pacific waters)*

Martin, K. (1890)- Die Kei-Inseln und ihr Verhaltniss zur Australisch-Asiatischen Grenzlinie, zugleich ein Beitrag zur Geologie von Timor und Celebes. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap (2), 7, p. 241-280.
*('The Kai islands and their relevance to the Australian-Asian boundary'. Study of rocks from Kai islands collected by Wertheim in 1889. Miocene larger foram limestone from Kai Besar up to 2000' elevation with large orbitoids. Also Eocene limestones with alveolinid (re-identified as Lacazinella by Verbeek 1908). No figures; not overly useful)*

McCaffrey, R. (1989)- Seismological constraints and speculations on Banda Arc tectonics. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, 2-3, p. 141-152.
*(Australian continent- Banda Arc collision shortens overriding Indonesian plate in N-S direction and elongates it in E-W direction by combination strike-slip and thrust faulting. Two plates subduct beneath Banda Arc: (1) Australia-Indian Ocean plate N-ward beneath Java Trench-Timor Trough-Aru Trough, and (2) Birds Head SW-ward beneath Seram Trough. Slab of Indian Ocean plate forms W-ward plunging synform beneath Banda Basin. Birds Head lithosphere subducted under Seram Trough down to 300 km depth. At surface decoupling between Australian and Birds Head by left-lateral strike slip at Tarera-Aiduna fault zone and convergence in New Guinea foldbelt. Seismic quiescence 50-380 km beneath Timor and inactive volcanic arc, but S-wave propagation suggests continuous lithospheric slab)*

McCaffrey, R. & G.A. Abers (1991)- Orogeny in arc-continent collision: the Banda arc and western New Guinea. Geology 19, p. 563-566.
*(Shallow earthquakes show crustal deformation in Banda Arc and W New Guinea dominated by thrust and strike-slip faulting. Tarera- Aiduna left-lateral strike slip zone (~20mm/year) and New Guinea thrust belt accommodate WSW motion of Birds Head with respect to Australia. Left-lateral Sorong- Yapen fault zone accommodates main part of Australia -Pacific relative motion (~80mm/year). Possible E-ward extrusion of Banda Arc may be 40mm/yr. Seismic zone of Seram subduction zone beneath Seram at least 600km long)*

Merton, H. (1910)- Forschungsreise in den sudostlichen Molukken (Aru- und Kei-Inseln) im Auftrage der Senckenbergischen Naturforschenden Gesellschaft. Abhandl. Senckenberg Naturforsch. Gesellschaft, Frankfurt, p. 1-208.
*('Expedition to the SE Moluccas (Aru and Kai islands) on behalf of the Senckenberg Natural History Society'. On natural history, geography and geology of Aru- Kai islands from 1907-1908 expedition)*

Michael-Leiba, M.O. (1984)- The Banda Sea earthquake of 24 November 1983: evidence for intermediate depth thrust faulting in the Benioff zone. Physics Earth Planetary Interiors 36, 2, p. 95-98.
*(24 November 1983, major earthquake at 180 km depth beneath Banda Sea. Shear failure took place within NNW dipping Benioff zone by thrust faulting along S-dipping plane. Focal mechanism solution does not conform to usual pattern and could not caused by down-dip tension or compression within sinking slab)*

Milsom, J. (1999)- The Banda Sea: continental collision at the eastern end of Tethys. In: G.H. Teh (ed.) Proc. 9th Reg. Congress Geology, Mineral and Energy Resources of SE Asia (GEOSEA ô98), Kuala Lumpur 1998, Bull. Geol. Soc. Malaysia 43, p. 41-47.

*(online at: https://gsmpubl.files.wordpress.com/2014/09/bgsm1999005.pdf)*
*(Banda Sea is Late Neogene post-collisional collapse basin, similar to Tyrrhenean and Alboran Seas in Mediterranean (arcuate orogenic belts with outward-directed thrusts enclosing rapidly expanding extensional regimes). New oceanic basins produced by rollback have depths typical of much older crust. Timor and Seram may have been part of M Miocene Sulawesi orogen prior to Banda Sea extensional collapse (This and Milsom 2000, 2001 papers are first to propose Banda Sea creation by Late Neogene slab rollback extension, before similar models were proposed in Hinschberger et al. (2003, 2005) and Spakman and Hall (2010))*

Milsom, J. (2005)- The Vrancea seismic zone and its analogue in the Banda Arc, Eastern Indonesia. Tectonophysics 410, p. 325-336.
*(Comparison of Carpathian orogenic belt with Banda Arc. Intermediate depth earthquakes define subducted slab that dips N, S and W beneath Banda Sea, a configuration explained as consequence of rapid expansion of Banda Sea during roll-back subduction)*

Milsom, J., M.G. Audley-Charles, A.J. Barber & D.J. Carter (1983)- Geological-geophysical paradoxes of the Eastern Indonesian collision zone. In: T.W.C. Hilde & S. Uyeda (eds.) Geodynamics of the Western Pacific-Indonesian region, American Geophys. Union and Geol. Soc. America (GSA) Geodyn. Ser. 11, p. 401-412.

Milsom, J., S. Kaye & Sardjono (1996)- Extension, collision and curvature in the eastern Banda arc. In: R. Hall & D. Blundell (eds.) Tectonic Evolution of Southeast Asia, Geol. Soc., London, Spec. Publ. 106, p. 85-94.
*(Discussion of compressional deformation front between Kai Besar- Kai Kecil islands. Eocene- Pleistocene sediments on Kai Besar never deeply buried or imbricated but experienced large-scale extensional faulting. Associated gravity high requires upfaulting of accretionary complex, attenuated Australian continental crust on which it rests and underlying mantle at W side of Aru Trough. Deformation front in Aru Trough is SE of Kai Islands but entirely to W further N. Instead of continuing NNE to offset near New Guinea coast, collision trace passes through strait between Kai Besar and other islands, and mimics smooth curve of gravity contours, rather than discontinuities of bathymetric troughs. Continuity in deep and shallow structures is evidence for existence of outer arc as single geological unit prior to present phase of arc-continent collision)*

Milsom, J., Sardjono & A. Susilo (2001)- Short-wavelength, high-amplitude gravity anomalies around the Banda Sea, and the collapse of the Sulawesi Orogen. Tectonophysics 333, p. 61-74.
*(Ophiolitic rocks around Banda Sea commonly associated with strong gravity anomalies and steep gradients, but relationships not always straightforward. Bouguer gravity levels and gradients over E Sulawesi ophiolite generally low. In Banda Arc, most positive ophiolite anomalies on steep regional gradient but in W Seram distinct spatial separation. On Buru >10 mGal/km gradient suggests dense rocks near surface, despite absence of ophiolites in outcrop. Gravity variations and ophiolite distribution around Banda Sea compatible with extension in Sulawesi following Oligo-Miocene collision with Australian-derived microcontinent. Association of ultramafic rocks and local strong regional gravity gradient is largely coincidental)*

Nasution, A., I. Takashima, H. Takahashi, K. Matsuda, H. Akasako, H. Muraoka, D. Kusnadi, F. Nanlohi & M. Futagoishi (2000)- The geology and geochemistry of Mataloko-Nage-Bobo geothermal areas, Central Flores, Indonesia. In: Proc. World Geothermal Congress, Kyushu- Tohoku 2000, p. 2165-2170.
*(online at: www.geothermal-energy.org/pdf/IGAstandard/WGC/2000/R0766.PDF)*
*(Geothermal features of Bajawa prospect on Flores associated with NW-SE, SW-NE and N-S trending fracture systems in Quaternary andesitic-basaltic volcanics)*

Norvick, M.S. (1979)- The tectonic history of the Banda Arcs, eastern Indonesia: a review. J. Geol. Soc. London 136, p. 519-527.
*(Banda Sea is small marginal oceanic plate, formed in early Tertiary. Complexity result of Late Miocene- E Pliocene collision and obduction of Banda island arc over leading edge of Australian-lrian continental plate. Transcurrent faulting on N limb of collision zone may have accentuated curvature of arc. Subduction and volcanism ceased after collision in Timor and Seram sectors, but still active at E extremity of arc)*

Noya, Y., O. Effendhy, H.Z. Abidin & Y. Pakaya (2009)- Geological background and economic prospect of the Soripesa deposit, eastern Sumbawa. Proc. 38th IAGI Ann. Conv. Exh. Indon. Assoc. Geol. (IAGI), Semarang, PIT IAGI 2009-002, p. 1-9.
*(Sumbawa island part of Cenozoic Banda Arc. Regional fault structures trend NW-SE and NE-SW. E Sumbawa underlain by Lower Miocene andesitic- basaltic lavas with intercalations of tuff and limestone. Soripesa epithermal-porphyry type gold-copper prospect hosted in Miocene volcanic sequences)*

Ogierman, J. (2016)- Discovery, geology and origin of the Lakuwahi volcanogenic Au-Ag-Pb-Zn deposit, Romang Island, eastern Indonesia. Proc. 8th Ann. Conv. Indonesian Soc. Economic Geol. (MGEI), Bandung, p. 76-79.
*(Lakuwahu cluster of mineral deposits hosted by andesitic Lakuwahi Volcanics on S Romang near Wetar. Formed in shallow submarine caldera, subsequently covered by reefal limestones. Dominant Pb-Zn mineralization. Uplift in past 1-2Myr caused emergence of Romang Island)*

Ohara, M., K. Nakamura & Y. Sasaki (2015)- The structural evolution of Babar- Selaru region in the southern Banda outer arc, Eastern Indonesia. Proc. 39th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA15-G-180, 17p.
*(Review of Outer Banda Arc area from E Timor to Tanimbar Island, surrounding Inpex Babar Selaru PSC in Timor-Tanimbar Trough, N of Abadi Field. Part of N margin Australian continent and affected by: (1) Jurassic-E Cretaceous N-S extension, with opening of Tethys Ocean; overlain by Cretaceous- Paleogene deposits of thermal subsidence phase; (2) deepening of Timor Trough and thrusting in Pliocene, characterized by onlapping sequence onto Top Late Miocene horizon; (3) Today thrusts common in N and N-dipping normal faults dominant in S of Trough)*

Ohara, M., L.A. Perdana, A. Saputra, M. Fujimoto & B. Sapiie (2016)- Neogene to Quaternary structural evolution in the offshore Tanimbar region in the southern Banda Outer Arc: implications for petroleum system in Eastern Indonesia. Proc. 40th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA16-545-G, 15p.
*(Tectono-stratigraphic framework for Babar Selaru and Masela blocks in Timor-Tanimbar Trough/ N Bonaparte Basin. Normal fault-dominated domain in S formed by extension on Australian continental margin, and S-vergent Pliocene-Recent thin-skinned fold-thrust belt in N (= accretionary prism of Outer Banda Arc))*

Ohara, M., L.A. Perdana, A. Saputra, A. Himsari & M. Fujimoto (2016)- Neogene hydrocarbon prospectivity of the frontier offshore Tanimbar region in the southern Banda Arc, Eastern Indonesia. Proc. 40th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA16-544-G, 16p.
*(On hydrocarbon prospectivity in accretionary prism thrust structures in Timor Sea S of Babar)*

Okal, E.A. & D. Reymond (2003)- The mechanism of great Banda Sea earthquake of 1 February 1938: applying the method of preliminary determination of focal mechanism to a historical event. Earth Planetary Sci. Letters 216, p. 1-15.
*(Large 1938 Banda Sea earthquake ranks among 10 largest moments ever published. Resulted from mostly thrust-faulting mechanism (strike 276°; dip 63°; slip 70°). Took place in region of sparse seismicity, away from presumed block boundaries. The 1938 event shares compressional axis with smaller and deeper 1963 shock to SW, showing coherence in regional contortion of subducting Australian plate lithosphere)*

Osada, M. & K. Abe (1981)- Mechanism and tectonic implications of the Great Banda Sea earthquake of November 4, 1963. Physics Earth Planetary Interiors 25, 2, p. 129-139.
*(Banda Sea earthquake of 1963 (h = 100 km, mB = 7.8) large intermediate-depth shock within subducting plate of Banda Arc. Estimated fault area of 90×70 km2, average dislocation of 7m. Represents oblique thrust movement on plane with dip direction N170°E, dip 48° and rake 52°. Faulting took place within subducted plate and offset it. Further repetition of such faulting might eventually break subducted plate)*

Papp, Z. (1980)- A three-dimensional model of the seismicity in the Banda Sea region. Tectonophysics 69, p. 63-83.

*(Tectonic earthquake data from 1918-1965, between 120°. -134°E and 0- 10'S, used to build 3-D model of hypocenters in Banda Sea)*

Papp, Z. (1981)- Temporal variation of elastic strain release in the Banda Sea region. Bull. Geol. Res. Dev. Centre (GRDC), Bandung 4, p. 13-17.

Pertamina/BPPKA (1996)- Petroleum geology of Indonesian basins, vols. VI-IX Eastern Indonesian Basins, IX-Tanimbar, Jakarta, p. 1-32.

Pigram, C.J. & H. Panggabean (1983)- Age of the Banda Sea, eastern Indonesia. Nature 301, 5897, p. 231-234.
*(Banda Sea floor probably trapped Jurassic Indian Oceanc crust (recent work favors Mio-Pliocene age; JTvG))*

Porritt, R.W., M.S. Miller, L.J. O'Driscoll, C.W. Harris, N. Roosmawati & L.T. da Costa (2016)- Continent-arc collision in the Banda Arc imaged by ambient noise tomography. Earth Planetary Sci. Letters 449, p. 246-258.
*(Interpretation of structure of Australia- Banda Arc collision zone from broadband seismic noise)*

Pownall, J.M., R. Hall & G.S. Lister (2016)- Rolling open Earthôs deepest forearc basin. Geology 44, 11, p. 947-950.
*(Weber Deep 7.2-km-deep forearc basin in Banda Sea is deepest point of Earth's oceans not within trench. Formed by forearc extension driven by E-ward subduction rollback. Lithospheric extension in upper plate accommodated by major low-angle normal fault system named 'Banda detachment'. Bathymetry data reveal Banda detachment is exposed underwater over much of 120 km downdip and 450 km lateral extent)*

Prasetyo, H. (1984)- Contribution on the marine geology and geophysics of the Banda Sea and adjacent regions. Marine Geol. Inst. (MGI), Bandung, Atlas, p. 1-41.

Prasetyo, H. (1988)- Marine geology and tectonic development of the Banda Sea region, Eastern Indonesia: a model of an 'Indo-Borderland' marginal basin. Ph.D. Thesis, University of California Santa Cruz, p. 1-475. *(Unpublished)*
*(Study of origin of Banda Sea using single channel seismic profiles, bathymetry, SeaMARC II sonographs, marine gravity data, dredge and piston core samples and geologic investigations of surrounding islands of Misool, Sumba. Buton and Sawu. Banda Sea region neither young spreading basin or trapped piece of oceanic crust, but collage of oceanic and continental fragments displaced from N Australian continental margin and trapped within Banda basin, prior to 7 Ma, similar to S California 'Borderland')*

Prasetyo, H. (1989)- Marine geology and tectonic development of the Banda Sea region, Eastern Indonesia: a model of an 'Indo-borderland' marginal basin. Marine Geol. Inst. Indonesia Spec. Publ. 1, p. 1-427.
*(Same as Prasetyo 1988)*

Prasetyo, H. (1991)- From California borderland to Eastern Indonesia collision zone. Proc. 16th Ann. Conv. Indon. Assoc. Geoph. (HAGI), p.

Prasetyo, H. (1998)- Peningkatan pemahaman terhadap tatanan geologi kelautan kawasan Indonesia. Marine Geol. Inst., Bandung, p.
*('Increase of understanding of the marine geology of the Indonesian region')*

Prasetyo, H. (1999)- Marine geology and tectonic development of the Banda Ridges system, eastern Indonesia; implication for Banda marginal basin formation. In: Proc. 35th Session Comm. Co-ord. Joint Prospecting Mineral Resources in Asian Offshore Areas (CCOP), Subic Bay 1998, 2, Techn. Repts. p. 11-38.
*(Banda Sea neither young spreading basin nor trapped piece of oceanic crust, although N (Sula) and S (Banda) basins appear to be trapped Pre-Tertiary oceanic crust. Banda Ridges in central part composed of continental borderland formed in Irian Jaya and emplaced in present position by Late Miocene. Basement rock dredged from Banda Ridge can be correlated with similar lithologies on Irian Jaya, Misool, Buru and PNG. Banda*

*Ridge Terrane overlain by Upper Miocene- younger sediments that consist of pelagic limestones and Miocene volcanic rocks in the Lucipara Islands)*

Purdy, G.M. & R.S. Detrick (1978)- A seismic refraction experiment in the Central Banda Sea. J. Geophysical Research 83, p. 2247-2257.
*(Seismic refraction experiment in C Banda Sea suggests oceanic crustal structure, with velocities typical of oceanic layers 2, 3A, and 3B and mantle. Layer 3B unusually thick (2.5-4.6 km); greater than normal depths to Moho of 9-10 km below sea floor. These and earlier results from S Banda basin indicate that entire Banda Sea is underlain by oceanic type crust)*

Rehault, J.P., J.A. Malod, M. Larue, S. Burhanuddin & L. Sarmili (1991)- A new sketch of the central North Banda Sea, eastern Indonesia. J. Southeast Asian Earth Sci. 6, p. 329-334.
*(New bathymetric map of oceanic North Banda Basin. NW-SE structural pattern appears to be result of orientation of large NW-SE strike-slip faults and present direction of NE-SW convergence. Faulting and underthrusting of N Banda Sea crust beneath E Sulawesi along active Tolo accretionary prism)*

Rehault, J.P., R. Maury, H. Bellon, L. Sarmili, S. Burhanuddin, J.L. Joron, J. Cotten & J.A. Malod (1994)- La mer de Banda Nord (Indonesie): un bassin arriere-arc du Miocene superieur. Comptes Rendus Academie Sciences, Paris 318, p. 969-976.
*(Pillow-lavas dredged from basement of N Banda Sea are transitional basalts and trachyandesites with negative Nb-Ta anomalies similar to lavas from back-arc basins. K-Ar ages 9 and 6.9 Ma. Oceanic basement now subducting beneath E Sulawesi not trapped piece of Indian Ocean, but Late Miocene back-arc basin floor. (one of first papers after Hamilton (1979) to suggest Late Miocene back arc basin interpretation)*

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*(online at: https://gsmpubl.files.wordpress.com/2014/09/bgsm1993008.pdf)*
*(Reconstruction of Australian continental subducting slab from earthquake data. Vertical and lateral discontinuities, some reflecting slab separation during previous microcontinental collision event at ~10-7 Ma)*

Richardson, A.N. (1994)- Lithospheric structure and dynamics of the Banda Arc, Eastern Indonesia. Ph.D. Thesis, University of London, p. 1-348. *(Unpublished)*

Richardson, A.N. & D.J. Blundell (1996)- Continental collision in the Banda arc. In: R. Hall & D. Blundell (eds.) Tectonic evolution of Southeast Asia, Geol. Soc. London, Spec. Publ. 106, p. 47-60.
*(Two deep seismic profiles E of Timor show Australian continental crust bent down to N. Overriding upper plate too much volume to be only sediments accreted from Australian Plate: must include continental crustal material, like microcontinent or outer margin high. Micro-continental fragment collided with subduction zone at ~8 Ma (age of Aileu Fm metamorphism) and caused Late Miocene Banda allochton uplift)*

Ritsema, A.R. (1953)- New seismicity maps of the Banda Sea. Journ. Scient. Res. Indonesia 2, p. 48-54.

Ritsema, A.R. (1986)- Subduction in the Banda Arc. Gerlands Beitrage Geophysik 95, 5, p. 414-417.

Ritsema, A.R., R.P. Sudarmo & I. Putu Pudja (1989)- The generation of the Banda Arc on the basis of its seismicity. In: Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, 2-3, p. 165-172.
*(Seismicity of Banda Sea region suggests Banda Arc originated as Pacific Ocean subduction zone, Banda basin originally started as backarc spreading centre. Deformation of Banda Arc with strong curvature caused by adoption of northern slivers of N-moving Australian plate by W-moving Pacific plate. S-N stress influence up to region of N Banda Arc, etc.)*

Roberts, G., C. Ramsden, T. Christoffersen, N. Wagimin & Y. Muzaffar (2011)- East Indonesia: plays and prospectivity of the West Aru, Kai Besar and Tanimbar Area- identified from new long offset seismic data. AAPG Ann. Conv., Houston 2011, Search and Discovery Art. 10348, 15p. *(Expanded abstract)*

*(online at: www.searchanddiscovery.com/documents/2011/10348roberts/ndx_roberts.pdf)*
*(Observations from recent seismic survey of SE Arafura Platform/Basin, Tanimbar and Aru Troughs and E part of Banda Arc collision zone)*

Rutten, L.M.R. (1927)- De eilanden tussen Timor en Ceram. In: L.M.R. Rutten (1927) Voordrachten over de geologie van Nederlandsch Indie, Wolters, Groningen, p. 705-716.
*('The islands between Timor and Seram'. Brief reviews of geology of Leti, Mao, Babar, Kai islands, etc.)*

Rynn, J.M.W. & I.D. Reid (1983)- Crustal structure of the western Arafura Sea from ocean bottom seismograph data. J. Geol. Soc. Australia, 30, 1-2, p. 59-74.
*(Refraction data taken from ocean bottom seismograph recordings in W Arafura Sea indicate continental-type structure: ~2 km of sediments, with velocities of 2-4 k/s, over two layer crust. Moho is at depth of 34 km)*

Sandiford, M. (2008)- Seismic moment release during slab rupture beneath the Banda Sea. Geophysical J. Int. 174, 2, p. 659-671.
*(Differential vertical stretching of downgoing slab along Damar Zone (largely submerged segment of Banda arc E of Roma) consistent with slab rupture front ~100-200 km under Roma propagating E at ~100 km/ Myr. Detached lower slab sinking at ~60-70 km/Myr. Anomalous trends beneath Damar, where subhorizontal constriction suggests extreme stress ~100 km ahead of slab rupture front. Stress concentrations may explain anomalously deep ocean gateways in region)*

Saputra, A. & M. Ohara (2016)- Basin and petroleum system modeling of offshore Tanimbar Region: implications of structural development history. Proc. 40th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA16-546-G, 17p.
*(Petroleum system modeling of offshore SW Tanimbar and N Bonaparte Basin. Abadi gas field sourced from Masela Deep and Malita Graben. Offshore Tanimbar region mostly charged by potential northern kitchen)*

Sarmili, L. (1993)- A new tectonic framework in the North Banda basin. Bull. Marine Geol. Inst. Indonesia 8, 3, p. 1-19.

Sarmili, L., N. Sukmana & A. Saripudin (2000)- Indication of a manganese crust on volcanic rocks within the North Banda Sea (East Indonesia). Proc. 29th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 2, p. 79-86.
*(N Banda Sea up to 6000m deep. Dredge samples of U Miocene volcanics, representing young oceanic crust. Rocks from 3500-4000m water depth have iron-manganese coating)*

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Schluter, H.U. & J. Fritsch (1985)- Geology and tectonics of the Banda Arc between Tanimbar Island and Aru Island (Indonesia). Results of R/V Sonne Cruise SO-16, Geol. Jahrbuch E30, p. 3-41.
*(BGR 1981 seismic and gravity-magnetics program between Australian continental shelf and Tanimbar and Kai Island groups, with examples of Tanimbar-Kai trench-accretionary prisms, young normal faulting on shelf and slope, etc.)*

Sentani, E.A. & A. Nugraha (2009)- Opportunities (III), Kai- Tanimbar. Inameta J. 7, p. 28-31.
*(online at: www.patranusa.com)*
*(Brief overview of Kai- Tanimbar foldbelt area, W of Arafura Sea, in conjunction with tender round offering. Note similarities to Timor- Seram foldbelts)*

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*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/14)*

*('Delineation of sedimentary basin and subsurface geological interpretation of the Tanimbar basin based on analysis of gravity data'. Gravity survey on and around Yamdena Island suggest six sub-basins. NE-SW trending basement high)*

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*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/181/177)*
*('Gravity field and geodynamic models around the Kai and Aru Islands, Moluccas'. Kai- Aru area underlain by continental crust. Kai islands formed by thrusting, Aru islands by rifting)*

Silver, E.A., J.B. Gill, D. Schwartz, H. Prasetyo & R.A. Duncan (1985)- Evidence for a submerged and displaced continental borderland, North Banda Sea, Indonesia. Geology 13, p. 687-691.
*(Banda Sea two oceanic fragments (S and N Banda basins), separated by Banda Ridges submerged and displaced continental borderland. Dredged andesitic volcanics from Banda Ridges mainly Late Miocene, 7-9 Ma. Suggest origin from Birds Head between 5-10 Ma)*

Situmorang, M. (1989)- Lithofacies and depositional pattern of sea floor sediments in the North Banda Sea, Indonesia. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, 4, p. 405-413.
*(On N Banda Sea Quaternary terrigenous and volcanogenic deposits)*

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*(online at: http://igitur-archive.library.uu.nl/geo/2012-0426-200502/Situmorang-Mangatas-84-1992.pdf)*
*(Collection of papers on Quaternary sediments and heavy minerals of E Indonesia Seas, followed by synthesis)*

Situmorang, M. (1993)- The forms and characteristics of detrital heavy minerals in Banda Sea and the adjacent areas. Bull. Marine Geol. Inst. Indonesia 8, 1, p. 9-31.
*(Detrital heavy minerals in Banda Sea seafloor sediments predominantly mafic volcanic and sedimentary minerals with some metamorphic minerals)*

Situmorang, M. & L. Sarmili (1997)- Composition, morphometry, dispersal patterns of gravel clasts and basement rocks in the Banda Arc sea floor, eastern Indonesia. Bull. Marine Geol., Bandung, 12, 1, p. 1-26.
*(Gravel on Banda Arc seafloor includes clasts of sediments (limestone, sandstone, coral, claystone, marl), volcanics (pyroxene andesite, pumice) and minor metamorphics. Seram, Timor, and Gorong Islands supplied majority of clasts. Volcanic clasts on Bandaneira and Serua volcanic arcs, and in Weber Deep likely derived from Banda volcanic arc and Manuk, Serua, Nila and Teon volcanoes. Part of metamorphic clasts derived from basement cropping out at sea floor)*

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*(Comparison of structures formed across Banda Arc since Pliocene during Australia- Arc collision with structures in central British Isles)*

Snyder, D. & R. Hobbs (1999)- BIRPS Atlas II: a second decade of deep seismic reflection profiling. Geol. Soc. London, MPB 42, 3 CDȏs.
*(Deep seismic sections from different parts of world, including across Banda Arc. Data quality rel. poor)*

Snyder, D.B., J. Milsom & H. Prasetyo (1996)- Geophysical evidence for local indentor tectonics in the Banda arc east of Timor. In: R. Hall & D. Blundell (eds.) Tectonic evolution of Southeast Asia, Geol. Soc., London, Spec. Publ. 106, p. 61-73.
*(Seismic reflection profiles and gravity across Banda arc E of Timor. Reflectors beneath Sahul Platform indicative of extensional rift structures overprinted by recent shortening. Negative Bouguer gravity associated with S parts of accretionary complex unusually broad and deep. Further N, forearc basin narrow near E Timor*

*and little sediments, mostly undeformed. Backarc region to N has N-S trending line of seamounts culminating in active Gunung Api volcano, 400 km above Benioff zone. Anomalously thick, bouyant crust beneath Banda Arc E of Timor either local promontory in irregular boundary of Australian craton was underthrust 50-70 km beneath volcanic arc and forearc, or Paleozoic basin similar to nearby Bonaparte underthrust and former crustal structure inverted and thickened to form buoyant crust)*

Snyder, D.B., H. Prasetyo, D.J. Blundell, C.J. Pigram, A.J. Barber, A. Richardson & S. Tjokosaproetro (1996)- A dual doubly vergent orogen in the Banda arc continent-arc collision zone as observed on deep seismic reflection profiles. Tectonics 15, p. 34-53.
*(Interpretation of deep seismic lines across Banda Arc E of Timor (BIRPS 1992). Crustal thicknesses inferred from seismic velocities, reflectors, and gravity anomalies are consistent with merging of thinned continental shelf margin with oceanic lithosphere to form orogenic belt near Timor. W of Timor oceanic lithosphere subducts beneath oceanic crust south of the arc islands from Flores to Bali)*

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*(online at: www.palass-pubs.org/palaeontology/pdf/Vol7/Pages%20621-629.pdf)*
*(Belemnopsis stolleyi n.sp. for Belemnopsis aucklandica specimens collected by Weber in variegated Upper Oxfordian marls of the 'Belemnitenbach' (belemnite creek), 6 km from W coast of North Yamdena, Tanimbar. First described by Stolley (1929))*

Sukardi, T. & Sutrisno (1990)- Geologic map of the Tanimbar Islands Quadrangle, Maluku, scale 1: 250,000. Geol. Res. Dev. Centre (GRDC), Bandung.
*(Tanimbar Islands SW-directed thrust faults. NE edge of Yamdena and offshore islands tectonically complex melange and/or mud volcanoes ('Molu Complex') with Triassic and Jurassic sandstones and limestones, also metamorphic and volcanic rock types*

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*('The Banda dilemma'. Discussion of nature and age of crust below Banda Sea)*

Tissot van Patot, J.W. (1908)- Een viertal tochten door het eiland Terangan (Aroe Eilanden) in Maart en April 1907. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 25, p. 77-93.
*('Four trips through Terangan, Aru Islands, in 1907')*

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Untung, M. (1985)- Subsidence of the Aru Trough and the Aru Island, Irian Jaya, Indonesia. Tectonophysics 112, 1-4, p. 411-422.
*(Aru Trough isostatic anomalies show region is in subsidence. Crustal extension may be active in zone E of Aru Trough, resulting in graben formation. Root of Aru Island pulled downward to E. Crustal extension indicates separation of block of Australian continental crust from Australian platform)*

Usna, I., S. Tjokrosapoetro & S. Wiryosujono (1977)- Geological interpretation of a seismic reflection profile across the Banda Sea between Wetar and Buru Islands. Geol. Res. Dev. Centre (GRDC), Bandung, Bull. 1, p. 7-15.

Van Bemmelen, R.W. (1979)- Crustal convergence or divergence in the Banda Sea region of Indonesia? In: W.J.M. van der Linden (ed.) Fixism, mobilism or relativism: Van Bemmelenös search for harmony, Geologie en Mijnbouw 58, 2, p. 101-106.
*(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0YW80b3Q5MEhSUUU/view)*
*(Supposed to be a review of manuscript of Bowin et al. (1980) paper 'Arc-continent collision in the Banda Sea region', but mainly vanB's hard-to-understand alternative interpretation of dynamics of Banda Sea region, in terms of undations, etc. (vanB not a supporter of the 'so-called new global tectonics'.) No figures)*

Van der Kaars, S., X. Wang, A.P. Kershaw, F. Guichard & D.A. Setiabudi (2000)- A late Quaternary palaeoecological record from the Banda Sea, Indonesia; patterns of vegetation, climate and biomass burning in Indonesia and northern Australia. Palaeogeogr. Palaeoclim. Palaeoecology 155, p. 135-153.
*(Banda Sea core SHI-9014 palynological and carbon isotope analyses provide a regional vegetation, fire and climate history for Banda Sea in last 180,000 years. During last two glacial periods drier climates in both E Indonesia and N Australia and lower montane forests expanded in E Indonesia indicating cooler climatic conditions. Before 37,000 yr BP. Dipterocarpaceae important part of lowland vegetation of E Indonesia. Subsequent demise likely related to increased human impact)*

Van der Vlerk, I.M. (1966)- *Miogypsinoides*, *Miogypsina*, *Lepidocyclina* and *Cycloclypeus* de Larat, Moluccas. Eclogae Geol. Helvetiae 59, 1, p. 421-429.
*(online at: https://www.e-periodica.ch/digbib/view?pid=egh-001:1966:59#571*
*(Three limestone samples from central part of Larat Island (=Kai Besar?), collected by Weber (BPM), with miogypsinids already described by Drooger (1953). Type locality of Miogypsinoides dehaartii Van der Vlerk 1924. No locality map or local stratigraphy. Miogypsinoides dehaartii and Miogypsina borneensis suggest Aquitanian age. No locality descriptions or local stratigraphy)*

Van Gool, M., W.J. Huson, R. Prawirasasra & T.R. Owen (1987)- Heat flow and seismic observations in the northwestern Banda arc. Proc. 23rd Sess. Comm. Co-ord. Joint Prospecting Mineral Resources in Asian Offshore Areas (CCOP), Madang 1986, 2, p. 1-15.
*(Heat flow measurements in deep N Buru and Lucipara basins, N Banda Sea, during Snellius II expedition in 1985 all show high values, interpreted to be result of recent E-W strike-slip movement in NW Banda Arc)*

Van Gool, M., W.J. Huson, R. Prawirasasra & T.R. Owen (1987)- Heat flow and seismic observations in the northwestern Banda Arc. J. Geophysical Research 92, B3, p. 2581-2586.
*(High heat flow values in centers of three basins in NW Banda Arc. Average in N Buru basin 161 mW/m2. Two small, N-S to NW-SE elongated subbasins in Lucipara basin 175 and 134, mW/m2, respectively. High heat flow in N Buru and Lucipara basins interpreted to be result of recent E-W strike-slip movement in NW Banda Arc)*

Van Marle, L.J. & M.E.M. de Smet (1990)- Notes on the Late Cenozoic history of the Kai Islands, Eastern Indonesia. Geologie en Mijnbouw 69, p. 93-103.
*(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0QmlrdXZacGpTZ0E/view)*
*(Kai Besar large anticlinorium with Eocene rocks in center. M Eocene- M. Miocene in bathyal calcilutite facies, recording deep water passive margin fill; common shallow water carbonate debris in older literature interpreted as shallow marine. Kai Islands emerged in Late Miocene- Pliocene, with ~2 km of uplift in last 10 My. Kai Besar no elevated coral reefs, suggesting it is subsiding; Kai Kecil 4-5 elevated reefs unconformable over Pleistocene core)*

Vening Meinesz F.A. (1951)- A third arc in many island arc areas. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, B54, 5, p. 432-442.
*(see also Westerveld 1954)*

Verbeek, R.D.M. (1901)- Geologische beschrijving van de Banda-eilanden. Jaarboek Mijnwezen Nederlandsch Oost-Indie 29 (1900), p. 1-29.
*('Geological description of the Banda islands'. Banda Neira/ Gunung Api and Run composed of young volcanics and coral limestones. With 1:20,000 scale map of Banda Neira and Gunung Api)*

Verbeek, R.D.M. (1908)- Residentie Amboina. In: Molukkenverslag, Jaarboek Mijnwezen Nederlandsch Oost-Indie 37 (1908), Wetenschappelijk Gedeelte, p. 428-655.
*(Early descriptions of islands of Banda arc, from E of Timor to Seram-Buru. Includes descriptions and cross-sections of Kai Besar and illustrations of Eocene Discocyclina- Asterocyclina from Kai. Oldest beds on Kai Besar weakly folded Eocene marly limestones, dipping 10° W. Overlain by horizontal limestone terraces, oldest with Lepidocyclina (Miocene), younger ones post-Miocene)*

Villeneuve, M., J.J. Cornee, R. Martini, L. Zaninetti, J.P. Rehault, S. Burhanudin & J. Malod (1992)- Upper Triassic shallow-water limestones in the Sinta Ridge (Banda Sea, Indonesia). Geo-Marine Letters 14, p. 29-35.
*(online at: https://archive-ouverte.unige.ch/unige:26438)*
*(10 dredge samples from N slope Sinta Ridge (separates N and S Banda basins). Some are shallow marine limestones with Upper Norian- Rhaetian? benthic foraminifera, (incl. Aulatortus, Triasina oberhauseri, Duostominidae). Similarities with E Sulawesi, Buru and Seram consistent with independent Upper Triassic block. Origin of Banda Sea microcontinents questionable)*

Villeneuve, M., J.P. Rehault, J.J. Cornee, J.A. Malod, J. Clermonte, J.M. Auzende, L. Sarmili, S. Burhanuddin, G. Glacon, G. Tronchetti, L. Zaninetti & R. Martini (1993)- Plio-Quaternary evolution of the North Banda Sea and East Sulawesi margin. In: M.T. Zen (ed.) 10th anniversary of the French-Indonesian cooperation in oceanography; ocean research, technology and maritime industry, Jakarta 1993, Adiwarna Citra, Bandung, p. 109-118.
*(online at: https://archive-ouverte.unige.ch/unige:26392)*
*(Cruise of vessel Baruna Jaya III provided new seismic data and dredge samples from W part of Sinta Ridge (incl. Triassic limestones). Late Miocene age of opening of North Banda Sea (6-9 Ma basalts). Continental Sinta Ridge went down from surface to 3000m during creation of N Banda Sea oceanic crust. General compressive regime in whole N Banda Sea)*

Von Der Borch, C.C. (1979)- Continent-island arc collision in the Banda Arc. Tectonophysics 54, p. 169-193.
*(Timor-Tanimbar-Ceram troughs and adjacent outer Banda Arc very similar to arcs subducting oceanic lithosphere and sediments, despite fact that outer Banda Arc is underlain by continental crust(??). Alignment with oceanic Indonesian Arc, gravity anomalies, and persistence of morphological and structural entities around arc favour subduction in Timor-Tanimbar-Ceram Troughs rather than gravity sliding towards troughs. Outer Banda Arc is accretionary prism of subduction zone which was formerly in ocean-crust setting but since Pliocene has been interacting with continental lithosphere. This model for Banda Arc differs from other structural interpretations of Timor island, which is emergent outer arc)*

Wandel, G. (1936)- Beitrage zur Kenntnis der Jurassischen Molluskenfauna von Misol, Ost Celebes, Buton, Seran und Jamdena. In: J. Wanner (ed.) Beitrage zur Palaeontologie des Ostindischen Archipels 13, Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 75B, p. 447-526.
*(‘Contributions to the knowledge of Jurassic molluscs from Misool, East Sulawesi, Buton, Seram and Yamdena’. Description of Mollusca, mainly collected by F. Weber. Misool faunas include upper Liassic Harpoceraten beds, lower Dogger Hammoceraten beds, Oxfordian Aucella malayomaorica marls (also in E Sulawesi), etc.)*

Wanner, J. & E. Jaworski (1931)- Liasammoniten von Jamdena und Celebes. Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 66, B, p. 199-210.
*('Liassic ammonites from Yamdena and Sulawesi'. Sulawesi ammonites from poorly known central part of East arm, collected by BPM geologist Weber, are first records of Early Jurassic ammonites from E Sulawesi (Arnioceras cf. seilaeve from dark grey sandy limestone as float in upper Balingara River, 20km SE of river mouth). Yamdena ammonites from Tasik Selwasa and Botenjahu mud volcano deposits include Echioceras wichmanni, Asteroceras sparsicostatum n.sp. and Arnioceras cf. arnouldi. Fauna and lithology very similar to Krumbeck (1922)'s 'grey cephalopod nodule marl' of Roti and Timor)*

Wahab, A., Susanto & R. Nyak Baik (1991)- Seismic expression across Tanimbar trough, Eastern Indonesia. Proc. 16th Ann. Conv. Indon. Assoc. Geophys. (HAGI), Bandung, p.

Wallace, A.R. (1857)- On the natural history of the Aru Islands. Annals Magazine Natural History, ser. 2, 20, p. 473-485.

Weber, F. (1923)- Rapport omtrent het geologisch onderzoek van Klein Kei. Unpubl. BPM Report, p.
*('Report of geological investigation of Kai Kecil island'. Unpublished BPM report at GRDC library No. H 23-2/(H5) 55)*

Weber, F. (1924)- Rapport omtrent het geologisch onderzoek van het eiland Groot Kei of Noehoe Tjoet. BPM report, p. *(Unpublished)*
*('Report of geological investigation of Kai Besar island'. Unpublished BPM report at GRDC library No. H 24-2/(H5) 55)*

Weber, F. (1925)- Verslag omtrent het geologisch onderzoek der eilandgroep van Koer en Tajando (Westelijke Kei eilanden). BPM report, p. *(Unpublished) (GRDC library, No. ?)*
*('Report of geological investigation of island group of Kur and Tajando'. Unpublished BPM report at GRDC library No. H 25-3/(H4) 55)*

Weber, F. (1925)- Verslag omtrent het geologisch onderzoek der Z.W. Tanimber eilanden. BPM Report, p. *(Unpublished)*
*('Report of geological investigation of the SW Tanimbar islands'. Commonly quoted report at Geol. Survey, Bandung. Weber's macrofossil collections described by Wanner, Stolley, Wandel, etc.)*

Welc, J.L. & T. Lay (1987)- The source rupture process of the Great Banda Sea earthquake of November 4, 1963. Physics Earth Planetary Interiors 45, p. 242-254.
*(1963 Banda Sea earthquake one of largest (Mw=8.3) intraplate events. Involved oblique thrusting at intermediate depth within subducted lithosphere near abrupt bend in SE Banda arc (6.86° S, 129.58° E). Rupture initiated at 120 km depth and expanded over vertical extent of ~50 km. Along-strike rupture length only ~100 km. Tied to slab rupture at edge of subducting Australian continental lithosphere?)*

Westerveld, J. (1955)- The Lucipara Islands Ridge and a third arc in the Banda Sea. Geologie en Mijnbouw 17, 3, p. 84-88.
*(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0dkduRDNOejUyT2s/view)*
*(Existence of third arc in Banda Sea N of modern volcanic arc at Lucipara Islands, as suggested by Vening Meinesz (1951), not supported by geological and bathymetric evidence)*

Wiryosujono, S. (1976)- Melange assemblage in Babar Islands. Berita Dit. Geol. (Geol. Survey Indonesia Newsletter) 9, 6, p. 71-75.
*(Wiryosujono & Tjokrosapoetro 1978: large blocks of pillow basalt and diabase in valley of main river on surface of Triassic and Jurassic flysch deposits)*

Woodside, J.M., D. Jongsma, M. Thommeret, G. Strang van Hees & Puntodewo (1989)- Gravity and magnetic field measurements in the eastern Banda Sea. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, 2-3, p. 185-203.
*(Magnetic anomalies may indicate volcanic material associated with topographic features in Aru and Weber Troughs. Discontinuity along W extension of Tarera-Aiduna Fault between Seram subduction zone and Aru Trough/ Kuenen Bank (larger variations of gravity to S and change in magnetic trends) although both gravity and magnetic anomalies exhibit NE-SW trend obliquely across SE section of Seram Trough. Seram Trench accretionary complex over dynamically-depressed crust of subducting plate. Weber Basin crust excessively depressed and thinned. Positive gravity anomalies suggest outer part of Timor-Tanimbar accretionary complex either above rising or shallower subducting plate, or contains substantial denser material. Major strike-slip feature may be present NE of Tanimbar, cutting accretionary complex obliquely)*

Zaim, Y., B. Ernawan & Fachrizal (2012)- Mud volcanoes in SE Maluku: evidence for netectonics in East Indonesia. Berita Sedimentologi 24, p. 18-23.
*(online at: www.iagi.or.id/fosi/berita-sedimentologi-no-24-timor-and-arafura-sea.html)*
*(On active mud volcanoes on Babar, Tanimbar and Kai islands, generally associated with accretionary complexes)*

***VII.2. Lesser Sunda- West Banda Volcanic Arc (Bali-Lombok- Flores- Wetar)***

Abbott, M.J. & F.H. Chamalaun (1981)- Geochronology of some Banda Arc volcanics. In: A.J. Barber & S. Wiryosujono (eds.) The geology and tectonics of Eastern Indonesia, Geol. Res. Dev. Centre, Proc. CCOP-IOC SEATAR Working Group Mtg., Bandung 1979, Bandung, Spec. Publ. 2, p. 253-268.
*(E Indonesia K/Ar geochronology program at Flinders University. Banda Arc volcanism ceased in Alor-Wetar sector and on Ambon at ~3 Ma, reflecting minimum age of Timor/ Seram collisions. Inactive parts of arc characterized by rapid uplift. Wetar volcanism may have started 12 Ma. N Timor Oecusse pillow basalts island-arc tholeite with wide radiometric age range, but ~6-4 Ma most likely)*

Ali, E. (1997)- Batu Hijau porphyry copper-gold deposit, exploration and evaluation. Proc. 26th Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, p. 193-205.
*(Batu Hijau porphyry copper-gold deposit, discovered by Newmont in 1990 in SW Sumbawa, in Banda volcanic arc. Geometry of deposits resembles upright cylinder with high grade ore in multiple tonalite porphyries, intruded into E Tertiary diorite and andesite wall rocks. Chalcopyrite and bornite main Cu minerals)*

Alzwar, M. (1981)- A structural discontinuity with associated potassic volcanism in Indonesian island arc: first results of the CNR-CNRS-VSI mission to the island of Sumbawa. Soc. Geol. Ital. Rendicanti 4, p. 275-288.

Arif, J. & T. Baker (2004)- Gold paragenesis and chemistry at Batu Hijau, Indonesia: implications for gold-rich porphyry copper deposits. Mineralium Deposita 39, p. 523-535.
*(Sumbawa Batu Hijau world-class porphyry copper-gold deposit. Neogene volcanism progressive change from calc-alkaline to shoshinitic affinities with time. E- M Miocene andesitic volcaniclastic rock succession dips gently in W direction, cut by several phases of M- Late Miocene intrusions (5.9-3.7 Ma; hypabyssal andesites, equigranular quartz diorite plutons, late-stage tonalite- granodiorite dikes))*

Arif, J., D. Setyandhaka & J. Proffett (2008)- Characteristic of the root of Cu-Au porphyry system: results of study from Batu Hijau Cu-Au porphyry deposit. Proc. PACRIM 2008 Conference, Australian Inst. Mining Metallurgy (AusIMM), Melbourne, p. *(Extended Abstract)*
*(Copper and gold mineralisation at Batu Hijau related to quartz veining and wall rock alteration associated with multiple tonalite porphyry intrusions. Batu Hijau comparatively minor late alteration and mineralisation overprints. This paper summarises results of cores from deeper sections of Batu Hijau)*

Arifin, L. (1998)- Stratigrafi seismik perairan Lombok Barat. J. Sumber Daya Geologi 8, 80, p. 17-26.
*('Seismic stratigraphy of W Lombok area')*

Armstrong, J.T. (2012)- Deciphering the evolution of ore fluids at the Batu Hijau copper-~gold porphyry deposit, Sumbawa, Indonesia. M.Sc. Thesis, University of Nevada, Las Vegas, p. 1-165.
*(online at: http://digitalscholarship.unlv.edu/cgi/viewcontent.cgi?article=2533&context=thesesdissertations)*
*(Four types of fluid inclusions recognized at Batu Hijau Cu-Au deposit, SW Sumbawa, suggesting ore fluids at Batu Hijau formed in two stages:(1) initial high T fluid precipitating only minor Cu and (2) cooler, denser, but compositionally similar fluid that contributed significantly to mineral precipitation)*

Aswan, Y. Zaim, Y. Rizal, I.N. Sukanta, S.D. Anugrah, A.T. Hascaryo, I. Gunawan, T. Yatimantoro et al. (2017)- Age determination of paleotsunami sediments around Lombok Island, Indonesia and identification of their possible tsunamigenic earthquakes. Earthquake Science 30, 2, p. 107-113.
*(online at: https://link.springer.com/content/pdf/10.1007%2Fs11589-017-0179-2.pdf)*
*(210Pb age dating method of young paleotsunami sediments of W and SW Lombok. Gawah Pudak sediments deposited 37 and 22 years ago (1977 and 1992). Three paleotsunami sediments from Gili Trawangan deposited 149, 117 and 42 years ago. Tied 1857 Bali Sea earthquake, 1897 Flores Sea or Sulu Sea earthquake, 1975 Nusa Tenggara earthquake, 1977 Sumba earthquake and 1992 Flores earthquake)*

Audley-Charles, M.G. (1974)- Banda Arcs. In: A.M.Spencer (ed.) Mesozoic-Cenozoic orogenic belts, Geol. Soc., London, Spec. Publ. 4, p. 349-363.

*(Review of structural zones in Banda Arcs, E Indonesia)*
Audley-Charles, M.G. (2004)- Ocean trench blocked and obliterated by Banda forearc collision with Australian proximal continental slope. Tectonophysics 389, 1-2, p. 65-79.
*(online at: www.uvm.edu/~lewebb/Geol240/Timor/Audley-Charles%202004%20Timor.pdf)*
*(E end of Java Trench now blocked SE of Sumba by Australian continental margin forming Roti-Savu Ridge. Present position of defunct Banda Trench buried below foothills of S Timor. Large part of Banda forearc carried over Australian margin during subduction between ~12- 3.5 Ma. Collision deformed forearc with part of unsubducted Australian lower plate cover, now forming exposed Banda orogen with parts of forearc basement. Forearc overrode Australian continental slope. Parts of proximal forearc prism and proximal continental slope cover detached and thrust N over Java-Banda Trench and forearc up to 80 km along S-dipping Savu Thrust and Wetar Suture. Reinterpretations explain absence of discernible subduction ocean trench in S Banda Arc and narrow forearc (30 km at Atauro, N of E Timor))*

Aye, M.T., A. Imai, N. Araki, S. Pramumijoyo, A. Idrus, L.D. Setijadji & J. Arif (2010)- Copper-gold bearing skarn mineralization at the Batu Hijau deposit, Sumbawa Island, Indonesia. Proc. 39th Ann. Conv. Indon. Assoc. Geol. (IAGI), Lombok, PIT-IAGI-2010-057, 6p.
*(Batu Hijau copper-gold skarn in SW Sumbawa Island resulted from interaction of hydrothermal fluids associated with E-M Pliocene tonalite porphyry intrusion into E-M Miocene andesitic volcaniclastic rocks and limestones)*

Aye, M.T., A. Imai, N. Araki, S. Pramumijoyo, A. Idrus, L.D. Setijadji & J. Arif (2011)- Mineralisasi skarn pembawa tembaga dan emas pada cebakan Batu Hijau, Pulau Sumbawa, Indonesia. Majalah Geologi Indonesia 26, 3, p. 191-198.
*(online at: www.bgl.esdm.go.id/publication/index.php/dir/article_detail/762)*
*('Copper and gold bearing skarn mineralization at the Batu Hijau deposit, Sumbawa Island, Indonesia'. Same as Aye et al. 2010)*

Aye, M.T., S. Pramumijoyo, A. Idrus, L.D. Setijadji, A. Imai, N. Araki & J. Arif (2011)- The mineralogy of gold-copper skarn related porphyry at the Batu Hijau deposit, Sumbawa, Indonesia. J. Southeast Asian Applied Geol. (UGM) 3, 1, p. 12-22.
*(online at: http://geologic-risk.ft.ugm.ac.id/fresh/jsaag/vol-3/no-1/jsaag-v3n1p012.pdf)*
*(Gold-copper bearing skarn mineralizations found during 2003 drilling program at deep level of deposit (-450m to -1050m) in Batu Hijau porphyry deposit, W Sumbawa Island)*

Aye, M.T., Subagijo, A. Idrus, L.D. Setijadji & A. Imai (2010)- Ore mineral sssemblages of skarn at the Batu Hijau porphyry Cu-Au deposit, Sumbawa Island, Indonesia. Proc. 3rd Reg. Conf. Geological Engineering Research in ASEAN 'Sustainable Geological Education', Siem Reap 2010, p. 71-75.

Aziz, F., M.J. Morwood & G.D. van den Bergh (eds.) (2009)- Pleistocene geology, palaeontology and archaeology of the Soa Basin, Central Flores, Indonesia. Geol. Survey, Bandung, Spec. Publ. 36, 146p.
*(Geology and vertebrate paleontology of Soa Basin, Flores. Surrounded by volcanics. Late Pliocene andesitic volcanics, Pleistocene pumice tuff and lacustrine tuffaceous sediments with 'island' mammal faunas like giant tortoise, komodo dragon and pygmy Stegodon)*

Barbieri, F., B. Bigioggero, A. Boriani, M. Cattaneo, A. Cavallin et al. (1987)- The island of Sumbawa: a major structural discontinuity in the Indonesian Arc. Boll. Soc. Geol. Ital. 106, p. 547-620.
*(Multidisciplinary paper. Scarce sediments: thin E-M Miocene carbonates/clastics on older volcanics, overlain by Pliocene-Recent volcanics; 4 volcanic phases: pre-Early Burdigalian, Pliocene 4.9- 3.1 Ma, Pleistocene 1.8-1.1 Ma and Holocene (large Tambora caldera 43 ka))*

Breen, N.A., E.A. Silver & S. Roof (1989)- The Wetar backthrust belt, eastern Indonesia: the effects of accretion against an irregularly shaped arc. Tectonics, 8, p. 85-98.
*(N-vergent thrust belt N of Wetar is result of Australia-Indonesian arc collision. Four main thrust segments: Wetar, Liran Atauro and Alor faults, probably controlled by presence of small rigid blocks in collision zone)*

Brouwer, H.A. (1919)- On the non-existence of active volcanoes between Pantar and Dammer (East Indian archipelago) in connection with the tectonic movements in this region. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 21, 2, p. 795-802.
*(Online at: www.dwc.knaw.nl/DL/publications/PU00012047.pdf)*
*(Early paper noticing absence of active volcanism in Banda Arc N of Timor, between Alor-Wetar Romme, where non-volcanic outer arc is closest to volcanic inner arc (In plate tectonic terms it can now be understood as locking of subduction zone after collision of Australian Plate and Banda Arc at Timor)*

Brouwer, H.A. (1938)- The tectonic evolution of the Lesser Sunda Islands near Australia. Quart. J. Geol. Soc. London 1349, p. 3-6. *(wrong reference?)*

Brouwer, H.A. (1940)- Geological and petrological investigations on alkali and calc-alkali rocks of the islands Adonara, Lomblen and Batoe Tara. In: H.A. Brouwer (ed.) Geological expedition of the University of Amsterdam to the Lesser Sunda Islands, II, Noord Hollandsche Uitgevers Mij, Amsterdam, p. 1-94.
*(On three volcanic islands of Banda Arc, East of Flores. All rocks are relatively young volcanics, dominated by andesites and basalts, overlain by uplifted coral reef terraces (up to ~250m elevation on Lomblen). Batu Tara volcano in Flores Sea North of main line of volcanoes and has potassic, leucite-bearing basanitic lavas)*

Brouwer, H.A. (1942)- Granodioritic intrusions and their metamorphic aureoles in the Young-Tertiary of Central Flores. In: H.A. Brouwer (ed.) Geological expedition of the University of Amsterdam to the Lesser Sunda Islands 4, Noord Hollandsche Publ. Co., Amsterdam, p. 291-317.
*(Granodioritic intrusions outcropping across Flores have distinct metamorphic contact aureoles in what looks like Neogene globigerinid-bearing sediments, and are therefore young intrusions)*

Brouwer, H.A. (1943)- Leuciethoudende en leucietvrije gesteenten van den Soromandi op het eiland Soembawa. Verslagen Nederl. Akademie Wetenschappen, Amsterdam, 52, p. 303-307.
*('Leucite-bearing and leucite-free rocks of Soromandi volcano on Sumbawa island'. Descriptions and chemical compositions of young volcanic rocks of Soromandi volcano near N coast of Sumbawa)*

Brouwer, H.A. (1944)- Over vulkanische gesteenten van Oost-Flores. Verhandelingen Geologisch-Mijnbouwkundig Genootschap Nederland Kol., Geol. Serie 14 (Tesch volume), p. 95-103.
*(On young volcanic rocks from East Flores'. Mainly young pyroxene andesites)*

Brouwer, H.A. (1954)- Evolution magmatique et tectonique des Petites Iles de la Sonde. C.R. Congres Geol. Int. (Int. Geological Congress), Algeria 1952, XV, XVII, p. 63-70.
*('Magmatic and tectonic evolution of the Lesser Sunda Islands')*

Charlton, T.R. (1997)- Backthrusting on the BIRPS deep seismic reflection profiles, Banda Arc, Indonesia, a response to changing slab inclination? J. Geol. Soc. London 154, p. 169-172.
*(BIRPS deep seismic profiles across Banda arc-continent collision complex indicate backthrusting in volcanic arc and between arc- forearc ridge. This differs from W Timor-Savu Sea and Tanimbar sectors of arc where backarc thrusting is absent and interarc region is extensional. Structural styles controlled by whether subducted slab is steepening or straightening through time. Straightening through buoyant post-collisional rebound induces extension normal to arc, steepening of slab is associated with arc-normal compression)*

Clode, C., J. Proffett, P. Mitchell & I. Munajat (1999)- Relationships of intrusion, wall-rock alteration and mineralisation in the Batu Hijau copper-gold porphyry deposit. In: G. Weber (ed.) Proc. PACRIM '99 Congress, Australasian Inst. of Mining and Metallurgy (AusIMM), Parkville, 4-99, p. 485-498.
*(Batu Hijau world-class island arc porphyry copper-gold deposit in SW corner of Sumbawa, related to quartz veining and wall rock alteration associated with multiple tonalite porphyry intrusions. Island underlain by Early Tertiary low-K calc-alkaline volcanics and intrusives)*

Crostella, A. (1977)- Geosynclines and plate tectonics in Banda Arcs, Eastern Indonesia. American Assoc. Petrol. Geol. (AAPG) Bull. 61, 12, p. 2063-2061.
*(Obsolete 'expanding earth/ geosynclinal' tectonic model for Timor, Banda Arc. See also discussion by Audley Charles et al. (1979))*

Curray, J.R., G.G. Shor, R.W. Raitt & M. Henry (1977)- Seismic refraction and reflection studies of crustal structure of the eastern Sunda and western Banda Arcs. J. Geophysical Research 82, 17, p. 2497-2489.
*(Seismic refraction profiles S of C Java and Bali, Flores, Banda and Arafura Seas and in Timor Trough. Outer ridge, along gravity minimum, consists primarily of sedimentary rocks, in N-dipping imbricate thrust sheets. Layer 2 jumps upward ~5 km under crest of ridge. From here to islands crust is probably oceanic but intermediate in thickness, probably thickened old oceanic crust and mantle trapped here by seaward jump in subduction zone in E Tertiary. N and E of Bali, behind volcanic arc, crustal structure intermediate between oceanic and continental. Farther E in Flores Basin thickness decreases, suggesting this is transitional edge of cratonization of Sunda Shelf, and typical thin oceanic crust is farther E in S Banda Sea)*

Darman, H. (2012)- Seismic expression of tectonic features in the Lesser Sunda Islands, Indonesia. Berita Sedimentologi 25, p. 16-25.
*(online at: www.iagi.or.id/fosi/files/2012/12/BS25-Lesser_Sunda_Final_small.pdf)*

Das, S. (2004)- Seismicity gaps and the shape of the seismic zone in the Banda Sea region from relocated hypocenters. J. Geophysical Research 109, B12303, p. 1-18.
*(online at: http://onlinelibrary.wiley.com/doi/10.1029/2004JB003192/epdf)*
*(>800 relocated earthquakes >50 km deep along Banda arc. Distribution non-uniform, with gaps in hypocenters along depth in most places. Seismic zone between 129-131°E and 100-200 km deep is widest along arc both in strike and downdip. This region, near highest arc curvature, has highest seismic activity and is only part of arc with continuous earthquakes down to >600 km. Very deep earthquakes under Sulawesi part of W-SW dipping Seram slab. In W-most part of Banda arc slab under downdip tension between 50-250 km, with deepest portion of slab under compression. From 128-131°E slab between 100-200 km under horizontal compression. Study supports "two-slab" model for Banda arc. Depth of Wadati-Benioff zone below volcanoes 60-100 km for five volcanoes between 128- 130°E and 150 km for 23 volcanoes between 118- 124°E)*

De Azeredo Leme, J.de & J. Bailim Pisarra (1962)- Notas sobre a geologia e a petrografia da ilha de Atauro (Timor portugues). In: Carrington da Costa Festschrift, p. 325-348.
*(Notes on the geology and petrography of Atauro island Portuguese Timor)'. Atauro N of Timor Leste, composed of volcanic rocks and terraces of emergent coral reefs)*

De Jong, J.D. (1941)- Geological investigations in West Wetar, Lirang and Solor (Eastern Lesser Soenda Islands). Thesis University of Amsterdam, p. 1-136. *(Unpublished)*
*(See also in H.A. Brouwer (ed.) Geological expedition of the University of Amsterdam to the Lesser Sunda Islands, III, p. 241-380. Reconnaissance of currently inactive volcanic islands of Sunda arc N of Timor. Wetar composed of lavas, breccias and tuffs with interbedded Globigerina marls, probably submarine formations of Neogene age. Facies, raised coral reefs and terrace at 820m suggests at least this amount of late uplift. Lirang Island different, with granodiorite and dacite, probably also Young Tertiary and possibly uplifted even more than Wetar. Solor multiple eroded volcanic complexes with pyroxene andesites and basalts, with raised coral reefs up to 180m)*

De Jong, J.D. (1942)- Hydrothermal metamorphism in the Lowo-Ria region, Central Flores. In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands 1937, 4, Noord Hollandsche Publ. Co., Amsterdam, p. 319-343.

De Neve, G.A. (1950)- Subsurface geology of Ampenan (West Lombok) and the Bay of Bima (East Sumbawa). De Ingenieur in Indonesie 5, 2, p. IV.17- IV.23.
*(Mainly on young sediments in water wells; nothing on older rocks)*

Dirk, M.H.J. (1994)- Petrologi dan geokimia unsur utama intrusi Wolowaru, Ende, Flores. J. Geologi Sumberdaya Mineral 4, 38, p. 26-36.
*('Petrology and major element geochemistry of the Wolowaru intrusion, Ende, Flores'. Wolowaru intrusion quartz diorite at exterior, granodiorite and granite in interior. High Al content and size ~15 x 10 km. Classified as subalkaline tholeiite of volcanic arc (with Late Miocene fission track ages; Saefudin 1995))*

Dirk, M.H.J. (1996)- Mekanisme penzonaan dan petrogenesis intrusi Wolowaru, Ende, Flores. J. Geologi Sumberdaya Mineral 6, 54, p. 12-16.
*('Mechanism of zoning and petrogenesis of the Wolowaru intrusion, Ende, Flores')*

Drescher, F. (1921)- Eruptivgesteine der Insel Flores. Dissertation Universitat Basel, Stein (Argau), p. 1-49.
*('Volcanic rocks from the island Flores'. Petrographic descriptions of dacites, andesites and basalts, collected by Pannekoek van Rheden in 1910-1911))*

Edwards, C.M.H. (1990)- Petrogenesis of tholeiitic, calc alkaline and alkaline volcanic rocks, Sunda Arc, Indonesia. Ph.D. Thesis, University of London, p. 1-373. *(Unpublished)*

Ehrat, H. (1928)- Geologische mijnbouwkundige onderzoekingen op Flores. Jaarboek Mijnwezen Nederlandsch Oost-Indie (1925), Verhandelingen II, p. 221-315.
*(Reconnaissance geological and mining investigations of Flores with 1:250k scale map of island. Mainly young andesitic volcanics. Oldest rocks exposed on NW Flores folded Miocene sediments, possibly 2000m thick, with locally thick Lepidocyclina limestone with interbedded volcanics and Globigerina marls)*

Ehrat, H. (1928)- Die Tiefengesteine der kleinen Sunda Inseln. Neues Jahrbuch Mineral. Geol. Palaont., Abhandl., Beilage Band 58, A, 3, p. 433-452.
*('The plutonic rocks of the Lesser Sunda islands'. Descriptions of granites, granodiorites, diorites, etc.)*

Elbert, J. (1911)- Meteorologische und geologische Untersuchungen auf der Insel Lombok. In: Die Sunda-Expedition des Vereins fur Geographie und Statistik zu Frankfurt am Main 1, p. 78-87 and 112-120.
*('Meteorological and geological investigations on Lombok Island'. On weather and Rinjani and Sembalun volcanic massifs. Lombok formations and mountain ranges similar to Java zones)*

Elbert, J. (1912)- Die geologisch-morphologischen Verhaltnisse der Insel Sumbawa. In: Die Sunda-Expedition des Vereins fur Geographie und Statistik zu Frankfurt am Main, Frankfurt, 2, p. 132-174.
*('The geological- morphological relationships of Sumbawa island'. Mainly description of young volcanoes and volcano ruins)*

Elburg, M.A., J.D. Foden, M.J. van Bergen & I. Zulkarnain (2005)- Australia and Indonesia in collision: geochemical sources of magmatism. J. Volcanology Geothermal Res. 140, p. 25-47.
*(Alor, Lirang, Wetar and Romang in extinct section of Sunda-Banda arc, where collision with Australia brought subduction to halt. Pb isotopes reflect mixing from subducting Australian crust)*

Elburg, M.A., V.S. Kamenetsky, J.D. Foden & A. Sobolev (2007)- The origin of medium-K ankaramitic arc magmas from Lombok (Sunda arc, Indonesia): mineral and melt inclusion evidence. Chemical Geology 240, p. 260-279.
*(Quaternary high-Ca, nepheline-normative ankaramitic basaltic lavas from Rinjani volcano, Lombok, with phenocrysts of clinopyroxene and olivine with inclusions of spinel. Melts probably formed from water-poor, clinopyroxene-rich mantle source)*

Elburg, M.A., M.J. van Bergen & J.D. Foden (2004)- Subducted upper and lower continental crust contributes to magmatism in the collision sector of the Sunda-Banda arc, Indonesia. Geology 32, 1, p. 41-44.
*(Pb isotopes in igneous rocks from Banda-Sunda arc show increase in 206Pb/204Pb ratios toward zone of collision with Australian continent, reflecting input of subducted upper-crustal material. Maximum values coincide with anomalously radiogenic 3He/4He ratios, earlier attributed to involvement of continental margin.*

*New interpretation does not call for involvement of ocean-island basalt (OIB) -type mantle or Australian subcontinental lithospheric mantle, as suggested previously)*

Elburg, M.A., M. van Bergen, J. Hoogewerff, J. Foden et al. (2002)- Geochemical trends across an arc-continent collision zone: magma sources and slab-wedge transfer processes below the Pantar Strait volcanoes, Indonesia. Geochimica Cosmochimica Acta 66, 15, p. 2771-2789.
*(Volcanoes in Pantar Strait (W part of extinct sector of E Sunda arc) across-arc variation in isotopic and trace element ratios best explained by modification of MORB-type source by subducted continental material (SCM). Frontal volcano highest proportion of fluid component. Source of rear-arc volcano influenced by partial melt of SCM that underwent previous dehydration event. Unique Pantar Strait volcanoes properties reflect magma generation where edge of Australian continent, rather than subducted sediment, contributes to magma source)*

Ely, K.S. (2006)- The rise of Atauro Island, Banda Arc, East Timor. AESC 2006, Melbourne, Abstract, 2p.
*(Quaternary coral uplifted to ~700m above sea level on Atauro. Brecciated dacite lavas dominate most of island; SW part of island contemporaneous basaltic andesite lavas. Volcanism ceased at ~3 Ma, linked to collision and end of subduction)*

Ely, K.S., M. Sandiford, M.L. Hawke, D. Phillips, M. Quigley & J.E. dos Reis (2011)- Evolution of Atauro Island: temporal constraints on subduction processes beneath the Wetar zone, Banda Arc. J. Asian Earth Sci. 41, 6, p. 477-493.
*(Atauro island in Banda Arc N of Timor. Bi-modal subaqueous volcanism with basaltic andesite and dacite-rhyolite continued until 3.3 Ma, followed by uplift of coral reef terraces to 700m elevation. Continuity of terraces at constant elevations reflects regional-scale uplift, most likely linked to slab detachment. Subduction of Australian lithosphere until near 3.3 Ma consistent with extent of Wetar seismic gap to depth of 350 km, suggesting slab breakoff started at 4 Ma)*

Esenwein, P. (1930)- Petrographische Untersuchungen an Gesteinen von Paloeweh. Vulkanologische Seismologische Mededeelingen, Dienst Mijnbouw Nederlandsch-Indie, Bandung, 11, p.
*('Petrographic investigations of rocks from Paluweh', N of Flores. Island with active Rokatenda volcano)*

Eva, C., M. Cattaneo & F. Merlanti (1988)- Seismotectonics of the central segment of the Indonesian Arc. Tectonophysics 146, 1-4, p. 241-259.
*(On seismicity between 110° and 126° (E Java- W Timor). Sumbawa-Flores-Wetar sector different from adjacent sectors)*

Farmer, F. (2011)- Wetar copper project: a bugs life- 5 million years and counting? Proc. Joint 36th HAGI and 40th IAGI Ann. Conv. Exh., Makassar, 14p.
*(Wetar comprises Miocene-Pliocene lavas (incl. pillow basalts), overlain by Pliocene deep marine Globigerina limestone and Quaternary dacitic-andesitic volcanics. Hydrothermally altered andesite lavas and basalts are host to economic mineralization. Deposits at Kali Kuning, Lerokis and Meron characterized by Au-Ag bearing unconsolidated barite sands onlapping pyritic massive sulphide mounds with Cu-Zn-Pb)*

Ferneyhough, A.B. & I.A. Qarana (1999)- Case history study over the Batu Hijau copper-gold porphyry in SW Sumbawa, Indonesia. SEG Technical Program, 1999, 15, 1, p. 1159-1162. *(Extended Abstract)*
*(History of large 1990 Batu Hijau copper-gold porphyry discovery on SW Sumbawa by Newmont in 1990. Typical island arc porphyry deposit, hosted within tonalite intrusive complex in diorite and andesitic metavolcanics wallrock)*

Fichtner, A., M. De Wit & M. van Bergen (2010)- Subduction of continental lithosphere in the Banda Sea region: combining evidence from full waveform tomography and isotope ratios. Earth Planetary Sci. Letters 297, p. 405-412
*(Subduction of old continental lithosphere to >100 km under Banda arc suggested by tomographic images and isotope signatures in arc volcanics. Late Jurassic ocean lithosphere N of N Australian craton was capable of entraining large volumes of continental lithosphere. Timor tomographic images indicate island not directly*

*above N margin of N Australian craton. Possible explanation involves delamination within continental crust, separating upper from lower crustal units, consistent with massive accretionary complex on Timor island, with evidence from Pb isotopes for lower-crust involvement in arc volcanism)*

Fiorentini, M.L. & S.L. Garwin (2010)- Evidence of a mantle contribution in the genesis of magmatic rocks from the Neogene Batu Hijau district in the Sunda Arc, South Western Sumbawa, Indonesia. Contrib. Mineralogy Petrology 159, p. 819-837.
*(Sumbawa island is E Miocene- Holocene volcanic arc built on oceanic crust. Low-K calc-alkaline magmatic suite of Sunda arc in Batu Hijau district with juvenile signature and minimal involvement of sediment component in arc petrogenesis. Arc-transverse fault system facilitated rise of mantle-derived melts above kink or tear in subducting Indian Ocean Plate under Sunda arc. De-hydrogenation of tonalite plutons may have been crucial to genesis of Cu-Au porphyry mineralization and development of Pliocene Batu Hijau deposit)*

Franchino, A., E. Bellini & A. Brizio (1988)- Geological notes on the age of the limestones of the Island of Lombok. Indonesia. Memorie Scienze Geol., Padova, 40, p. 335-368.
*(Lombok mainly composed of Tertiary volcanics, in S part associated with limestones and marls. At Sekotong Barang on SW coast isolated hills of Late Oligocene limestone (Te1-4; with Spiroclypeus, Eulepidina, etc.). Central southern hills limestones with Late Oligocene- E Miocene (Te4-Te5; Miogypsinoides) and M Miocene ages (Tf1; Lepidocyclina, Miogypsina) (limestone ages on Lombok partly older than Wonosari Limestone of S Java and Nusa Dua/ S Bali?; JTvG))*

Garwin, S.L. (2000)- The setting, geometry and timing of intrusion-related hydrothermal systems in the vicinity of the Batu Hijau porphyry copper-gold deposit, Sumbawa, Indonesia. Ph.D. Thesis, University of Western Australia, Nedlands, p. 1-320. *(Unpublished)*
*(~1500m thick E-M Miocene low-K calc-alkaline andesitic volcanoclastics of Sunda-Banda arc, with thin limestone interbeds, and cut by several phases of Mio-Pliocene intrusions. Sumbawa segment of arc overlies oceanic crust. Felsic magmatism and related hydrothermal systems between ~7.1- 3.7 Ma probably related to collision with microcontinent or leading edge of Australian Shelf and Banda Arc near Timor. Subduction of buoyant Roo Rise oceanic plateau, S of Sumbawa, inferred to have caused kink or tear in downgoing slab, which enhanced delivery of mantle-derived melts to overlying arc)*

Garwin, S. (2002)- The geologic setting of intrusion-related hydrothermal systems near the Batu Hijau porphyry copper-gold deposit, Sumbawa, Indonesia. In: R.J. Goldfarb & R.L. Nielsen (eds.) Global Exploration in the 21st Century, Colorado, Soc. Economic Geol. (SEG), Spec. Publ. 9, p. 333-366.

Garwin, S. (2012)- District-scale expression of intrusion-related hydrothermal systems near the Batu Hijau porphyry copper-gold deposit, Sumbawa, Indonesia. In: N.I. Basuki (ed.) Proc. Banda and Eastern Sunda arcs, Indonesian Soc. Econ. Geol. (MGEI) Ann. Conv. 2012, Malang, p. 133-158.

Garwin, S.L. & Herryansyah (1992)- Geological setting, style and exploration of gold-silver mineralisation on Romang Island, Moluccas province, East Indonesia. In: M. Simatupang & N. Wahju Beni (eds.) Indonesian mineral development 1992, Indonesian Mining Association, p. 258-274.

Gerteisen, C.N. (1998)- Volcanic stratigraphy of the Batu Hijau porphyry copper-gold deposit, southwest Sumbawa, Indonesia. M.Sc. Thesis, Curtin University, Western Australia School of Mining, Kalgoorlie, p. 1-58. *(Unpublished)*
*(Batu Hijau porphyry copper-gold deposit in SW Sumbawa in Sunda-Banda volcanic arc, but also affected by S-dipping subduction N of Sumbawa (more recent arc polarity reversal), a configuration conducive to porphyry type mineralization. Copper-gold mineralization associated with tonalite intrusive, which intruded older quartz diorite and low K, calc-alkaline andesites. Volcanic rocks generally SW dipping, with 4 major units, formed on flanks of stratovolcano: (1) volcaniclastic sandstone and breccia/conglomerate; (2) volcaniclastic breccia; (3) volcaniclastic mudstone, sandstone, breccia; (4) basal hypabyssal andesite)*

Guzman-Speziale, M. & J.F. Ni (1996)- Seismicity and active tectonics of the Western Sunda Arc. In: A. Yin & M. Harrison (eds.) The tectonic evolution of Asia, Cambridge University Press, p. 63-84.

Halbach, P., L. Sarmili, M. Karg, B. Procejus, B. Melchert, J. Post, E. Rahders & Y. Haryadi (2003)- The break-up of a submarine volcano in the Flores-Wetar Basin (Indonesia); implications for hydrothermal mineral deposition. InterRidge News 12, 1, p. 18-22.
*(online at: https://www.interridge.org/files/interridge/IR_news_12a.pdf)*
*(BANDAMIN I cruise in 2001 examined SE trending submarine ridge in tectonically active Flores-Wetar Basin, extending to Komba (Batu Tara) volcano. Seamount cross-cut by left-lateral NW-SE faults, with intervening z-shaped plain (pull-apart structure). Rock samples K-rich porphyritic volcanics (trachyandesites, trachydacites), locally impregnated with sulphides (epithermal low-sulphidation metal deposits))*

Halbach, P., L. Sarmili, B. Procejus, M. Karg, B. Melchert, J. Post et al. (2003)- Tectonics of the ñKomba-ridgeò area in the Flores-Wetar Basin (Indonesia) and associated hydrothermal mineralization of volcanic rocks. Bull. Marine Geol. (MGI, Bandung) 18, 3, p. 1-27.
*(In Flores-Wetar basin N of Lomblen NW-SE trending submarine hills extending to Komba Island (Batu Tara). Hills cut by several NW-SE faults. Samples mainly porphyritic K-rich basaltic trachyandesite and trachydacite. With epithermal-type mineralization halo)*

Hantoro, W.S. P.A. Pirazzoli, C. Jouannic, H. Faure, C.T. Hoang, U. Radtke, C. Causse, M. Borel Best, R. Lafont, S. Bieda & K. Lambeck (1994)- Quaternary uplifted coral reef terraces on Alor Island, East Indonesia. Coral Reefs 13, 4, p. 215-223.
*(Alor Island in Banda Arc N of Timor has six major coral reef terraces, up to 580m in altitude, up to 500 ka old. Radiometric dates of terraces correspond to Holocene oxygen-isotope stages 5c, 5e and 7. Mean rate of uplift 1.0-1.2 mm/y. Extrapolation to whole sequence of terraces reveals good correlation between major terraces and interglacial stages corresponding to up to oxygen isotope stage 13)*

Harahap, B.H., H.Z. Abidin, H. Utoyo, D. Djumhana & R. Yuniarni (2014)- Prospect of mineral deposits in the Central Flores Island, Eastern Indonesia. Proc. 43rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, PIT IAGI 2014-068, 22p.
*(Sikka and Ende Regencies of C Flores with unexploited gold, base metal, iron ore and manganese deposits. With potential for commercial mineral deposits in Miocene and younger volcanics, including epithermal, porphyry, skarn and volcanogenic massive sulfide of Kuroko type)*

Harahap, B.H., H.Z. Abidin, H. Utoyo, D. Djumhana & R. Yuniarni (2015)- Prospect of mineral deposits in the Central Flores Island, Eastern Indonesia. J. Geologi Sumberdaya Mineral 16, 1, p. 1-13.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/46/48)*
*(Same paper as Harahap et al. 2014, above)*

Heering, J. (1942)- Geological investigations in East Wetar, Alor and Poera Besar. In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands 4, Noord Hollandsche Publ. Co., Amsterdam, p. 1-129.
*(Geological survey of islands of Banda Arc, North of Timor)*

Hendaryono (1998)- Contribution a lôetude geologique de lôile de Flores. Doct. Thesis Universite de Savoie, Chambery, p. 1-200. *(Unpublished)*
*(Abstract at http://edytem.univ-savoie.fr/archives/lgham/hendaryono-r-eng.html)*
*('Contribution to the geological study of Flores island'. Flores has 13 active volcanoes. Two cycles of volcanism. Oldest exposed lavas Late Oligocene (radiometric ages 25.7-27.7 Ma), 17 other lavas with M-L Miocene ages (16-8.4 Ma). Latest Miocene- Quaternary calc-alkaline andesites-dacites (6.7-1.2 Ma) in S coastal areas. Associated sediments with reworked microfaunas. From base to top: turbiditic tuffaceous M Miocene Nangapanda Fm, M-U Miocene Bari Fm reef limestone, U Miocene Laka Fm chalky tuffaceous beds with pumice)*

Hendaryono, J.P. Rampnoux, H. Bellon, R.C. Maury, C.I. Abdullah & R. Soeria-Atmadja (2001)- New data on the geology and geodynamics of Flores Island. Eastern Indonesia. Proc. 30th IAGI and 10th GEOSEA Reg. Congress, Yogyakarta, p. 195-199. *(Extended Abstract)*

Herman, D.Z. (2008)- Mineralisasi pada batuan induk batugamping di daerah Lepadi, Dompu, Nusa Tenggara Barat. J. Geologi Indonesia 3, 3, p. 175-182.
*(online at: www.bgl.esdm.go.id/publication/index.php/dir/article_detail/230)*
*('Mineralization in limestone rocks near Lepadi, Dompu' (Sumbawa). Limestones (supposedly Miocene age and looking like pelagic biomicrite and associated with Miocene volcanics) with hydrothermal quartz veins with galena and other metallic minerals)*

Herrington, R.J., P.M. Scotney, S. Roberts, A.J. Boyce & D. Harrison (2011)- Temporal association of arc-continent collision, progressive magma contamination in arc volcanism and formation of gold-rich massive sulphide deposits on Wetar Island (Banda arc). Gondwana Research 19, 3, p. 583-593.
*(Sr, O and He analyses of volcanic rocks and sulphides- sulphates from mineralized rocks on Wetar indicate increased continental contamination in Pliocene during distinct magmatic events between 5-4 Ma, and at 2.4 Ma when 87Sr/86Sr ratios in unaltered lavas increase from 0.707484 to extreme radiogenic values of 0.711656. (highest crustal assimilation in region). Magmatic events of 5- 4 Ma with volcanogenic massive sulphide/ gold-barite deposits near N coast of Wetar. Event at 2.4 Ma (coincident with arrival of Australian continental margin at subduction zone along Banda arc))*

Hoschke, T. (2012)- Geophysics of the Elang Cu-Au porphyry deposit, Indonesia, and comparison with other Cu-Au porphyry systems. In: 22nd ASEG Int. Geophys. Conf. Exhib., Brisbane 2012, p. 1-3. *(Extended Abstract)*
*(online at: http://www.publish.csiro.au/ex/pdf/ASEG2012ab178)*
*(Elang large porphyry Cu-Au deposit ~70 km E of Batu Hijau on SE Sumbawa. Associated with tonalite porphyry intrusions hosted by andesitic volcanics. Elang typical of number of Cu-Au porphyry systems where magnetite associated with mineralisation and produces strong magnetic anomaly)*

Hunerwadel, F.M. (1921)- Die Eruptivgesteine von Nord-Mittel Soembawa (Niederlandisch-Indien). Inaugural Dissertation Universitat Basel, p. 1-28.
*('The volcanic rocks of North-Central Sumbawa'. Petrographic descriptions of andesites, dacites, basalts collected by Pannekoek van Rheden)*

Hutabarat, J., A.D. Haryanto & L. Sarmili (2006)- Petrografi batuan beku volkanik bawah laut kompleks Gunung Komba, Laut Flores, Indonesia. Bull. Scientific Contr. (UNPAD) 4, 1, p. 62-67.
*(online at: http://jurnal.unpad.ac.id/bsc/article/viewFile/8115/3691)*
*('Petrography of submarine volcanic rocks of the Mount Komba complex, Flores Sea, Indonesia'. Dredge samples from water depths 130-900m of Gunung Komba submarine volcano complex, NE of Flores, composed of andesite-basaltic lava flows. Varying degrees of propylitic or sericitic alteration)*

Idrus, A. (2006)- Petrology, geochemistry, and compositional changes of diagnostic hydrothermal minerals within the Batu Hijau porphyry copper-gold deposit, Sumbawa Island, Indonesia: Ph.D. Thesis RWTH Aachen University, p. 1-351. *(Unpublished)*

Idrus, A. (2006)- P-T conditions and oxygen fugacity of the intrusion emplacement at the Batu Hijau porphyry copper gold deposit, Sumbawa Island: a constraint from geothermobarometric data. Media Teknik (UGM) 28, 2, p. 11-18.
*(Large Batu Hijau porphyry copper-gold deposit in SW Sumbawa. Tonalite porphyries emplaced at~5.5 km depth (764°C, 1.5 kbar). Hornblende and plagioclase crystallized at 540°C. Uplift rate since 3.7 Ma 1.2 mm/yr)*

Idrus, A. (2008)- Transport and deposition of copper and gold in porphyry deposit: a constraint from microthermometry and hydrothermal biotite chemistry. Media Teknik (UGM) 30, 3, p. 276-283.
*(On deposition of copper and gold in Batu Hijau porphyry deposit, SW Sumbawa)*

*(online at: http://isjd.pdii.lipi.go.id/admin/jurnal/3308276283.pdf)*

Idrus, A. (2018)- Petrography and mineral chemistry of magmatic and hydrothermal biotite in porphyry copper-gold deposits: a tool for understanding mineralizing fluid compositional changes during alteration processes. Indonesian J. Geoscience 5, 1, p. 47-64.
*(online at: https://ijog.geologi.esdm.go.id/index.php/IJOG/article/view/402/254)*
*(On magmatic and hydrothermal biotite in Batu Hijau porphyry copper-gold deposit, Sumbawa)*

Idrus, A. (2018)- Halogen chemistry of hydrothermal micas: a possible geochemical tool in vectoring to ore for porphyry copper-gold deposit. J. Geoscience Engineering Environm. Technol. (JGEET) 3, 1, p. 30-38.
*(online at: journal.uir.ac.id/index.php/JGEET/article/download/1022/797/)*
*(On hydrothermal micas in alteration zone of Batu Hijau porphyry copper-gold deposit, Sumbawa)*

Idrus, A., J. Kolb & F.M. Meyer (2006)- Physicochemistry and evolution of ore-related hydrothermal fluids at the Batu Hijau porphyry copper-gold deposit: a constraint from mineral composition and microthermometry. Proc. 35th Ann. Conv. Indon. Assoc. Geol. (IAGI), Pekanbaru, 15p.
*(Changes in mineral chemistry in Batu Hijau porhyry copper deposit document progressive chemical fluid evolution, with predominance of magma-derived fluids in central deposit and increasing degree of mixing with less saline, cool meteoric water from towards the distal deposits)*

Idrus, A., J. Kolb & F.M. Meyer (2007)- Chemical composition of rock-forming minerals in copper-gold-bearing tonalite porphyry intrusions at the Batu Hijau deposit, Sumbawa Island, Indonesia: implications for crystallisation conditions and fluorine-chlorine fugacity. Resource Geology 57, 2, p. 102-113.
*(online at: http://onlinelibrary.wiley.com/doi/10.1111/j.1751-3928.2007.00010.x/epdf)*
*(Batu Hijau copper-gold porphyry deposit on Sumbawa related to emplacement of multiple stages of Pliocene (~3.7 Ma) tonalite porphyries into Late Oligocene- M Miocene andesitic volcanics. Tonalites emplaced at ~764°C and hornblende and plagioclase phenocrysts crystallized at depths of ~5.5 km)*

Idrus, A., J. Kolb, F.M. Meyer, J. Arif, D. Setyandhaka & S. Kepli (2009)- A preliminary study on skarn-related calcsilicate rocks associated with the Batu Hijau porphyry copper-gold deposit, Sumbawa Island, Indonesia. Resource Geology 59, 3, p. 295-306.
*(online at: http://onlinelibrary.wiley.com/doi/10.1111/j.1751-3928.2009.00097.x/epdf)*
*(Deep drilling at Batu Hijau porphyry Cu-Au deposit on Sumbawa indicates several intervals of calcic-exoskarn near contact with copper-gold-bearing tonalite porphyries. Massive magnetite-chalcopyrite-pyrite assemblages formed by contact metasomatism of andesitic volcaniclastic rocks)*

Idrus, A., F.M. Meyer & J. Kolb (2009)- Mineralogy, lithogeochemistry and elemental mass balance of the hydrothermal alteration associated with the gold-rich Batu Hijau porphyry copper deposit, Sumbawa Island, Indonesia. Resource Geology 59, 3, p. 215-230.
*(online at: http://onlinelibrary.wiley.com/doi/10.1111/j.1751-3928.2009.00092.x/epdf)*
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Imai, A. & Y. Nagai (2009)- Fluid inclusion study and opaque mineral assemblage at the deep and shallow part of the Batu Hijau porphyry Cu-Au deposit, Sumbawa, Indonesia. Resource Geology 59, 3, p. 231-243.
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*(Batu Hijau mine on SW Sumbawa is only porphyry type deposit in production in Sunda-Banda arc, Indonesia. Sumbawa island formed by E Miocene- Recent volcanism on ~14-23 km thick oceanic crust. Quartz veins classified into four types. Bornite and chalcopyrite inclusions in coarse magnetite grains in quartz veins indicates hydrothermal activity initially deposited magnetite and copper sulfides at depth)*

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*(Samples from 500-600m thick, S-dipping Selatan Fm limestones of southern peninsula of Bali, with Lepidocyclina (looks like radiate type; JTvG), Cycloclypeus and some planktonic foraminifera including Orbulina. Good evidence for Middle-Late Miocene age)*

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*(Elang deposit is large Cu-Au orebody 60 km E of Batu Hijau mine on S Sumbawa. Discovered in 1991. Multiple diorite-tonalite intrusive complexes in andesitic volcanic unit. Resources 1476 Mt at 0.34% copper, 0.35 g/t gold and 1.0 g/t silver. Mineralization mainly chalcopyrite and minor bornite, related to multiple tonalite porphyry intrusions in andesitic volcanics)*

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Khant, W., I.W. Warmada, A. Idrus, L.D. Setijadji & K. Watanabe (2013)- Host rocksô geochemistry and mineralization potential of polymetallic epithermal quartz veins at Soripesa Prospect Area, Sumbawa Island, Indonesia. J. Southeast Asian Applied Geol. (UGM) 5, 1, p. 30-40.
*(online at: http://geologic-risk.ft.ugm.ac.id/fresh/jsaag/vol-5/no-1/jsaag05-art04-WK.pdf)*
*(Soripesa prospect in Bima region, E Sumbawa, with five main polymetallic epithermal quartz veins. Dominant lithology andesitic- dacitic lithic-crystal tuff and bedded limestone. E Sumbawa underlain by Lower Miocene andesitic- basaltic lava and breccia, with intercalations of tuff and limestone, overlain by M Miocene dacitic tuff and bedded limestone. Units intruded by numerous small-medium bodies in M-U Miocene. Formation of quartz veining, alteration and mineralization at Soripesa related to N-S faulting. Host rocks of veins formed in volcanic arc basalt and island arc basalt tectonic settings)*

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*(Western Flores Island map. Among oldest formations is M Miocene Nangapanda Fm, >1000m thick, mainly pelagic clastics at base, sands and limestones towards top (~16.2-10.2 Ma; Muraoka et al. 2002). Unconformably overlain by Late Miocene- Pliocene Waihekang tuffaceous sediments and Wangka Andesite (K-Ar ages 4.13, 2.96 Ma; Muraoka et al. 2002)*

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*Anomaly contour map (close to 150m bathymetric contour) indicates E-W trending boundary between SE passive margin of Sunda Shelf in N and W-most tip of Flores backarc basin in S)*

Kusnida, D. (2001)- Results of a marine geophysical survey in the Bali basin, Indonesia. In: Proc. CCOP 37th Ann. Sess. Bangkok 2000, 2, Techn. Repts., p. 122-128.
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*(Lombok Island oldest rocks along S coast, composed of latest Oligocene- E Miocene Pengulung Fm volcanic breccias and lavas, overlain by Miocene Ekas Fm limestone and with Miocene dacite/basaltic intrusives (= 'Old Andesites'; continuation of Southern Mountains of Java - S Bali). N part of island mainly covered by Late Pliocene- Recent volcanics from Rinjani volcano complex)*

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*(E Sunda arc major porphyry metallogenic belt (Tumpangpitu/ Tujuh Bukit Au-Ag-Cu deposit in E Java, Batu Hijau and Elang on Sumbawa). Porphyry mineralization confined to E segment (E Java to Sumbawa), where Roo Rise subducting beneath island arc. Subeconomic porphyry prospects at Selogiri, Ciemas, Cihurip with low sulfidation epithermal deposits (Pongkor, Cikotok, Cibaliung, Cikondang, Arinem) along W segment of Sunda arc, developed on thick continental crust on S Sundaland margin,d associated with 'normal' Indian oceanic*

*crust subduction. Porphyry deposits typically with large lithocaps (>20 km2), with high sulfidation epithermal gold-silver veins within lithocaps at Elang, Selodong, Brambang and Tumpangpitu)*

Maryono, A. & R. Harrison (2013)- Porphyry copper-gold mineralization styles along the Eastern Sunda magmatic Arc, Indonesia. In: Proc. Symp. East Asia: Geology, exploration technologies and mines, Bali 2013, Australian Inst. Geoscient., Bull. 57, p. 58-59. *(Extended Abstract)*
*(E Sunda magmatic arc with three world class porphyry Cu-Au deposits: Batu Hijau, Elang, Tujuh Bukit. All mineral deposits tied to magmatic arc intrusions of Late Miocene- Pliocene age: 3.7 Ma at Batu Hijau, 2.7 Ma at Elang, 7.5 Ma at Selodong, 2.5 Ma at Pongkor and 3.0 Ma at Arinem)*

Maryono, A., R.L. Harrison, D.R. Cooke, I. Rompo & T.G. Hoschke (2018)- Tectonics and geology of porphyry Cu-Au deposits along the eastern Sunda magmatic arc, Indonesia. Economic Geology 113, 1, p. 7-38.
*(E Sunda arc hosts three premier porphyry Cu-Au deposits between E Java and Sumbawa: Batu Hijau, Elang, and Tumpangpitu. Built on island-arc crust where Roo Rise is being subducted. Along W segment of arc (Wn Java), major epithermal deposits associated with poorly endowed porphyry prospects, on thick continental crust of S margin of Sundaland, associated with subduction of thin Indian oceanic crust. Porphyry Cu-Au deposits associated with small, nested, dioritic-tonalitic intrusive complexes, with mineralization during three main events. Large (>20 km2) lithocaps with high-sulfidation epithermal systems. Porphyry deposits formed between 2-2.5 Ma, suggesting important change in metallogeny of arc at this time)*

Maryono, A., R. Harrison, I. Rompo, E. Priowasono & M. Norris (2016)- Successful techniques in exploring the lithocap environment of the Sunda magmatic arc, Indonesia. In: Proc. 8th Ann. Conv. Masyarakat Geologi Ekonomi Indonesia (MGEI), Bandung, p. 7-13.
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*(Elang porhyry copper-gold mineralization of SW Sumbawa, 60km E of similar Batu Hijau Cu-Au deposit. First discovered in 1991. Wall rocks Late Oligocene- M Miocene andesitic volcanics, with numerous M Miocene-Pliocene intrusions. Mineralization associated with Pliocene (2.7Ma) tonalite intrusions. Central Cu-Au+Mo zone, proximal As-Ag zone, distal Pb-Zn zone)*

Maryono, A., L.D. Setijadji, J. Arif, R. Harrison & E. Soeriaatmadja (2012)- Gold, silver and copper metallogeny of the eastern Sunda magmatic arc, Indonesia. In: N.I. Basuki (ed.) Proc. Banda and Eastern Sunda arcs, Indonesian Soc. Econ. Geol. (MGEI) Ann. Conv., Malang 2012, p. 23-38.
*(Same as Maryono et al. 2014)*

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*(Same as Maryono et al. 2012) (Recent discovery of large porphyry gold-silver-copper deposit at Tujuh Bukit Project in Banyuwangy Regency of E Java. E astSunda Magmatic Arc built on thin island arc crust, bounded by margin of Sundaland to W and by Australian continental crust to E. Five different ages of Cenozoic magmatic belts. Overwhelming number of gold, silver, and copper deposits associated with Late Miocene- Pliocene intrusions. E Sunda magmatic arc dominated by gold, silver, and copper, in porphyry and epithermal deposits. Mineralization styles similar to those in typical island arc settings, e.g. the Philippines)*

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*island arc, showing back-arc thrusting N of Bali, dipping 15 -20° S. Back arc thrusting extends to 30km depth below S coast of Bali island)*

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McBride, J.H. & D.E. Karig (1987)- Crustal structure of the outer Banda Arc; new free-air gravity evidence. Tectonophysics 140, p. 265-273.
*(Gravity analysis of Timor- Sumba region. Mass deficit below Savu Sea may be subducted lighter continental crust, downward flexing of upper crustal plate in forearc area or anomalous low-density upper mantle. Gravity high over N Sumba Ridge in Savu Sea may be E-M Tertiary volcanic arc between present arc and Timor. Crust under N Savu Basin appears nearly oceanic, but thickens beneath modern arc)*

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*(E Sunda arc and S Banda arc and forearc respond to collision by shortening in direction of convergence, elongating normal to convergence, and thrusting over back arc basin. Shallow thrust and strike-slip earthquakes beneath Banda Basin demonstrate deformation in back arc accommodating some of N-ward motion of Australia. N-S shortening of upper plate near Timor ~20% of predicted Australia- SE Asia convergence. Strike-slip faulting in Banda Basin results in E-ward motion of Banda arc, with thrusting at Aru Trough. Weber forearc basin on subducting lithosphere, without intervening asthenosphere, so subsides in response to sinking of subducting lithosphere. Birds Head subducts beneath Seram, is decoupled from Australian plate in W New Guinea and probably moves W or SW with respect to Australia)*

McCaffrey, R. (1989)- Seismological constraints and speculations on Banda Arc tectonics. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Geology and geophysics of the Banda Arc and adjacent areas, Jakarta 1987, Netherlands J. Sea Research 24, 2/3, p. 141-152.
*(Shallow earthquakes show collision of Australian continent- Banda Arc shortens overriding Indonesian plate in N-S and elongates it in E-W direction by strike-slip and thrust faulting. Two plates subduct beneath Banda Arc: Australia-Indian Ocean plate N-ward and Birds Head SW-ward. Bird's Head subducted lithosphere beneath Seram Trough now reaches 300 km depth. At surface decoupling between Australia and Bird's Head probably by left-lateral strike slip at Tarera-Aiduna fault zone and convergence in New Guinea fold-and-thrust belt. Seismic quiescence at 50-380 km beneath Timor may result from removal of part of Australian continental crust prior to subduction of lower lithosphere; crust stacked up to form Timor Island)*

McCaffrey, R., P. Molnar, W. Roecker & Y.S. Joyodiwiryo (1985)- Microearthquake seismicity and fault plane solutions related to arc-continent collision in the eastern Sunda arc. J. Geophysical Research 90, B6, p. 4511-4528.
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*(online at: http://web.pdx.edu/~mccaf/pubs/mccaffrey_flores_jgr_1984.pdf)*
*(1978 earthquake N of Flores first seismic evidence for active backarc thrusting behind E Sunda arc)*

McCaffrey, R. & J. Nabelek (1986)- Seismological evidence for shallow thrusting North of the Timor Trough. Geophysical J. Int. 85, 2, p. 365-382.
*(online at: https://academic.oup.com/gji/article/85/2/365/727679)*
*(In E Sunda Arc infrequent, large earthquakes near volcanic arc within upper plate rather than as interplate events under forearc. 1977 event E of Alor and N of C Timor indicates nearly pure thrust mechanism at depth of 10 km, along S- dipping plane, probably related to Wetar thrust zone at S margin of Banda Sea backarc basin. Suggest most of plates convergence accommodated by thrusting of Banda Sea marginal basin S-ward beneath Sunda arc. Present geometry represents initial stage of reversal of arc polarity)*

McCaffrey, R. & J. Nabelek (1987)- Earthquakes, gravity, and the origin of the Bali Basin: an example of a nascent continental fold-and-thrust belt. J. Geophysical Research 92, B1, p. 441-459.
*(Bali Basin is downwarp in Sunda Shelf crust produced by thrusting along Flores back-arc zone. Early foreland basin flanked by Tertiary Java Basin to W and oceanic Flores Basin to E)*

McKechnie, K.R., I. Saracik & D.M. Sewell (1992)- Development of the Lerokis gold-silver-barite mine in Indonesia; challenges of a unique project. In: M. Simatupang & B.N. Wahju (eds.) Indonesian mineral development 1992, Indonesian Mining Association, p. 404-414.
*(On discovery and development of Wetar Island barite deposits (See also Scotney et al. 2014))*

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*(Soa Basin in C Flores with 16 late E to early M Pleistocene terrestrial fossil localities with insular endemic faunas. Remains of 6 bird species birds from Mata Menge and Bo'a Leza include a swan (Cygnus sp.) and eagle owl (Bubo sp.), indicative of open environment with open freshwater and nearby grasslands)*

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*(online at: www.iagi.or.id/fosi/files/2012/12/BS25-Lesser_Sunda_Final_small.pdf)*
*(Review of tectonic setting of Lesser Sunda islands, East of Java)*

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*(Batu Hijau porphyry in SW Sumbawa world-class porphyry Cu deposit in island arc setting. Mineralisation hosted in tonalite intrusive complex, and diorite and metavolcanic wall rocks. Not much on regional geology)*

Metrich, C., M. Vidal, J.C. Komorowski, I. Pratomo. A. Michel, N. Kartadinata, O. Prambada, H. Rachmat & Surono (2017)- New Insights into magma differentiation and storage in Holocene crustal reservoirs of the Lesser Sunda Arc: the Rinjani-Samalas volcanic complex (Lombok, Indonesia). J. Petrology 58, 11, p. 2257ï 2284.
*(Mineralogy and chemistry of magmas erupted over last ~12 kyr at Rinjani-Samalas volcanic complex on Lombok. Calc-alkaline series, moderately rich in K2O. Pre-caldera stage bimodality of magmas (basalt-trachydacite); post-caldera magmatism basaltic andesites. Possibly result of mixing between basalt and trachydacite melts. AD 1257 caldera-forming eruption large volume of trachydacitic magma)*

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*(http://onlinelibrary.wiley.com/doi/10.1029/2008EO060001/pdf)*
*(Sunda-Banda part of Indian Ocean subduction zone has received less attention from the earthquake studies than the Sumatra segment, but may be just a hazardous. Overriding lithosphere is continental along Sumatra and Java, but oceanic crust farther E, along Lombok and Sumbawa)*

Muraoka, H. & A. Nasution (2004)- En echelon volcanic arc as a key to recognize mantle diapirs in the Lesser Sunda Arc, Eastern Indonesia. J. Geothermal Res. Soc. Japan 26, 3, p. 237-249.
*(online at: www.journalarchive.jst.go.jp/...) (In Japanese with English summary)*
*(Flores to Alor segment of Lesser Sunda arc characterized by en echelon shaped volcanic islands, reflecting NNW-SSE left-lateral shear between N-moving Australian continent in East and relatively fixed Sundaland in West. Each element of 'en echelon volcanic islands is elongated dome consisting of anticline of volcanic basement units and rows of young volcanoes. Coexistence of both structures in same area can be explained when mantle diapirs are assumed)*

Muraoka, H., A. Nasution, J. Simanjuntak, S. Dwipa, M. Takahashi, H. Takahashi, K. Matsuda & Y. Sueyoshi (2005)- Geology and geothermal systems in the Bajawa volcanic rift zone, Flores, Eastern Indonesia. In: Proc. World Geothermal Congress 2005, Antalya, Turkey, p. 1-13.
*(online at: www.geothermal-energy.org/pdf/IGAstandard/WGC/2005/0629.pdf)*
*(Setting of Bajawa geothermal field, Flores, characterized by NNW-SSE left-lateral shear between N-moving Australia and rel. stable Sundaland in W, creating inner Lesser Sunda volcanic arc of en echelon volcanic islands. En echelon elements are ENE-WSW trending elongated domes, ~90 x 30 km, composed of culmination of cluster of young volcanoes. Oldest exposed unit M Miocene (~16.2-10.2 Ma) Nangapanda Fm submarine clastics, chert, limestone and pumice tuff. After hiatus subaerial volcanism of Wangka Andesite and Maumbawa Basalt at 4-3 Ma. Bajawa volcanic rift zone 60 monogenetic breccia cone volcanoes)*

Muraoka, H., A. Nasution, M. Urai, M. Takahashi & I. Takashima (2002)- Geochemistry of volcanic rocks in the Bajawa geothermal field, central Flores, Indonesia. Bull. Geol. Survey Japan 53, p. 147-159.
*(online at: https://www.jstage.jst.go.jp/article/bullgsj/53/2-3/53_147/_pdf)*
*(Volcanic rocks from Bajawa geothermal field, C Flores, include common tholeiitic basalt to dacite, but Bajawa rift zone volcanics calc-alkaline andesite)*

Muraoka, H., A. Nasution, M. Urai, M. Takahashi, I. Takashima, J. Simandjuntak, H. Sundhoro, D. Aswin et al. (2002)- Tectonic, volcanic and stratigraphic geology of the Bajawa geothermal field, Central Flores, Indonesia. Bull. Geol. Survey Japan 53, p. 109-138.
*(online at: https://www.jstage.jst.go.jp/article/bullgsj/53/2-3/53_109/_pdf)*
*(Evaluation of geothermal resources around Bajawa, Flores. Since 4 Ma, volcanic activity in C Flores and S coast. 800m uplift in both terranes in past 2.5 million years. Bajawa Cinder Cone Complex more than 60 cones aligned 20 km along NNW-SSE trending Bajawa rift zone rift zone, which formed after 0.8 Ma, related to left-lateral shear between N- moving Australian accretion block in E and relatively fixed Sundaland block in W)*

Musper, K.A.F.R. (1928)- Over den ouderdom der intrusie-gesteenten van Flores. De Mijningenieur 9, p. 163-
*('On the age of the intrusive rocks of Flores'. Brief note on age relationships between granitoid outcrops and surrounding Neogene sediments. Lack of well-documented contact-metamorphic zones allows possibility of pre-Neogene ages of granite)*

Nebel, O., P.Z. Vroon, W. van Westrenen, T. Iizuka & G.R. Davies (2011)- The effect of sediment recycling in subduction zones on the Hf isotope character of new arc crust, Banda arc, Indonesia. Earth Planetary Sci. Letters 303, p. 240-250.
*(In Banda Arc systematic decrease in Hf-Nd isotopes, suggesting along-arc increase in involvement of subducted continental material in arc magma source from <2% in NE to >2% in SW)*

Nebel, O., P.Z. Vroon, D.F. Wiggers de Vries, F.E Jenner & J.A. Mavrogenes (2010)- Tungsten isotopes as tracers of core- mantle interactions: the influence of subducted sediments. Geochimica Cosmochimica Acta 74, 2, p. 751-762.

*(Incl. Th, W and U abundance data for E Indonesian sediments across Banda Arc, potentially useful to determine presence of subducted sediments in arc volcanics)*

Nishimura, S., Y. Otofuji, T. Ikeda, E. Abe, T. Yokoyama, Y. Kobayashi, S. Hadiwisastra, J. Sopaheluwakan & F. Hehuwat (1981)- Physical geology of the Sumba, Sumbawa and Flores islands. In: A.J. Barber & S. Wiriyusono (eds.) The geology and tectonics of Eastern Indonesia, Geol. Res. Dev. Centre (GRDC), Bandung, Spec. Publ. 2, p. 105-113.
*(Evidence of E Miocene 'Old andesite' arc volcanics from 19 ± 2 Ma zircon fission track age in Kiro Fm andesite of E Flores. Imply presence of Jurassic mudstones on Sumba without mentioning evidence for age. Paleomag data from Sumba suggests 60° CW rotation of Sumba between Jurassic-Miocene)*

Noya, Y., G. Burhan & S. Koesoemadinata (1993)- Geology of the Alor and West Wetar quadrangle, Nusa Tenggara. 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung, p.

Noya, Y. & S. Koesoemadinata (1990)- Geology of the Lomblen quadrangle, East Nusatenggara. 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung, 17p.

Padmawidjaja, T. (2010)- Kondisi geologi daerah Ruteng ditafsir pada data gaya berat. Jurnal Sumber Daya Geologi 20, 5, p. 251-260.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/177/173)*
*('Geological condition of the Ruteng area as interpreted from gravity data'. C Flores gravity survey shows locations of basement high and intermontane basins)*

Pannekoek van Rheden, J.J. (1912)- Eenige geologische gegevens omtrent het eiland Flores. Jaarboek Mijnwezen Nederlandsch Oost-Indie 39 (1910), Verhandelingen, p. 132-138.
*('Some geologic data on Flores Island'. Brief visit noticed volcanoes, young coral limestone terraces up to 50-80m above sea level and fossiliferous marls and tuffs of unspecified age)*

Pannekoek van Rheden, J.J. (1913)- Overzicht van de geographische en geologische gegevens, verkregen bij de mijnbouwkundig-geologische verkenning van het eiland Flores in 1910 en 1911. Jaarboek. Mijnwezen Nederlandsch Oost-Indie. 40 (1911), Verhandelingen, p. 208-226.
*(Reconnaissance geological/ mining survey of Flores Island)*

Pannekoek van Rheden, J.J. (1915)- Voorloopige mededeelingen over de geologie van Soembawa. Jaarboek. Mijnwezen Nederlandsch Oost-Indie 42 (1913), Verhandelingen, p. 15-21.
*('Preliminary notes on the geology of Sumbawa'. Mainly young volcanics. Also older volcanics with associated sandstones and limestones, suggested to be of Miocene age by Elbert)*

Pannekoek van Rheden, J.J. (1918)- Geologische Notizen uber die Halbinsel Sanggar, Insel Soembawa (Niederlandisch-Ost-Indien). Zeitschrift Vulkanologie 4, p. 85-192.
*('Geological notes on the Sanggar Peninsula, Sumbawa Island'. Results of 'Mijnwezen' geological survey work in 1911-1913. Main fearute of Sanggar Peninsula of N Sumbawa is historically active Tambora volcano. With appendix by Tobler on Late Neogene foraminifera from 10 samples, incl. Baculogypsina noetetraedra n.sp.)*

Pannekoek van Rheden, J.J. (1920)- Einige Notizen uber die Vulkane auf der Insel Flores. Zeitschrift Vulkanologie 5, p. 109-163.
*('Some notes on the volcanoes of Flores island')*

Pannekoek van Rheden, J.J. (1941)- Een merkwaardige grintbank in den Brang Enek (Eiland Soembawa, Ned.-Indie). Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 58, 2p.
*('A remarkable gravel bank in the Brang Enek (Sumbawa island)')*

Planert, L., H. Kopp, E. Lueschen, C. Mueller, E.R. Flueh, A. Shulgin, Y. Djajadihardja & A. Krabbenhoeft (2010)- Lower plate structure and upper plate deformational segmentation at the Sunda-Banda arc transition, Indonesia. J. Geophysical Research 115, B8, p. 1-25.
*(On effects of lower plate variability on upper plate deformational segmentation at Sunda-Banda arc transition. Incoming plate 8.6-9.0 km thick oceanic crust, progressively faulted and altered when approaching trench. Oceanic slab can be traced over 70-100 km beneath fore arc. Shallow serpentinized mantle wedge at ~16 km depth offshore Lombok is absent offshore Sumba. Thickness of fore-arc crust below Lombok Basin generally 9-11 km suggesting oceanic-type velocity structure, which precludes possible continuation of accreted Gondwana continental fragment from NW Australia into this area)*

Polhaupessy, A.A. (2001)- Vegetation and environment of the Soa Basin, Central Flores. Majalah Geologi Indonesia 16, 3, p. 135-145.

Poorter, R.P.E. (1989)- Geochemistry of hot springs and fumarolic gases from the Banda arc. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, 2-3, p. 323-331.

Poorter, R.P.E., R. Kreulen, J.C. Varekamp, R.J. Poreda & M.J. Van Bergen (1991)- Chemical and isotopic compositions of volcanic gases from the East Sunda and Banda arcs, Indonesia. Geochimica Cosmochimica Acta 55, 12, p. 3795-3807.
*(E Sunda Arc and Banda Arc represent continent-arc collision zone, with magma genesis influenced by subducted continent-derived material. Volcanic gases provide information on sources of volatiles in arc magmas. Abundant He and high He/Ar ratios consistent with subduction of terrigenous components in local sediments (or slivers of continental crust))*

Pratomo, I. & H. Rachmat (2011)- óFosilô gunungapi bawah laut, Tanjung Aan- Kuta, Lombok Selatan, Nusa Tenggara Barat. Proc. Joint 36th HAGI and 40th IAGI Ann. Conv., Makassar, JCM2011-218, 9p.
*('Fossil submarine volcano, Kuta, S Lombok'. Submarine volcanic edifice recognized in Late Oligocene- E Miocene 'Old andesite' Pengulung Fm, S coast of Lombok)*

Priowasono, E. & A. Maryono (2002)- Structural relationships and their impact on mining at the Batu Hijau mine, Sumbawa, Indonesia. Proc. 31st Ann. Conv. Indon. Assoc. Geol. (IAGI), Surabaya, 2, p. 943-953.

Purbo-Hadiwidjoyo, M.M. (1971)- Geological map, Bali, scale 1:250,000. Geol. Survey Indonesia, Bandung.
*(Also 2nd Edition in 1998. Most of Bali Late Miocene- Recent volcanics. Oldest rocks are Late Oligocene- E Miocene volcanics of Ulakan Fm in SE of island (= continuation of 'Old Andesites' belt of South Java). Overlain by Late Miocene-Pliocene? reefal limestones of Selatan Fm in S (Nusa Dua, Nusa Pendida; should be M-L Miocene; Kadar 1973; = continuation of Wonosari Lst of S Java?; JTvG))*

Puspito, N.T. & K. Shimazaki (1995)- Mantle structure and seismotectonics of the Sunda and Banda arcs. Tectonophysics 251, p. 215-228.
*(P-wave tomography and earthquake focal points show subducted slab down to ~500 km below W Sunda Arc, but no seismicity >250 km. In E Sunda arc seismic gap between 300-500 km, but slab continuous into lower mantle. Banda arc seismicity down to ~650 km, slab dips gently and does not penetrate into lower mantle. Positive gravity anomaly along E Sunda arc larger than in W Sunda and Banda arcs. Along back-arc side of Sunda and Banda arcs, heat flow decreases from W to E. W Sunda Arc characterized by normal earthquakes along trench and back-arc thrust earthquakes N of volcanic line. In W and E Sunda arcs down-dip extensional earthquakes dominant down to 200 km, down-dip compression earthquakes below 500 km. Banda arc deep earthquakes extensional to 500 km; deeper state of stress not clearly defined)*

Rachmat, H., M.F. Rosana, A.D. Wirakusumah & G.A. Jabbar (2016)- Petrogenesis of Rinjani post-1257-caldera-forming-eruption lava flows. Indonesian J. Geoscience 3, 2, p. 107-126.
*(online at: https://ijog.geologi.esdm.go.id/index.php/IJOG/article/view/311/209)*

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Rack, G. (1912)- Petrographische Untersuchungen an Ergussgesteinen von Soembawa und Flores. Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 34, p. 42-84.
*('Petrographic studies on volcanic rocks of Sumbawa and Flores'. Descriptions of rocks collected by Elbert 1909-1910: andesites, dacites, leucite tephrite)*

Ratman, N. & F. Agustin (2005)- Stratigrafi daerah Sumbawa Besar dan sekitarnya, Sumbawa. J. Sumber Daya Geologi 15, 4 (150), p. 3-16.
*('Stratigraphy of the Sumbawa Besar area and surroundings'. Rocks range in age from E Miocene- Holocene. Unfossiliferous E-M Miocene Pontotanu Fm volcanics interfinger with Airbeling Fm clastics and Batutering Fm limestone (with Lepidocyclina sumatrensis, Flosculinella bontangensis, Cycloclypeus). Three formations unconformably overlain by Mio-Pliocene Parateh Fm tuffs and Plio-Pleistocene Moyo Fm coralline limestone. M Miocene andesite intrusions and basalt. All units overlain by Quarternary volcanics)*

Ratman, N. & I. Pratomo (2001)- Geologi Gili Trawangan, Gili Meon dan Gili Air (Nongol) lepas pantai barat laut P. Lombok. J. Geologi Sumberdaya Mineral 12, 122, p. 2-12.
*('Geology of Gili Trawangan, Gili Meno and Gili Air (Nongol) off the NW coast of Lombok Island'. Gili Trawangan with Plio-Pleistocene basaltic pillow lavas, suggesting submarine eruption and Pleistocene uplift of island)*

Ratman, N. & I. Pratomo (2002)- Tinjauan kembali stratigrafi Tersier, P. Lombok bagian selatan. J. Geologi Sumberdaya Mineral 12, 127, p. 2-14.
*('Review of the Tertiary stratigraphy of the southern part of Lombok island'. Late Oligocene- Holocene clastics, limestones and volcanics)*

Ratman, N. & A. Yasin (1978)- Geologic map Komodo Quadrangle, Nusatenggara, 1: 250 000. Geol. Res. Dev. Centre (GRDC), Bandung.
*(Geologic map of E Sumbawa- Komodo- W Flores islands, part of modern western Banda volcanic arc. Oldest rocks 'Old Volcanics' andesites- basalts (incl. pillow lavas and red cherts), associated E Miocene limestones. Overlain by M Miocene limestone (with Flosculinella bontangensis) and younger volcanics-dominated deposits. NW-SE trending normal faults on Sumbawa (Late Miocene?). Late Miocene intrusives associated with mainly dacitic volcanics and with mineralization (Au, Ag, Pb))*

Robba, E., A. Franchino, G. Piccoli, M.P. Bernasconi & D. Kadar (1986)- Notes on the limestones of Bukit southern peninsula of Bali Island (Indonesia). Memorie Scienze Geol., Padova, 38, p. 79-89.
*(Planktonic and larger foraminifera from ~400m thick 'Selatan Fm' limestones on Bukit Peninsula of S Bali suggest lower Rembangian age (M Miocene): N9-N10 planktonic foram zones, Lower Tf larger foram zone. Samples of cliff near Ulawatu temple with Miogypsina (Lepidosemicyclina), Katacycloclypeus annulatus, etc. (=equivalent of Wonosari Lst of South Java?; JTvG)))*

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Saefudin, I. (1995)- Pentarikhan jejak belah tajur granitik daerah Wolowaru, Ende, Flores. J. Geologi Sumberdaya Mineral 5, 50, p. 29-38.
*('Fission track analyses of Wolowaru area granites, Ende, Flores'. Late Miocene FT ages of hornblende granite and granodiorite from E Flores, NE of Ende, between ~7.5-10 Ma, with granodiorite ~1-2 Myr older)*

Sarmili, L. & J. Hutabarat (2014)- Indication of hydrothermal alteration activities based on petrography of volcanic rocks in Abang Komba submarine volcano, East Flores Sea. Bull. Marine Geol. (MGI, Bandung) 29, 2, p. 91-100.
*(online at: http://ejournal.mgi.esdm.go.id/index.php/bomg/article/download/69/70)*
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Sarmili, L. & M.A. Suryoko (2012)- The formation of submarine Baruna Komba Ridge on Northeast Flores waters in relation to low anomaly of marine magnetism. Bull. Marine Geol. (MGI, Bandung) 27, 2, p. 67-75.
*(online at: ejournal.mgi.esdm.go.id/index.php/bomg/article/download/46/47)*
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Scotney, P.M. (2002)- The geology and genesis of massive sulphide, barite-gold deposits on Wetar Island, Indonesia. Ph.D. Thesis, University of Southampton, p. 1-220. *(Unpublished)*
*(Pliocene volcanic hosted massive sulphide mounds ('black smoker deposits') at Wetar Island, with flanking Au-Ag-Hg-barite ore bodies. Island composed of Oligocene-Recent volcanics and minor oceanic sediments with mineralisation centers at Kali Kuning and Lerokis, ~3 km inland at 400-500m elevation. Orebodies adjacent to rhyodacite domes. 40Ar/39Ar age of biotite of syeno-granite intrusion 4.7 ± 0.2 Ma, from overlying dacitic flow 2.4 ± 0.3 Ma. Massive sulphides mainly pyrite with some chalcopyrite. Mining removed Au-Ag-bearing barite sands at Lerokis and Kali Kuning. Ore bodies covered by post-mineralisation Globigerina bearing limestone, submarine debris flows and pyroclastics. K-Ar illite age of altered footwall volcanics gives mineralisation age of 4.7 ± 0.16 Ma; 40Ar/ 39Ar age of same sample 4.5 ± 0.2 Ma)*

Scotney, P.M., S. Roberts, R.J. Herrington, A.J. Boyce & R. Burgess (2005)- The development of volcanic hosted massive sulfide and barite-gold orebodies on Wetar Island, Indonesia. Mineralium Deposita 40, 1, p. 76-99.
*(Wetar Island, Banda Arc, composed of Neogene volcanic rocks and minor oceanic sediments. Wetar volcanic edifice formed at ~12 Ma by extensive rifting and associated volcanism within oceanic crust. Youngest dated volcanic rock dacite of ~2. 4 Ma. 'Kuroko-type' volcanogenic precious metal-rich massive sulfide (mainly pyrite) overlain by barite deposits, which produced ~17 tonnes gold. Ages of hydrothermal alteration around ore bodies ~4.7-4.9 Ma. Sr isotopes of unaltered volcanic rocks suggest contributions from subducted continental material. Mineral deposits formed on flanks of volcano at water depth of ~2 km. Ore bodies covered by post-mineralization cherts, gypsum, Globigerina limestone, subaqueous debris flows and pyroclastics)*

Self, S., M.R. Rampino, M.S. Newton & J.A. Wolff (1984)- Volcanological study of the great Tambora eruption of 1815. Geology 12, 11, p. 659-663.
*(Tambora 1815 eruption one of largest explosive volcanic events of past 10,000 yr, with ~175 km3 of nepheline-normative trachyandesitic pyroclastic material was erupted in 24 hours. Plinian and co-ignimbrite ash fall >1 cm thick covered >500,000 km2 of Java Sea and surrounding islands)*

Seran, H. & C. Farmer (2012)- Scratching at the surface: hidden mineralization at Wetar? In: N.I. Basuki (ed.) Proc. Banda and Eastern Sunda arcs, Indonesian Soc. Econ. Geol. (MGEI) Ann. Conv. 2012, Malang, p. 217-232. *(also in Majalah Geologi Indonesia (2013),28, 1, p. 51-63)*
*(online at: www.bgl.esdm.go.id/publication/index.php/dir/article_download/720)*
*(Ongoing exploration for deeper metal prospects on Wetar Island. High sulfidation epithermal alteration may suggest presence of deeper porphyry style deposits that are related to known massive sulfides and extensive unexplored anomalies on island)*

Setyandhaka, D. & J. Arif (2006)- Characteristics of the root of Cu-Au porphyry system: results of study from Batu Hijau Cu-Au porphyry deposit. Proc. 35th Ann. Conv. Indon. Assoc. Geol. (IAGI), Pekanbaru, 11p.

Setyandhaka, D., J. Proffett, S. Kepli & J. Arif (2008)- Skarn mineralization in Batu Hijau Cu-Au porpyry system. Proc. 37th Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 1, p. 664-671.

*(Sumbawa Batu Hijau deposit classic Cu-Au porphyry system. Several intervals of calc-silicate rock and skarn interbedded with volcanics. Potential to find significant skarn-type mineralizations)*

Sewell, D.M. & C.J.V. Wheatley (1994)- Integrated exploration success for gold at Wetar, Indonesia. In: T.M. van Leeuwen et al. (eds.) Mineral deposits of Indonesia; discoveries of the past 25 years, J. Geochemical Exploration 50, 1-3, p. 337-350.
*(Wetar island gold discovery. Most significant Au values associated with barite-rich rocks in basinal structures)*

Sewell, D.M. & C.J.V. Wheatley (1994)- The Lerokis and Kali Kuning submarine exhalative gold-silver-barite deposits, Wetar Island, Maluku, Indonesia. In: T.M. van Leeuwen et al. (eds.) Mineral deposits of Indonesia; discoveries of the past 25 years, J. Geochemical Exploration 50, 1-3, p. 351-370.
*(Wetar Island (Banda Arc, N of Timor) composed of submarine volcanics, with oldest exposed rocks dated at 12 Ma. Basaltic andesite pillow lavas and volcaniclastics overlain by felsic volcanics and sediments. Gold-silver mineralization on N coast in stratiform barite sand, clay or silt. Sediments underlain by Cu-rich pyrite in volcanic breccias and overlain by limestone dated at ~4 Ma. Formed in submarine volcanic environment at 600m water depth in sea floor caldera. Now at 400m asl, suggesting 1000m of young uplift)*

Shulgin, A., H. Kopp, C. Muller, E. Lueschen, L. Planert, M. Engels, E.R.Flueh, A. Krabbenhoeft & Y. Djajadihardja (2009)- Sunda-Banda arc transition: incipient continent-island arc collision (northwest Australia). Geophysical Research Letters 36, L10304, p. 1-6.
*(online at: https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2009GL037533)*
*(E Sunda arc in early stages of continent-arc collision. Australian margin colliding with Banda island arc, causes back arc thrusting. New composite structural model reveals deep geometry of collision zone. Changes in crustal structure encompass 10-12 km thick Australian basement in S and 22-24 km thick Sumba Ridge in N, where backthrusting of 130 km wide accretionary prism is documented)*

Silitonga, F. (1994)- Gravity profiles of the back arc thrust zone, north offshore Sumbawa, Indonesia. In: J.L. Rau (ed.) Proc. 30th Sess. Comm. Co-ord. Joint Prospecting Mineral Res. Asian Offshore Areas (CCOP), Bali 1993, 2, p. 33-42.
*(Major linear gravity low N of Sumbawa modeled as backarc accretionary prism, possibly with common shale diapyrism, on oceanic crust)*

Silver, E.A., N.A. Breen, H. Prasetyo & D.M. Hussong (1986)- Multibeam study of the Flores backarc thrust belt, Indonesia. J. Geophysical Research 91, B3, p. 3489-3500.
*(online at: http://bpls.go.id/bplsdownload/library/paper/Silver-Flores-MB-JGR-86.pdf)*
*(SeaMARC II seafloor bathymetry and seismic reflection profiles used to map segment of Flores back arc thrust zone. Mud diapirs formed throughout accretionary wedge, but concentrated at ends of thrust faults. Overall orientation of deformation front of accretionary wedge is 100°)*

Silver, E.A., D. Reed, R. McCaffrey & Y. Joyodiwiryo (1983)- Back arc thrusting in the eastern Sunda Arc, Indonesia: a consequence of arc-collision. J. Geophysical Research 88, p. 7492-7448.
*(Eastern Sunda arc backarc dominated by 2 large N-directed thrusts, Wetar and Flores thrusts, which may represent early stages of subduction polarity reversal. Mechanism of backarc thrusting not clear)*

Simon, A. (1913)- Beitrage zur Petrographie der kleinen Sunda-Inseln Lombok und Wetar. Dissertation Marburg, p. 1-74.
*('Contributions to the petrography of the Lesser Sunda islands Lombok and Wetar'. Petrography of volcanic rocks collected by 1909-1910 Sunda-expedition of Elbert)*

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*('Study of the uplifted Quaternary reef terraces between Sunda Strait and Timor island; vertical movements of earth crust and variations of sea level')*

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*(online at: https://gsmpubl.files.wordpress.com/2014/09/bgsm1998021.pdf)*
*(Majority of gold-copper mineralization along Sunda-Banda arc low-sulfidation epithermal, related to Late Neogene fine silicic pyroclastics of calc-alkaline to potassic calc-alkaline affinity)*

Stothers, R.B. (1984)- The Great Tambora eruption in 1815 and its aftermath. Science 224, 4654, p. 1191-1198.

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*(online at: ejournal.mgi.esdm.go.id/index.php/jgk/article/download/242/232)*
*('Subsurface structure interpretation based on magnetic anomaly attributes of Wetar waters, East Nusa Tenggara'. Identification of back-arc frontal thrust and submarine volcano edifices from magnetic and shallow seismic data in E Flores Sea/ S Banda Sea, N of Banda Arc islands Alor- Wetar)*

Subarsyah & R. Rahardiawan (2016)- Geological structures appearances and its relation to mechanism of arc-continent collision, northern Alor-Wetar Islands. Bull. Marine Geol. 31, 2, p. 55-66.
*(online at: http://ejournal.mgi.esdm.go.id/index.php/bomg/article/view/326/274)*
*(Shallow seismic lines in S Banda Sea, N of Alor- Wetar, in zone of back-arc thrusting. Delineation of Alor Thrust and Wetar Thrust, offset by N-S left-lateral strike-slip fault. Also possible submarine volcano structures)*

Sudijono (1997)- On the age of the limestone in the island of Lombok, West Nusatenggara. J. Geologi Sumberdaya Mineral 7, 72, p. 14-34.
*(Limestones in S Mountains of Lombok. Limestones generally in isolated outcrops, 36m or less thick. Three separate units, formerly all grouped in Ekas Fm: (1) Sekotong Lst in SW: latest Oligocene (Te1-4), with larger forams Miogysinoides complanatus and Spiroclypeus, and associated with 'Old Andesites' volcanics (2) C-S Lombok, near Orokgendang dam and Lawang Gua, E-M Miocene (upper Te5-Tf1-2) with Katacycloclypeus, Flosculinella bontangensis, Miogypsina, etc., associated with marls with zone N8 planktonic forams (looks like equivalent of Wonosari Lst of S Java; JTvG) and (3) SE Lombok, N of Ekas and Serewe, Late Miocene (Tf3/ N16) with Lep. (Trybliolepidina) rutteni and Radiocycloclypeus (see also Franchino et al. (1988)).*

Sudradjat, A., S. Andi Mangga & N.Suwarna (1998)- Geologic map of the Sumbawa Quadrangle, Nusatenggara, scale 1: 250,000. Geol. Res. Dev. Centre (GRDC), Bandung.
*(Geologic map of West and C Sumbawa. Miocene- Recent volcanic rocks, with E and M Miocene limestone lenses. With Tambora volcano in N)*

Sulaeman, C., S. Hidayati, A. Omang & I.C. Priambodo (2018)- Tectonic model of Bali Island inferred from GPS Data. Indonesian J. Geoscience 5, 1, p. 81-91.
*(online at: https://ijog.geologi.esdm.go.id/index.php/IJOG/article/view/389/257)*
*(GPS campaign shows horizontal displacements between 1.9 and 22.5 mm/yr, dominantly to NE. Deformation in Bali mostly controlled by subduction in S and East Flores back-arc thrust in N)*

Suwarno, N. & Y. Noya (1985)- Stratigrafi regional wilayah Busur Bergunungapi Nusatenggara. Proc. 14th Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta 1985, p. 71-79.

Suwarno, N., S. Santosa & S. Keosoemadinata (1989)- Geological map of the Ende Quadrangle, East Nusatenggara, Quadrangle 2207, 2208, 2307, 2308, scale 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung.
*(Geologic map of most of Flores Island. Oldest rock E-M Miocene Kiro and M Miocene Tanahau arc volcanics, some with pillow structures intruded by M Miocene granodiorites. Overlain by Late Miocene Waihekang Fm tuffaceous limestones with Lepidocyclina, Alveolinella and tuffaceous marine Loka Fm. With 21p. report)*

Takashima, I., A. Nasution & H. Muraoka (2002)- Thermoluminescence dating of volcanic and altered rocks in the Bajawa geothermal area, central Flores Island, Indonesia. Bull. Geol. Survey Japan 53, 2/3, p. 139-146.
*(online at: https://www.gsj.jp/data/bulletin/53_02_07.pdf)*
*(Ages of young basalts- andesites around Bajawa geothermal area of C Flores, determined by thermoluminescence dating, range from 32-160 ka)*

Tampubolon, B.T. & Y. Saamena (2009)- Savu Basin: a case of frontier basin area in Eastern Indonesia. Proc. 33rd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, IPA09-SG-078, p. 337-347.
*(Review of deepwater (3km deep) Savu forearc basin, based on gravity, seismic and bathymetry data (no wells). Basin underlain by thin (12-14km) crust, probably oceanic. Relatively undeformed forearc basin fill unconformably on block-faulted pre-Late Miocene basement)*

Tobler, A. (1918)- Notiz uber einige foraminiferenfuhrende gesteine von der Halbinsel Sanggar (Soembawa). Zeitschrift Vulkanologie 4, p. 189-192.
*('Notes on some foraminifera-bearing rocks from the Sanggar Peninsula (Sumbawa)'. Appendix in Pannekoek van Rheden (1918) paper. Incl. first description of Schlumbergerella neotetraeda in Quaternary? limestones)*

Umbgrove, J.H.F. (1939)- Miocene corals from Flores (East-Indies). Leidsche Geol. Mededelingen 11, 1, p. 62-67.
*(online at: www.repository.naturalis.nl/document/549421)*
*(Corals from limestone at N coast of Flores near Papang, collected by Kuenen. 9 species, probably Miocene age, incl. Cyphastrea monticulifera, Progyrosmilia vacua, Fungophyllia spp., Leptoseris, Goniopora planulata)*

Van der Vlerk, I.M. (1922)- Studien over Nummulinidae en Alveolinidae. Haar voorkomen op Soembawa en haar betekenis voor de geologie van Oost-Azie en Australie. Verhandelingen Geologisch-Mijnbouwkundig Genootschap Nederland Kol., Geol. Serie 5, p. 329-464.
*('Studies on Nummulinidae and Alveolinidae. Their occurrence on Sumbawa and significance for the geology of East Asia and Australia'. Limestone samples from Sumbawa with Miocene larger foraminifera, incl. Lepidocyclina spp., Alveolinella, Miogypsina, Cycloclypeus (incl. C. annulatus), etc. (Looks like mainly M Miocene, equivalent of Wonosari Lst of S Java?. With discussions of Indonesia larger foram species and distribution. With locality map. Little stratigraphic info; JTvG))*

Van der Werff, W. (1996)- Variation in forearc basin development along the Sunda Arc, Indonesia. J. Southeast Asian Earth Sci. 14, 5, p. 331-349.
*(Includes details on fore-arc areas off Sumba)*

Van der Werff, W., H. Prasetyo & T.C.E. van Weering (1991)- The Bali-Lombok forearc region: trapped forearc basin of rifted continental origin ? Proc. Int. Seminar Geodynamics, Indon. Assoc. Geophys. (HAGI), p. 14-22.
*(Geologic development of Sumba analogous to Doang borderland at leading edge of Sunda shield margin?)*

Van Heek, J. (1910)- Bijdrage tot de geologische kennis van het eiland Lombok. Jaarboek Mijnwezen Nederlandsch Oost-Indie (1909), Wetenschappelijk Gedeelte, p. 1-82.
*('Contribution to the geological knowledge of Lombok Island'. Most of Lombok composed of young volcanic rocks. Narrow range of hills along S coast ?E Miocene volcanics, overlain by ?M Miocene Lithothamnium-rich limestone with Lepidocyclina, looking like continuation of Java S Mountains. (Fig. 11 also shows Miogypsina*

*and advanced Lep. (N), suggesting M Miocene age, similar to Wonosari Lst of S Java; JTvG). With geologic map 1:200,000)*

Van Heek, J. (1911)- Onderzoek van een looderts voorkomen in Zuid-Lombok. Jaarboek Mijnwezen Nederlandsch Oost-Indie 38 (1909), Technisch Admin. Ged., p. 177-201.
*('Investigation of a lead ore occurrence in South Lombok'. Survey confirms older reports on presence of lead deposits (galena in quartz veins, with minor Ag, Cu) at Sukadana hill and at Bukit Pedjere near Lentek in S Central Lombok, but not deemed to be extensive. Hosted in (Early Miocene?) diagenetically altered andesitic volcanics, which are overlain by (Late?) Miocene limestones (geologically looks like continuation of Southern Mountains of Java)*

Verbeek, R.D.M. (1914)- De eilanden Alor en Pantar, residentie Timor en onderhoorigheden. Tijdschrift Kon. Nederl. Aardr. Gen. 32, 33p.
*('The islands of Alor and Pantar' (Banda Arc))*

Von Koenigswald, G.H.R. (1958)- A tektite from the island of Flores, Indonesia. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, B 61, p. 44-46.

Wawryk, C.M. & J.D. Foden (2017)- Iron-isotope systematics from the Batu Hijau Cu-Au deposit, Sumbawa, Indonesia. Chemical Geology 466, p. 159-172.
*(Iron isotope values of andesite and quartz diorite and coeval hypogene ore minerals from Batu Hijau porphyry copper-gold deposit in Sumbawa)*

Wichmann, A. (1891)- Bericht uber eine im Jahre 1888-89 im Auftrag der Niederlandischen Geographischen Gesellschaft ausgefuhrte Reise nach dem Indischen Archipel, Part 2, III. Flores. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 1891, p. 188-293.
*('Report on a voyage carried out for Netherlands Geographic Society in 1888-1889 to the Indies Archipelago, part 2- III. Flores'. Part 2 of Wichmann geographic narrative of expedition to Indonesia)*

Wichmann, A. (1892)- Ueber das angebliche Tertiar der Insel Adonara. Neues Jahrbuch Mineral. Geol. Palaont. 1892, 1, p. 61-64.
*('About the alleged Tertiary age of the island Adonara'. Debate between Wichmann and Martin on whether presence of silicified corals Clementia papyracea, Coeloria singularis Martin and Hydnophora astraeoides Martin in limestone of W coast of Adonara represent Miocene age (as preferred by Wichmann) or something younger (N.B. latter two coral species also reported from latest Oligocene Rajamandala Limestone of W Java by Gerth 1921, supporting Miocene or older age; JTvG))*

Wichmann, C.E.A. (1914)- On the tin of the island of Flores. Proc. Kon. Akademie Wetenschappen, Amsterdam, 17, 2, p. 474-490.
*(online at: digitallibrary.nl)*
*(Reports of tin occurrences at Rokka Mts of Flores by Freyss (1860) could not be confirmed by subsequent investigations. Tin is associated with old granites, and older rocks gradually disappear E of Java. Outcrops on Flores limited to Tertiary volcanics and sediments, and Mt. Rokka is a volcano.)*

Wichmann, C.E.A. (1919)- On tin-ore in the Island of Flores. Proc. Kon. Akademie Wetenschappen, Amsterdam, 21, 1, p. 409-416.
*(online at: digitallibrary.nl)*
*(Repeats 1914 conclusion that no tin is present on Flores, despite new paper by Vermaes suggesting presence)*

Widiyantoro, S. & Fauzi (2005)- Note on seismicity of the Bali convergent region in the eastern Sunda Arc, Indonesia. Australian J. Earth Sci. 52, 3, p. 379-383.
*(Recent earthquakes around Bali show seismic activity concentrated down to ~200 km, along forearc and in backarc. Stress field dominated by N-S compression. Thrust events in backarc N of Bali likely due to W*

*continuation of backarc thrust fault of Sumbawa and Flores. Local earthquake hypocentres form image of S-ward subduction of Java Sea oceanic crust, in opposite direction of main subduction of Indo-Australian Plate)*

Wilkinson, J.J., Z. Chang, D.R. Cooke, M.J. Baker, C.C. Wilkinson, S. Inglis, H. Chen & J.B. Gemmel (2015)- The chlorite proximitor: a new tool for detecting porphyry ore deposits. J. Geochemical Exploration 152, p. 10-26.
*(Major, minor and trace element chemistry of chlorite evaluated as tool for mineral exploration in propylitic environment of Batu Hijau Cu-Au porphyry deposit, SW Sumbawa)*

Wong, H.K. & U. Salge (1992)- Seismic facies, sedimentary structures and tectonics around Sumbawa island in East Indonesia. In: E.T. Degens, H.K. Wong & M.T. Zen (eds.) The sea off Mount Tambora, Mitteilunge Geol.-Palaont. Inst. Universitat Hamburg 70, p. 37-57.

Yeh, H., F. Imamura, C. Synolakis, Y.Tsuji, P. Liu & S. Shi (1993)- The Flores Island tsunamis. EOS Transactions American Geophys. Union (AGU) 74, 33, p. 369, 371-373.
*(December 12, 1992 Ms 7.5 earthquake and tsunami off N Flores with epicenter 50km NW of Maumere, hypoceneter depth 15km. Considered to reflect activity in N Flores backarc thrust zone. Tsunami runup height up to 26m, inundation distance ~600m)*

Zardi D, A., T. Sihombing, A. Purba & N.I. Basuki (2012)- Resource of Pangulir lode deposit, Sumbawa, Indonesia. Proc. Banda and Eastern Arcs, MGEI Annual Convention 2012, Malang, p. 159-179.
*(Pangulir newly discovered Au-Ag-Cu epithermal quartz-sulfide vein breccia lode in S Sumbawa Island. Hosted in Tertiary arc volcanics)*

Zen, M.T., S. Soemarno & F. Ilyas (1992)- Structural pattern and tectonic position of Sumbawa Island in East Indonesia. In: E.T. Degens, H.K. Wong & M.T. Zen (eds.) The sea off Mount Tambora, Mitteilunge Geol.-Palaont. Inst. Universitat Hamburg 70, p. 21-35.

Zubaidah, T. (2010)- Spatio-temporal characteristics of the geomagnetic field over the Lombok Island, the Lesser Sunda Islands region: New geological, tectonic, and seismo-electromagnetic insights along the Sunda-Banda Arcs transition. GoeForschungsZentrum, Potsdam, Scient. Techn. Report STR10/07, p. 1-115.
*(online at: http://ebooks.gfz-potsdam.de/pubman/item/escidoc:10278:3/component/escidoc:10279/1007.pdf)*

Zubaidah, T., M. Korte, M. Mandea, Y. Quesnel & M. Hamoudi (2014)- New insights into regional tectonics of the Sunda-Banda Arcs region from integrated magnetic and gravity modelling. J. Asian Earth Sci. 80, p. 172-184.
*(Lombok Island lies between zones characterized by large intensity magnetic anomalies. Geomagnetic ground surveys and modelling suggest two active Quaternary normal faults and a magmatic arc related to subduction region. Magnetic anomalies and gravity models suggest extension of Flores Thrust zone (reaching NW off Lombok Island). Flores Thrust zone may be considered as mature subduction in back arc region, showing tendency of progressive subduction during last decades)*

Zubaidah, T., M. Korte, M. Mandea, Y. Quesnel & B. Kanata (2010)- Geomagnetic field anomalies over the Lombok Island region: an attempt to understand the local tectonic changes. Int. J. Earth Sciences (Geol. Rundschau) 99, 5, p. 1123-1132.
*(Magnetic survey of SW Lombok. Magnetic high tied to large igneous intrusive body)*

***VII.3. Sumba, Savu, Savu Sea***

Abdullah, C.I. (1994)- Contribution a lôetude geologique de lôisle de Sumba: apports a la connaissance de la geodynamique de lôarchipel indonesien orientale. Doct. Thesis Universite de Savoie, Chambery, p. 1-255.
*('Contribution to the geological study of Sumba island and relevance to the geodynamics of the east Indonesian archipelago')*

Abdullah, C.I. (2010)- Evolusi magmatisme Pulau Sumba. Proc. 39th Ann. Conv. Indon. Assoc. Geol. (IAGI), Lombok, PIT-IAGI-2010-049, 3p.
*('Magmatic evolution of Sumba Island'. Short paper describing three periods of calk-alkaline island arc magmatism in Cretaceous- Paleogene of Sumba: (1) U Cretaceous (Santonian- Campanian; 85.4- 78.6 Ma), (2) Maastrichtian- Thanetian (71.7- 56.6 Ma), (3) Eocene- Oligocene (Lutetian- Rupelian; 42.3- 31.4 Ma)*

Abdullah, C.I., J.P. Rampnoux, H. Bellon, R.C. Maury & R. Soeria-Atmadja (2000)- The evolution of Sumba Island (Indonesia) revisited in the light of new data on the geochronology and geochemistry of the magmatic rocks. J. Asian Earth Sci. 18, 5, p. 533-546.
*(online at: http://directory.umm.ac.id/Data%20Elmu/jurnal/J-a/Journal%20of%20Asian%20Earth%20Science/Vol18.Issue5.2000/383.pdf)*
*(Sumba continental crustal fragment, with 3 Cretaceous-Paleogene arc volcanic episodes: Late Cretaceous (86-77 Ma), Maastrichtian- Thanetian (71-56 Ma) and Lutetian- Rupelian (42-31 Ma). W-ward shift of volcanism through time. No Neogene volcanism (considered reworked!?). Very similar to SW Sulawesi. Sumba was part of 'Andean' magmatic arc near SW Sulawesi magmatic belt and SE Kalimantan coast at margin of Asian Plate)*

Abdullah, C.I., J.P. Rampnoux & R. Soeria-Atmadja (1996)- Data baru geochronologi, analysis kimia dan tinjauan geodinamik Pulau Sumba. In: Sampurno et al. (eds.) Pros. Seminar Nasional Geoteknologi III, LIPI, Bandung, p. 324-346.
*('New data on geochronology, chemical analysis and review of geodynamics of Sumba Island'.Similar to above?. Sumba Block started to separate from Sundaland margin by oceanic rifting in Sumba Strait in Oligo-Miocene?)*

Abdullah, C.I., E. Suparka & V. Isnaniawardhani (2008)- Sedimentary phases of Sumba Island (Indonesia). Proc. 37th Conv. Indon. Assoc. Geol. (IAGI), Bandung, 1, p. 66-79.
*(Stratigraphy of Sumba continental block slightly to unmetamorphosed Cretaceous sediments, unconformably overlain by less deformed Tertiary-Quaternary deposits. Four sedimentary phases: (1) Late Cretaceous-Paleocene marine turbidites with Santonian-Campanian (86-77 Ma) and Maastrichtian- Thanetian (71-56 Ma) magmatic episodes; (2) Paleogene neritic sedimentation with Lutetian-Rupelian magmatic episode (42-31 Ma); (3) Neogene rapid sedimentation in deep sea environment; (4) Quaternary uplift of terraces. Sumba never subjected to intense deformation, implying never been involved in collision between Indian- Australian and Asiatic plates, except during minor compressive episode in Paleogene)*

Audley-Charles, M.G. (1975)- The Sumba fracture: a major discontinuity between Eastern and Western Indonesia. Tectonophysics 26, p. 213-228.
*(Sunda-Banda Arc not a continuous subduction system. Major tectonic discontinuity separates E Indonesia (Sumba, Banda Arcs, E Sulawesi) from W Indonesia (W Sulawesi and islands west of Sumba). Sumba fracture initially a Late Jurassic wrench fault that became Cretaceous and Cainozoic transform. Sumba detached from N Australia; Timor, etc., represent deformed Australian continental margin. Overthrust Asian elements also present. No subduction has taken place between Outer Banda Arc islands and Australia since Early Permian)*

Audley-Charles, M.G. (1985)- The Sumba enigma: is Sumba a diapiric fore-arc nappe in process of formation? Tectonophysics 119, 1-4, p. 435-449.
*(online at: http://searg.rhul.ac.uk/pubs/audley-charles_1985_Sumba%20enigma.pdf)*

*(Sumba Cretaceous-Miocene stratigraphy similar to Timor allochthonous Palelo-Cablac series and both with Cretaceous forearc deposits on thin continental crust. Postulated Sumba nappe not yet thrust onto Australian margin and may be diapyric dome)*

Bard, E., C. Jouannic, B. Hamelin, P. Pirazzoli, M. Arnold, G. Faure, P. Sumosusastro & Syaefudin (1996)- Pleistocene sea levels and tectonic uplift based on dating of corals from Sumba Island, Indonesia. Geophysical Research Letters 23, 12, p. 1473-1476.
*(Quaternary tectonic uplift rate calculated from uplifted reef terraces at Cape Laundi, NE coast Sumba, 0.2-0.5m/ 1000 yrs)*

Beiersdorf, H. & K. Hinz (1980)- Active ocean margins in SE Asia. In: H. Cloos et al. (ed.) Mobile Earth: International Geodynamics project, p. 121-125.
*(Savu Basin underlain by 12-14 km thick oceanic crust)*

Boehm, G. (1911)- *Posidonomya becheri* in Niederlandisch-Indien? Centralblatt Mineralogie Geologie Palaont. 1911, 11, p. 350-352.
*(online at: www.biodiversitylibrary.org/item/192769#page/374/mode/1up)*
*(On possible occurrence of bivalve Posidonomya, collected by Witkamp in 1910 in dark grey sandy shales from Lobewi village, near S coast of W Sumba (this identification implies Carboniferous age, but re-identified by Roggeveen (1929) as Jurassic or Cretaceous Inoceramus; JTvG))*

Breen, N.A, E.A. Silver & D.M. Hussong (1986)- Structural styles in an accretionary wedge south of the island of Sumba, Indonesia, revealed by SeaMARC II side scan sonar. Geol. Soc. America (GSA) Bull. 97, 10, p. 1250-1261.
*(Accretionary wedge S of Sumba in early stages of continent-island arc collision. Australian continental shelf sediments accreted to Sunda arc at Timor trough. Deformation concentrated on lower slope of accretionary wedge, within 15-25 km of thrust front, above which strain rate appears to decrease. Three structural styles developed in area. W part of accretionary wedge is being indented and redeformed by basement ridge)*

Brouwer, H.A. (1943)- Leuciethoudende en leucietvrije gesteenten van den Soromandi op het eiland Soembawa. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam 52, 6, p. 303-307.
*('Leucite-bearing and leucite-free rocks of the Soromandi volcano on Sumbawa Island')*

Budiharto, R. (2002)- Oblique divergent wrench fault movement between the islands of Sumba and Timor. Proc. 31st Ann. Conv. Indon. Assoc. Geol. (IAGI), Surabaya, 1, p. 315-326.

Burollet, P.F. & C. Salle (1981)- A contribution to the geological study of Sumba (Indonesia). Proc. 10th Ann. Conv. Indon. Petroleum. Assoc. (IPA), Jakarta, p. 331-344.
*(Basement exposed along S coast of Sumba is folded, low metamorphic Late Cretaceous deep marine sediments. ?Early Paleocene calk-alkaline volcanics and intrusives. Early Miocene carbonates unconformable over Eocene; thick Early Miocene tuffs. Paleomag suggests 60° clockwise rotation since Cretaceous. Quaternary reef terraces 500m above sea level)*

Burollet, P.F. & C. Salle (1982)- Histoire geologique de l'ile de Sumba (Indonesie). Bull. Soc. Geologique France 24, 3, p. 573-580.
*('Geologic history of Sumba Island'. Marine turbiditic and pelagic Cretaceous sediments strongly folded at end of Cretaceous and cut by numerous intrusions of a 66-59 Ma major volcanic phase. Unconformably overlain by gently folded Paleogene, including M-L Eocene limestones rich in larger forams and M Eocene andesitic volcanics (39-42.5 Ma, deepening upward into radiolarian clays. Early Miocene carbonate- marl series unconformable over all older formations. Total Neogene limestone-marl thickness ~500-600m; slightly dipping to NE)*

Caudri, C.M.B. (1934)- Tertiary deposits of Soemba. Doct. Thesis, Leiden University, p. 1-225. *(Unpublished)*

*(Eocene carbonates (zones Ta2 and Tb) with Nummulites spp., Assilina, Discocyclina, Asterocyclina, alveolinids (Fasciolites), Pellatispira (= Sundaland genus; not known from Australia/ New Guinea; JTvG), unconformably over folded and intruded Mesozoic (Jurassic?). Oligocene angular unconformity separates Late Eocene-earliest Oligocene (Tb-Tc) limestones with dips of 30°, from more horizontal Earliest Miocene (zone Te5) sediments with Lepidocyclina (N.), Spiroclypeus and Miogypsina)*

Chamalaun, F.H., A.E. Grady, C.C. von der Borch & H.M.S. Hartono (1981)- The tectonic significance of Sumba. Bull. Geol. Res. Dev. Centre (GRDC), Bandung 5, p. 1-20.

Chamalaun, F.H., A.E. Grady, C.C. von der Borch & H.M.S. Hartono (1982)- Banda Arc tectonics: the significance of the Sumba Island (Indonesia). In: J.L. Watkins & C.L. Drake (eds.) Studies in continental margin geology, American Assoc. Petrol. Geol. (AAPG), Mem. 34, p. 361-375.
*(Sumba no subduction tectonics of Sunda Arc to W, nor collision tectonics of Banda Arc system. Sumba is continental fragment from Australia or from Sundaland (Flores Basin), that became trapped behind E Java Trench. Data not convincing, but appears to favor Australian origin)*

Chamalaun, F. H. & W. Sunata (1982)- The paleomagnetism of the Western Banda Arc System-Sumba. In: Paleomagnetic Research in Southeast and East Asia, Proceedings of a Workshop, Kuala Lumpur 1982, CCOP, Bangkok, p. 162-194.

Djoehanah, S. & S. Hadiwisastra (1984)- Korelasi umur nannoplangton dan foraminifera Paleogen di daerah Wanokaka, Sumba Barat. J. RISET Geologi Pertambangan (LIPI) 5, 1, p. 1-8.
*(online at: http://pustaka.geotek.lipi.go.id/wp-content/uploads/2016/02/Riset-Vol.5-No.1-2.pdf)*
*(Samples from S coast of W Sumba, S of Waikabukak, with common Late Eocene (zone NP19) nannoplankton, incl. Discoaster barbadiensis, D. saipanensis, etc. From same horizon planktonic foraminifera of zone P16 (Hadiwisastra 1980) and zone Tb larger foraminifera (Caudri 1934))*

Djumhana, N. & D. Rumlan (1992)- Tectonic concept of the Sumba continental fragment, Eastern Indonesia. Proc. 21st Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta, 2, p. 585-598.
*(Sumba island fragment of continental crust. Structure rel. simple. Seismic data suggest continuity with N part of Timor, from which it separated in M-L Miocene (11-10 Ma) and rotated 60° CW))*

Effendi, A.C. & T. Apandi (1994)- Geology of the Waikabubak and Waingapu sheets, Nusatenggara. Geol. Res. Dev. Centre (GRDC), Bandung.
*(1:250,000 geologic map of Sumba Island, originally completed in 1981. Oldest rocks recognized in outcrops is >1000m thick series of Upper Cretaceous deep marine flysch/greywacke with Globotruncana, associated with lavas and volcanic breccias and tuffs (Masu Fm). Intruded by Paleocene granodiorites (61.5 Ma) and andesitic volcanics, overlain by Eocene greywackes, Eocene and Lower Oligocene limestones and E Miocene andesitic volcanics (Jawila Fm.) Uplifted coral reefs suggest rapid recent uplift along N coastal areas (not in S))*

Ely, K.S. & M. Sandiford (2010)- Seismic response to slab rupture and variation in lithospheric structure beneath the Savu Sea, Indonesia. Tectonophysics 483, 1-2, p. 112-124.
*(Banda Arc earthquake focal mechanisms suggest subducting slab under W Savu Sea in down-dip compression at 70-300 km, while down-dip tension typifies intermediate depth Sunda slab to W and Banda slab to E. Compression reflects subduction of transitional crust of Scott Plateau. Enhanced magma flux indicated by narrower volcano spacing in overlying arc. E of Savu Sea, near complete absence of intermediate depth seismicity attributed to slab window where Australian continental crust has collided with arc. Differences in seismic moment release around this slab window indicate asymmetric rupture, propagating to E faster than W. Volcano spacing from Bali-Sumbawa average 68 km, in E Banda Arc average of 72 km)*

Fleury, J.M. (2005)- De la subduction oceanique a la subduction continentale deformations associees et heritage structural: l'exemple du bloc Sumba-Savu, terminaison orientale du fosse de la Sonde. Thesis Universite Pierre & Marie Curie, Paris, p. 1-278. *(Unpublished)*

*(East of 120ºE abrupt change in style of subduction deformation of upper plate. Fieldwork on Sumba demonstrated volcanic activity from Upper Cretaceous until Oligocene, followed by well-developed carbonate sedimentation. Miocene paleogeography shows E-W oriented platform- basin configuration. Currently Sumba is extensional regime. Savu Basin is marine extension of Sumba structure. Internal part is little deformed and acts as rigid buttress and transfers convergence to backarc. Arrival of Australian margin at subduction zone forms, at end of Mio-Pliocene orogeny in Timor, a rigid block composed of Sumba island in W, Timor in E and the little deformed Savu Basin in middle. W limit of this block unknown)*

Fleury, J.M., M. Pubellier, M. de Urreiztieta & N. Chamot-Rooke (2006)- Crustal erosion and subduction of continental asperity: Sumba Island and forearc, Indonesia. Geophysical Res. Abstracts 9, 06054, 2007, European Geosc. Union, EGU2007-A-06054 *(Abstract only)*

Fleury, J.M., M. Pubellier & M. de Urreiztieta (2009)- Structural expression of forearc crust uplift due to subducting asperity. Lithos 113, p. 318-330.
*(Sumba Island presently undergoing extension, associated with regional uplift. Crustal uplift may have been created by major thrust emerging in S of island, associated with NE tilt of island. The consequent anomalous positive topography along S coast compensated by significant tectonic erosion along large-scale curvilinear normal faults in SE half of island. Expression of this gravitational collapse at receding side of an advancing circular dome striking similarities with accretionary wedges being affected by seamount subduction. Savu Basin moderately deformed and acts as rigid buttress in convergence between Banda Arc and Australian plate)*

Fortuin, A.R., Th.B. Roep & P.A. Sumosusastro (1994)- The Neogene sediments of east Sumba, Indonesia- products of a lost arc? J. Southeast Asian Earth Sci. 9, 1-2, p. 67-79.
*(M Miocene- Pliocene deep water sediments overly Oligocene- Early Miocene carbonate platform, overlying Paleogene volcanics and Late Cretaceous turbidites. Common arc volcanic debris in Mid-Late Miocene sourced from SSW, but present-day arc is to N!)*

Fortuin, A.R., Th.B. Roep, P.A. Sumosusastro, T.C.E. van Weering & W. van der Werff (1992)- Slumping and sliding in Miocene and Recent developing arc basins, onshore and offshore Sumba (Indonesia). Marine Geology 108, p. 345-363.
*(Neogene slidemasses in E Sumba compared to analogues in seismic profiles off Lombok and Savu basins. Onshore examples were deposited in deep marine base-of slope environments, within reach of large amounts of clastics derived from volcanic arc. Tectonically induced oversteepening considered main cause of failure)*

Fortuin, A.R., W. van der Werff & H. Wensink (1997)- Neogene basin history and palaeomagnetism of a rifted and inverted forearc region, on- and offshore Sumba, eastern Indonesia. J. Asian Earth Sci. 15, 1, p. 61-88.
*(online at: http://dspace.library.uu.nl/handle/1874/19036)*
*(Sumba island is emerged part of SE Asian terrane, with angular unconformity between Paleogene platform carbonates and Mid-Late Miocene volcanoclastic submarine fan representing break-up stage. At least 3 km subsidence in M Miocene. High volcanic supply in M Miocene and E-M Tortonian, waning in late Tortonian and renewed supply during Messinian.Volcanoclastics sourced from S. Possible start of >4 km Sumba uplift at ~7 Ma, but most of uplift Pliocene- Recent. Emergence of Sumba probably not before 3 Ma)*

Hadiwisastra, M.S. (1980)- Biostratigrafi Tersier Bawah daerah Wanokaka, Sumba Barat. J. Riset Geologi Pertambangan (LIPI) 3, 2, p. 18-26.
*(online at: http://pustaka.geotek.lipi.go.id/wp-content/uploads/2016/02/Riset-Vol.3-No.2-2.pdf)*
*'Early Tertiary stratigraphy of the Wanokaka area, Sumba'. Late Eocene Tb shallow marine larger foraminifera (incl. Nummulites, Pellatispira) and 32 species of planktonic foraminifera (zone P16; incl. Globigerinatheka semiinvoluta, Pseudohastigerina micra, Globorotalia cerroazulensis, etc.) in marls/ limestones along road Waikabukak and Padedewatu, 2km N of Padedewatu)*

Hantoro, W.S. (1993)- Neotektonik dan kurva variasi paras muka laut Pleistosen: studi teras terumbu koral terangkat di Pulau Sumba, Nusa Tenggara Timur, Indonesia. Proc.22nd Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 1, p. 159-180.

*('Neotectonics and Pleistocene sea level variation curve: study of uplifted coral reef terraces on Sumba Island, East Nusa Tenggara, Indonesia'. NE Sumba island with 6 main uplifted Pleistocene reef terraces up to 475m elevation. Radiometric dating and correlation to oxygen isotope curves suggest ages up to ~1.0 Ma)*

Hantoro, W.S., C. Jouannic & P.A. Pirazzoli (1989)- Terrasses coralliennes Quaternaires soulevees dans lôile de Sumba (Indonesie). Photo-Interpretation 28, 1, p. 17-34.
*('Quaternary uplifted reef terraces on Sumba Island')*

Inamoto, A. & M. Sayama (1993)- Hydrogeology of Sumba Island, Nusa Tenggara Timur, Indonesia. J. Japan Soc. Engin. Geol. 34, 4, p. 178-193.
*(online at: www.journalarchive.jst.go.jp...) (in Japanese)*

Jouannic, C.R., W.S. Hantoro, C.T. Huang, M. Fournier, R. Lafont & M.L. Ichram (1988)- Quaternary raised reef terraces at Cape Laundi, Sumba, Indonesia: geomorphological analysis and first radiometric age determinations. In: Proc. 6th Int. Coral Reef Symposium, Australia 3, p. 441-447.
*(Quaternary reef terraces uplifted up to 500m in N and C Sumba (see also Pirazzoli et al. 1991, Nexer 2015)*

Karmini, Mimin (1985)- Paleontological analysis of the Sawu basin, Lombok basin and Argo abyssal plain. Proc. 14th Ann. Conv. Indon. Assoc. Geol. (IAGI), p. 205-221.

Keep, M., I. Longley & R. Jones (2003)- Sumba and its effect on Australia's northwestern margin. In: R.R. Hillis & R.D. Muller (eds.) Evolution and dynamics of the Australian Plate. Geol. Soc. America (GSA), Spec. Paper 372 and Geol. Soc. Australia Spec. Publ. 22, p. 309-318.
*(Suggest 8 Ma collision of Sumba forearc and promontory of Australian continent, resulting in Sumba uplift)*

Kruizinga, P. (1939)- Two fossil Cirripedia from the Pleistocene marls of Sumba. Verhandelingen Geologisch-Mijnbouwkundig Genootschap Nederland Kol., Geol. Serie 12, p. 259-264.
*(On barnacles on Spondylus mollusc collected by Verbeek in 1899 from Pleistocene marls near N coast Sumba)*

Kusnida, D. (1992)- Stratigraphic break of the Sawu forearc basin. Bull. Marine Geol. Inst. Indonesia 7, 1, p. 1-14.
*(Interpretation of shallow seismic profiles of Savu Basin, acquired by Snellius II expedition)*

Laufer, F. & A. Kraeff (1957)- The geology and hydrology of West and Central Sumba and their relationship to the water-supply and rural economy. Publ. Keilmuan 33, Ser. Geol., Geol. Survey, Bandung, p. 1-48.
*(Report thick, intensely folded Pre-Tertiary (Cretaceous of later authors) flysch-type slates and quartzites with possible NNW strike in S mountains of W Sumba. Cut by pre-Eocene basalt and gabbros and probably also large granodiorite massif. Unconformably overlain by Late Eocene limestones with larger forams including Pellatispira. Miocene and younger limestones probably with minor unconformity over Paleogene limestones. E Miocene Jawila volcanics. Quaternary reefal limestone terraces up to 300m above sea level)*

Lytwyn, J., E. Rutherford, K. Burke & C. Xia (2001)- The geochemistry of volcanic, plutonic and turbiditic rocks from Sumba, Indonesia. J. Asian Earth Sci. 19, p. 481-500.
*(Sumba underlain by Late Cretaceous- Early Oligocene volcanic arc rocks and associated turbiditic sediments, and is fragment of an oceanic island arc, not piece of Sundaland continent)*

Meiser, P., D. Pfeiffer, M. Purbohadiwidjojo & Sukardi (1965)- Hydrogeological map of the isle of Sumba, scale 1:250,000. Indonesia Geol. Survey, Bandung.

Nexer, M. (2015)- Etude conjointe des reseaux de drainage et des paleocotes plio-quaternaires soulevees: exemples de lôIndonesie et du golfe Normand Breton. Doct. Thesis Universite de Caen Normandie, p. 1-365.
*(online at: https://tel.archives-ouvertes.fr/tel-01258570/document)*

*('Joint study of the drainage systems and uplifted Pliocene-Quaternary paleocoasts: examples from Indonesia and the Gulf of Normandy- Brittany'. In French. With chapters on raised coral reef terraces of Sumba, E Indonesia, and Huon Peninsula, PNG)*

Nexer, M., C. Authemayou, T. Schildgen, W.S. Hantoro, S. Molliex, B. Delcaillau, K. Pedoja, L. Husson & V. Regard (2015)- Evaluation of morphometric proxies for uplift on sequences of coral reef terraces: a case study from Sumba Island (Indonesia). Geomorphology 241, p. 145-159.
*(Study of uplifted Pleistocene coral reef terraces, preserved along 2/3 of coast of Sumba island (not along most of S coast). Six main terraces, up to 30 km wide. Maximum elevations of 470m along NE coast. Uplift rates variable, between 0.10- 0.63 mm/yr)*

Nishimura, S., Y. Otofuji, T. Ikeda, E. Abe, T. Yokoyama et al. (1981)- Physical geology of the Sumba, Sumbawa and Flores islands. In: A.J. Barber & S. Wiriyusono (eds.) The geology and tectonics of Eastern Indonesia, CCOP-SEATAR Mtg., Bandung 1979, Geol. Res. Dev. Centre, Spec. Publ. 2, p. 105-113.
*(Major tectonic discontinuity between Sumbawa and Flores. Paleomag suggests about 60° clockwise rotation of Sumba island between Jurassic and Early Miocene. No stratigraphy/age control for their 'Jurassic mudstones' from SW Sumba)*

Otofuji, Y., S. Sasajima, S. Nishimura, S. Hadiwisastra, T. Yokoyama & F. Hehuwat (1980)- Palaeoposition of Sumba Island, Indonesia. In: S. Nishimura (ed.) Physics and geology of the Indonesian island arcs, Kyoto University Press, Kyoto, p. 59-66.

Otofuji, Y., S. Sasajima, S. Nishimura & F. Hehuwat (1979)- Paleomagnetic evidence for the paleoposition of Sumba Island, Indonesia. Rock magnetism and paleogeophysics, Tokyo, 6, p. 69-74.
*(online at:
http://peach.center.ous.ac.jp/rprep/Rock%20Magnetism%20and%20Paleogeophysics%20vol6%201979.pdf)*
*(Paleomagnetic work on 15 site, ranging in age from Jurassic (more likely Upper Cretaceous?; HvG) to Miocene, during which Sumba rotated CW by 59.2°. Late Jurassic paleolatitude of 25.9°S, suggests Sumba formed part of Australian continent)*

Otofuji, Y., S. Sasajima, S. Nishimura, T. Yokoyama, S. Hadiwisastra & F. Hehuwat (1981)- Paleomagnetic evidence for the paleoposition of Sumba Island, Indonesia. Earth Planetary Sci. Letters 52, p. 93-100.
*(Sumba underwent 59.2° CW rotation since Jurassic and 79 4 ° relative to Timor since Jurassic (Cretaeous?). Until Jurassic, Sumba and Timor situated at Australian continental margin; Sumba at paleolatitude of ~26°S ('Jurassic' rocks analyzed more likely Cretaceous?; JTvG) (similar paper to Otofuji et al. 1979, 1980))*

Permanadewi, S. & I. Saefudin (1994)- Umur mutlak batuan tuf daerah pegunungan Tanadaro dan sekitarnya, Sumba, Nusa Tenggara Timur: berdasarkan metoda pentarikhan jejak belah. J. Sumber Daya Geologi 4, 34, p. 20-26.
*('Absolute ages of tuffs in the Tanadaro Mts area, Sumba, E Nusa Tenggara, using fission track method'. Zircon fission track ages of 3 andesitic tuff samples from Masu Fm of C Sumba: (1) 57.3± 5.4 Ma (= ~Paleocene-Eocene boundary), (2) 49.3± 2.9 Ma (= ~E-M Eocene boundary) and (3) 45.3 ± 5.7 Ma (= M Eocene))*

Pfeiffer, D. & P. Meiser (1968)- Geologische, hydrogeologische und geoelectrische Untersuchungen auf der Insel Sumba (Indonesia). Geol. Jahrbuch 86, p. 885-918.
*('Geological, hydrogeological and geoelectrical investigations on the island of Sumba, Indonesia')*

Pirazzoli, P.A., U. Radtke, W.S. Hantoro, C. Jouannic, C.T. Hoang, C. Causse & M. Borel Best (1993)- Quaternary raised coral reef terraces on Sumba island, Indonesia. Science 252, p. 1834-1836.
*(Sequence of coral-reef terraces (6 main steps >500m wide and many substeps) near Cape Laundi, Sumba Island, between 475m elevation and sea level. Uplift rate 0.5 mm/yr. Most terraces correspond to specific interglacial stages, with oldest terrace formed 1 million years ago)*

Pirazzoli, P.A., U. Radtke, W.S. Hantoro, C. Jouannic, C.T. Hoang, C. Causse & M. Borel Best (1993)- A one million-year-long sequence of marine terraces on Sumba Island, Indonesia. Marine Geology 109, p. 221-236.
*(11 Pleistocene coral reef terraces at N coast Sumba Island, <1 million years old, up to 475m above sea level)*

Prasetyo, H. (1994)- The tectonics of the óSunda-Bandaô forearc transition zone, eastern Indonesia. Bull. Marine Geol. Inst. Indonesia 9, 1, p. 23-47.
*(Marine geophysical and geological studies of forearc area between Sumba and Timor, including field studies of accretionary wedge of Sawu Island and uplifted portion of forearc basement (Sumba Ridge) of Sumba Island. Region of transition from conventional Andean-type Indian Ocean subduction along E Sunda Trench in W to arc-continent collision along Timor Trough in E. Several major problems remain unresolved)*

Reed, D.L. (1985)- Structure and stratigraphy of the eastern Sunda forearc, Indonesia. Geologic consequences of arc-continent collision. Ph.D. Thesis, Scripps Inst. Oceanography, La Jolla, University of California, p. 1-235. *(Unpublished)*
*(Study of marine seismic profiles and piston cores in E Sunda fore-arc, with geologic fieldwork on Late Miocene- E Pliocene accretionary complex on Savu island. Savu with imbricated, well-indurated U Triassic-Jurassic quartzose turbidites/ deep water limestones (mainly ENE trending and WNW-dipping?) and more intensely deformed, sheared, poorly consolidated Cretaceous- Tertiary pelagic sediments (with scaly clays). Sumba Ridge best described as continental landmass (crustal thickness 24km), trapped in forearc during Miocene initiation of E Sunda arc-trench system, but rel. undeformed in Neogene. Between Sumba and Savu outflow of Pacific Ocean deep from Savu Basin water caused significant (up to 1000m?) submarine erosion on crests of ridges, with material re-deposited along Savu Thrust and Sumba Basin (mainly as muddy contourites/ drifts). Triassic limestones on Savu with Monotis salinaria, Halobia and radiolaria. U Jurassic with blocks of pillow basalts. Deformed strata on Savu never deeply buried. Blocks ('boudins'?) and scaly matrix formed by common deformation process. Opposite sense of imbrication along N and S coasts? Rel. undeformed U Miocene-Pliocene marls overlie U Miocene scaly clay of deformed section of Savu; uplifted >2km. N-directed backthrust N of Savu separates forearc basin from accretionary wedge. Refraction line across Savu Basin indicates oceanic crust)*

Reed, D.L., A.W. Meyer, E.A. Silver & H. Prasetyo (1987)- Contourite sedimentation in an intraoceanic forearc system: Eastern Sunda Arc, Indonesia. Marine Geology 76, p. 223-241.
*(Sedimentation in E Sunda forearc strongly influenced by vigorous deep- and bottom-water circulation. Sumba Ridge and Sawu-Timor Ridge together form barrier to outflow of Pacific Ocean Deep Water from Sawu Sea to E Indian Ocean. Outflow bottom currents eroded gap in sill at 1150m between Sumba and Sawu. SW of gap, exposure of consolidated M Miocene- Pliocene foraminiferal chalks and oozes along Sumba Ridge suggests up to 1 km of overburden removed by currents. Eroded sediments re-deposited as muddy contourites in >1 km sediment drift in adjacent Sumba Basin. Drift forms elongated mound of reworked calcareous ooze and is bounded by moat-like channels)*

Reed, D.L., E.A. Silver, H. Prasetyo & A.W. Meyer (1986)- Deformation and sedimentation along a developing terrane suture: Eastern Sunda forearc, Indonesia. Geology 14, p. 1000-1003.
*(Discussion of Sawu thrust, a S-dipping reverse fault thrusting Sawu-Timor terrane Neogene accretionary wedge towards Sumba Ridge terrane, which is part of Banda forearc)*

Rigg, J.W.D. & R. Hall (2011)- Structural and stratigraphic evolution of the Savu Basin, Indonesia. In: R. Hall et al. (eds.) The SE Asian gateway: history and tectonics of Australia-Asia collision. Geol. Soc. London, Spec. Publ. 355, p. 225-240.
*(Savu Basin located in Sunda-Banda forearc at change from oceanic subduction to continent-arc collision. Interpreted to be underlain by continental crust, added to Sundaland margin in mid-Cretaceous. Before M Miocene Sumba and Savu Basin close to sea level and subsided rapidly in late M Miocene in response to extension induced by subduction rollback at Banda Trench)*

Rigg, J.W.D. & R. Hall (2012)- Neogene development of the Savu Forearc Basin, Indonesia. Marine Petroleum Geol. 32, p. 76-94.

*(Savu Basin records M Miocene initiation of subduction of Banda oceanic embayment, subsequent arc volcanism and Pliocene- Recent collision of Australian continent and Banda forearc. Four Neogene units: Unit 1 underlain by continental crust and Cretaceous-Paleogene arc rocks, capped by Oligocene- Lower Miocene shallow water carbonates. Subduction rollback-induced extension in M Miocene caused subsidence to depths of several km. Units 2-4 include M Miocene-Pliocene arc-derived volcaniclastic turbidites and deep water carbonates. Savu Basin little deformed, except near Savu and Roti Thrusts. Sumba Ridge elevated as Australian margin continental crust underthrust forearc to form broad flexure, tilting older units. Savu- Roti Ridge is pre-collision Banda forearc accretionary complex and Australian margin sedimentary cover and has risen >2 km since 2 Ma)*

Roep, T.B. & A.R. Fortuin (1996)- A submarine slide scar and channel filled with slide blocks and megarippled *Globigerina* sands of possible contourite origin from the Pliocene of Sumba, Indonesia. Sedimentary Geology 103, p. 145-160.
*(Early Pliocene deep-water sequences (~1-2 km deep) near Kambatatana, Sumba island, include slide scar which evolved into channel, >120m wide, 20m deep. Origin of the megarippled planktonic foraminiferal sand-units uncertain, but they may have been by contour currents)*

Roggeveen, P.M. (1928)- Jura op het eiland Soemba. Verhandelingen Kon. Nederl. Akademie Wetenschappen, Amsterdam, 32, p. 674-676.
*('Jurassic on Sumba Island'. Dutch version of paper below)*

Roggeveen, P.M. (1929)- Jurassic in the island of Sumba. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam 32, p. 512-514.
*(online at: www.dwc.knaw.nl/DL/publications/PU00015738.pdf)*
*(English version of paper above. Inoceramus molluscs and fragment of an aegoceratid ammonite from S coast of W Sumba in rocks collected by Witkamp. In opinion of Kruizinga this could be Hammatoceras molukkanum, as known from Jurassic of Sula islands. Tentatively placed in U Liassic by Wanner (1931)(Other specialists deem the ammonite fragment indeterminate and the Inoceramus more likely a Cretaceous species (Van Gorsel 2012). More likely age of beds is Cretaceous according to Von der Borch et al. (1983)). Folded Mesozoic intruded by igneous rocks and unconformably overlain by Eocene (Caudri, 1934))*

Roggeveen, P.M. (1932)- Abyssische und hypabyssische Eruptivgesteine der Insel Soemba. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam 35, 6, p. 878-890.
*(online at: www.dwc.knaw.nl/DL/publications/PU00016297.pdf)*
*('Abyssal and hypabyssal igneous rocks of Sumba island'. Petrographic descriptions of outcrop samples of igneous rocks collected mainly by Witkamp in Central Sumba: granite, granodiorite, diorite, porphyrite, hornfels, etc.. Igneous rocks unconformably overlain by marls and limestones with Eocene larger forams (Discocyclina; Rutten 1912), and may be of Late Mesozoic age)*

Rutherford, E., K. Burke & J. Lytwyn (2001)- Tectonic history of Sumba Island, Indonesia, since the Late Cretaceous and its rapid escape into the forearc in the Miocene. J. Asian Earth Sci. 19, 4, p. 453-479.
*(In Late Cretaceous- Early Oligocene Sumba was part of Great Indonesian Volcanic arc system (~86- 31 Ma). At 16 Ma Sumba torn away from relict arc and moved WSW, moving ~450 km until present position at ~7 Ma)*

Rutten, L. (1912)- On orbitoids of Sumba. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 15, 1, p. 461-467.
*(online at: www.dwc.knaw.nl/DL/publications/PU00012991.pdf)*
*(Presence of Eocene Orthophragmina (= Discocyclina) javana and O. dispansa in samples collected by Witkamp at S coast Sumba. No detailed localities, pictures)*

Rutten, L.M.R. (1927)- Soemba, Rendjoewa, Savoe en Rotti. In: L.M.R. Rutten (1927) Voordrachten over de geologie van Nederlandsch Indie, Wolters, Groningen, p. 666-679.
*(Review of geology of Sumba, Renjuwa, Savu and Roti islands)*

Satyana, A.H. & M.E.M. Purwaningsih (2011)- Sumba area: detached Sundaland terrane and petroleum implications. Proc. 35th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA11-G-009, 32p.
*(Sumba Island is microcontinental fragment in forearc of Sunda-Banda volcanic arc, here believed to be detached from SE/E Sundaland. Paleogene stratigraphy of Sumba similar to S Sulawesi, with arc volcanics, Eocene low-latitude Pellatispira larger foram fauna, etc.)*

Satyana, A.H. & M.E.M. Purwaningsih (2011)- Multidisciplinary approaches on the origin of Sumba terrane: regional geology, historical biogeography, linguistic-genetic coevolution and megalithic archaeology. Proc. Joint 36th HAGI and 40th IAGI Ann. Conv., Makassar, JCM2011-018, 28p.
*(Sumba continental terrane came from E/SE margin of Sundaland based on stratigraphy, geochronology-geochemistry of magmatic rocks, paleomagnetism, and isotope geology. Sumba Paleogene stratigraphy similar to S Sulawesi, magmas characteristic of island arc at Sundaland margin. Late Cretaceous Lasipu Fm volcanics with Pb-Nd isotope characteristics suggesting affinities with Sundaland. Sumba Eocene with low-latitude 'Assilina-Pellatispira' Sundaland larger forams, no higher latitude Australian 'Lacazinella'. Marine shore fish of Phallostethidae family typical of Sundaland waters, suggesting Sumba shared closer biotic relationship with Sundaland before dispersal)*

Satyana, A.H. & M.E.M. Purwaningsih (2012)- New look at the origin of the Sumba Terrane: multidisciplinary approaches. Berita Sedimentologi 25, p. 26-34.
*(online at: http://www.iagi.or.id/fosi/files/2012/12/BS25-Lesser_Sunda_Final_small.pdf)*
*(Review of geology of Sumba island)*

Simandjuntak, T.O. (1993)- Tectonic origin of Sumba Platform. J. Geologi Sumberdaya Mineral 3, 22, p. 10-19.
*(Geology of Sumba different from adjacent Neogene Banda volcanic arc islands and allochthonous Paleozoic microcontinents in Banda Sea region. Cretaceous- Miocene stratigraphy of Sumba most similar to SW arm of Sulawesi. Oldest sediments in outcrop are thick U Cretaceous flysch with volcanics series, very similar to Latojong Fm of S Sulawes and Pitap Fm of SE Kalimantan. Sumba probably detached from Sulawesi, possibly from N part of Bone Bay or from Walanae Depression and displaced S before development of Banda volcanic arc. May also have been detached from SE margin of Sundaland. Deepening of facies suggest detachment of Sumba took place in M Miocene)*

Siregar, D.A. & D. Setyagraha (1995)- Pentarikhan radiokarbon terhadap teras batugamping Waingapu, Sumba, Nusatenggara Timur. J. Geologi Sumberdaya Mineral 5, 51, p. 16-22.
*('Radiocarbon analysis of the Waingapu limestone terraces, Sumba, E Nusatenggara'. Sumba NE coast near Waingapu with 14 Quaternary uplifted coral reef terraces. Radiocarbon dating suggests ages between 5660 ± 260 BP and 1650 ± 130 BP. During this time two phases of marine transgression and regression)*

Soeria-Atmadja, R., S. Suparka, C. Abdullah, D. Noeradi & Sutanto (1998)- Magmatism in western Indonesia, the trapping of the Sumba Block and the gateways to the east of Sundaland. J. Asian Earth Sci. 16, 1, p. 1-12.
*(Similarities in Late Cretaceous-Paleogene stratigraphy and calc-alkali magmatism between Sumba, S Sulawesi and SE Kalimantan suggest Sundaland origin for all these areas. Southward migration of Sumba to frontal arc position of Sunda-Banda arc since Late Cretaceous-Paleocene)*

Spence, W. (1986)- The 1977 Sumba earthquake series: evidence for slab pull acting at a subduction zone. J. Geophysical Research 91, p. 7225-7239.
*(Focal mechanism analysis of 1977 earthquake data under Sumba suggest normal faulting in oceanic lithosphere, probable evidence for slab pull of subducting plate)*

Toothill, S. & D. Lamb (2009)- Hydrocarbon prospectivity of the Savu Sea Basin. Proc. 33rd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA09-G-013, p. 657-668.
*(Seismic surveys in Savu basin suggest potential for hydrocarbons. Up to 4.8 km of sediment; no wells drilled. Basin origin complex: four to five phases of rifting and uplift and erosion in region, and overprinted in recent geological time by collision tectonics. Significant number of gas chimneys and bright amplitudes)*

Umbgrove, J.H.F. (1946)- Tertiary corals from Sumba (East Indies). Verhandelingen Geologisch-Mijnbouwkundig Genootschap Nederland Kol., Geol. Serie 13, p. 393-398.
*(Miocene and Eocene corals (mainly solitary species; Phyllangia, Hydnophyllia, Goniastrea, Diploastaea) from Witkamp collection from W Sumba)*

Van der Werff, W. (1995)- Cenozoic evolution of the Savu Basin, Indonesia: forearc basin response to arc-continent collision. Marine Petroleum Geol. 12, 3, p. 247-262.
*(Savu Basin initial E Miocene subsidence of outer forearc basin and development of M-Late Miocene volcanic 'proto' arc in S of basin resulted from Late Oligocene-E Miocene E-ward propagation of Java-Timor Trench. N of accretionary prism, forearc basement flexed down and reshaped into trenchward- dipping backstop that facilitates backthrusting of accretionary prism. Southern forearc basement probably acted as barrier against compression. Thickness of continental basement critical in response of forearc- continent collision. Savu Basin responded to underthrusting of continental crust by reactivation of basement ridges. This resulted in differentiation of forearc basin into extinct and uplifted Miocene S Savu Basin and Pliocene-Recent active N Savu Basin. Late Miocene-Recent uplift of large segments of outer forearc and subsidence of N Savu Basin)*

Van der Werff, W. (1995)- Structure and morphotectonics of the accretionary prism along the Eastern Sunda-Western Banda Arc. J. Southeast Asian Earth Sci. 11, p. 309-322.
*(Forearc region near Sumba- Savu variation in structure related to incipient collision with Australia. Arc-trench system changes from ridged S of Bali- Lombok- Sumbawa to sloped S of Sumba. E of Sumba, accretionary wedge backthrust over forearc basin, incorporating forearc sediments and basement. Accretionary wedge probably little of sediment subducted. Decrease in width of prism from Bali to Sumbawa corresponds to E-ward younging trend of arc-trench system from Late Oligocene to E Miocene. S of Sumba width of prism increases considerably, due to accretion of thick continental margin carbonates which deform by thrust-bounded folds. Buoyancy of partially subducted marginal Scott plateau increases basal shear stresses, adding to growth of large accretionary wedge. Further E, subduction of thick continental crust results in even higher basal shear stresses distributed through accretionary wedge, causing backthrusts and internal deformation, leading to shortening and thickening of wedge)*

Van der Werff, W. (1996)- Forearc development and early orogenesis along the eastern Sunda/ western Banda arc (Indonesia). Ph.D. Thesis Vrije Universiteit, Amsterdam, pp. 1-311. *(Unpublished)*
*(Collection of 7 previously published 1992-1996 papers, mainly on Snellius II program in E Sunda- W Banda fore arc areas)*

Van der Werff, W., D. Kusnida, H. Prasetyo & T.C.E. van Weering (1994)- Origin of the Sumba forearc basement. Marine Petroleum Geol. 11, 3, p. 363-374.
*(Basement structures in E Sunda/ W Banda forearc suggests continuity between Sumba and N Timor. Structures trend E-W in W, gradually change into NE-SW trends in E. Major NE-SW trending discontinuity W of Sumba between 117° 30' and 118° 30' E marks transition between intraoceanic volcanic arc system in W and volcanic arc-continent collision zone in E. Extent of Sumba basement suggests either common (Late Jurassic) rift/drift history for Sumba and N Timor or (E Miocene) magmatic welding of two continental fragments of different origin, resulting in structural continuity between two microplates)*

Van der Werff, W., H. Prasetyo & T.C.E. van Weering (1991)- The accretionary wedge South of Sumba Timor: an accreted terrane in the process of slivering? Proc. Int. Seminar on Geodynamics of fore-arc sliver plate, Indon. Assoc. Geophys. (HAGI), p. 55-60

Van der Werff, W., H. Prasetyo, D. Kusnida, & T.C.E. van Weering (1994)- Seismic stratigraphy and Cenozoic evolution of the Lombok forearc basin. Marine Geology 117, p. 119-134.
*(Lombok Basin probably underlain by thinned rifted continental crust. Five Cenozoic seismostratigraphic sequences (1) Paleogene synrift deposits, predating initiation of convergent margin; (2) and (3) two phases of evolution of accretionary prism, between Late Oligocene and M Miocene; (4) and (5) slope front fill deposits reflecting volcanic activity and tectonic uplift of magmatic arc from M Miocene onwards. By Late Miocene, increased convergence between subducting Indian and overlying Asian plates resulted in stronger mechanical*

*coupling, expressed in southern forearc basin by folding of oldest basin fill. Present activity governed by Late Pliocene collision of accretionary prism with Scott marginal and Roo Rise oceanic plateaus, resulting in uplift of outer-arc ridge and southern part of forearc basement)*

Van Gorsel, J.T. (2012)- No Jurassic rocks on Sumba? Berita Sedimentologi 25, p. 35-37.
*(Identification of an ammonite fragment from SW Sumba as M Jurassic Hammatoceras by Roggeveen (1929) is highly questionable, and Cretaceous age is more likely. Oldest proven rock age on Sumba is thus Cretaceous)*

Van Weering, T.C.E., D. Kusnida, S. Tjokrosapoetro, S. Lubis, P. Kridoharto & S. Munadi (1989)- The seismic structure of the Lombok and Savu forearc basins, Indonesia. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, 2-3, p. 251-262.
*(Four seismic sequences in Lombok and Savu forearc basins, separated by unconformities (Late Oligocene, mid-Miocene and Pliocene S of Java). Upper Miocene- Pleistocene forearc fill turbidite-dominated. Faulting strongest in E Lombok Basin; growth faults, shale diapirs and mud volcanoes reflect intensity of deformation caused by merge of Sunda and Banda Arc collision systems. Tilted and uplifted basement ridges W of Sumba separate turbidite filled sub-basins from forearc basin. Sumba was in present position before onset of Sunda - Banda Arcs subduction system and initial Lombok and Savu forearc basins were connected)*

Von der Borch, C.C., A.E. Grady, S. Hardjoprawiro, H. Prasetyo & S. Hadiwisastra (1983)- Mesozoic and Late Tertiary submarine fan sequences and their tectonic significance, Sumba, Indonesia. Sedimentary Geology 37, p. 113-132.
*(Sumba Cretaceous with tropical Tethyan mollusc fauna, volcanoclastic component and andesite dykes. Part of major submarine fan complex with turbidite flow directions to N240°, suggesting paleoslope to SW (restoring ~90° of clockwise rotation (Wensink 1997) would become paleodip to SE, which would fit well with Cretaceous position at SE margin of Sunda Shelf; JTvG)*

Vorkink, M. (2004)- Incipient arc-continent collision: structural analysis of Savu Island, Indonesia. Masters Thesis, Brigham Young University, Utah, p. 1-87. *(Unpublished)*
*(online at: www.geology.byu.edu/wp-content/uploads/2013/03/2004-Vorkink-Michael-W.pdf)*
*(Savu island is uplifted part of Banda fore-arc accretionary wedge, W of Timor. Consists of N and S verging thrust sheets of Late Triassic- M Jurassic Australian continental margin sediments, rimmed by discontinuous melange belt. Pillow basalts in Jurassic Wai Luli Fm. Detachment probably in Triassic Lower Babulu/ upper Aitutu Fm, at depth of ~2600m. Foraminifera in syn-orogenic deposits of Sava suggest water depths of 1-1.5 km at 1.8 Ma)*

Vorkink, M.W. & R.A. Harris (2004)- Tectonic development of the incipient Banda Arc-continent collision: geologic and kinematic evolution of Savu Island, Indonesia. Abstracts with Programs Geol. Soc. America 2004 Annual Mtg., Denver, 36, 5, p. 319. *(Abstract only)*
*(Savu both N and S-verging thrust sheets of Lt Triassic- M Jurassic Australian continental margin units, rimmed by discontinuous melange of forearc basement fragments and synorogenic units. Pillow basalt in Jurassic Wai Luli Fm. N-verging folds move back of accretionary wedge over S Savu forearc basin. S-verging thrust sheets are bulk of island and well-exposed in S Savu. Detachment for thrust sheets in Triassic Lower Babulu or upper Aitutu Fms at ~2600m depth. Maximum age for initiation of collision 4.0 Ma. Foraminifera in synorogenic units indicate outer arc 1.0-1.5 km below sea level at 1.8 Ma, a surface uplift rate of ~1 mm/yr. At this rate, it takes 3.2-5.0 Ma to uplift these from pre-collisional depth of 3.5-4.0 km)*

Wensink, H. (1991)- The paleoposition of the island of Sumba, derived from paleomagnetic data. In: E.P. Utomo, H. Santoso & J. Sopaheluwakan (eds.) Proc. Silver Jubilee Symposium on the Dynamics of subduction and its products, Yogyakarta 1991, Indonesian Inst. Sciences (LIPI), p. 238-244.

Wensink, H. (1994)- Paleomagnetism of rocks from Sumba: tectonic implications since the Late Cretaceous. J. Southeast Asian Earth Sci. 9, p. 51-65.
*(online at: https://dspace.library.uu.nl/handle/1874/19116)*

*(Overview of Sumba geology. In Late Cretaceous Sumba was at 8° (not sure if N or S, but both demonstrate Sumba was not part of Australia at that time). In this paper concluded to various CCW rotations between Late Cretaceous and Miocene, but re-interpreted to more reasonable CW rotations in Wensink 1997)*

Wensink, H. (1997)- Palaeomagnetic data of Late Cretaceous rocks from Sumba, Indonesia; the rotation of the Sumba continental fragment and its relation with eastern Sundaland. Geologie en Mijnbouw 76, p. 57-71.
*(Paleomagnetic studies on Sumba continental fragment. Tanadaro granodiorite (65 Ma) paleolatitude 8.3° S. E Sundaland with Borneo, W and S Sulawesi, and Sumba formed one continental unit in Late Mesozoic, most likely attached to SE Asian mainland. Borneo and W and S Sulawesi large CCW rotations since Jurassic (45° in Cretaceous, 45° in Paleogene). Sumba microcontinent detached from E Sundaland soon after Late Cretaceous. Paleomagnetic data show Sumba underwent CW rotations of up to 96° (CW 53° between 82-65 Ma; 38° between 65-37 Ma; 9° between Late Eocene-Late Miocene and ~4° CCW since Late Miocene- E Pliocene). E Sundaland and Sumba close to equator since Jurassic)*

Wensink, H. & M.J. van Bergen (1995)- The tectonic emplacement of Sumba in the Sunda-Banda Arc: paleomagnetic and geochemical evidence from the Early Miocene Jawila volcanics. Tectonophysics 250, p. 15-30.
*(online at: http://dspace.library.uu.nl/handle/1874/19118)*
*(Paleomag of E Miocene Jawila arc volcanics suggests very similar position to present-day Sumba. Original position of Sumba in Late K- Paleocene probably 18° N; drift and rotation completed before Mid Miocene ? Early Miocene arc volcanics on Sumba suggest island arc and imply older arc S of modern arc (= same as Java 'Old Andesites'?; JTvG), or was within E Sunda arc between Sumbawa and E Flores and drifted S. (NB: Fortuin et al. (1997) and Abdullah et al. (2000) suggest Jawila Volcanics Late Eocene- E Oligocene age)*

Witkamp, H. (1912)- Een verkenningstocht over het eiland Soemba- part 1. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 29, p. 744-775.
*('A reconnaissance trip across the island of Sumba'. First of four parts of geographic-geologic reconnaissance of Sumba island, which previously had only been visited by Verbeek (1908). Not much on geology)*

Witkamp, H. (1913)- Een verkenningstocht over het eiland Soemba- part 2. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 30, p. 8-27.
*('A reconnaissance trip across the island of Sumba'; part 2)*

Witkamp, H. (1913)- Een verkenningstocht over het eiland Soemba- part 3. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 30, p. 484-505.
*('A reconnaissance trip across the island of Sumba'; part 3)*

Witkamp, H. (1913)- Een verkenningstocht over het eiland Soemba- part 4. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 30, p. 619-637.
*('A reconnaissance trip across the island of Sumba'; part 4)*

## ***VII.4. Timor, Roti, Leti, Kisar*** *(incl. Timor Leste)*

Aben, F.M. M.J. Dekkers, R.R. Bakker, D.J.J. van Hinsbergen, W.J. Zachariasse, G.W. Tate, N. McQuarrie, R. Harris & B. Duffy (2014)- Untangling inconsistent magnetic polarity records through an integrated rock magnetic analysis: a case study on Neogene sections in East Timor. Geochem., Geophys. Geosystems 15, 6, p. 2531-2554.
*(online at: http://onlinelibrary.wiley.com/doi/10.1002/2014GC005294/epdf)*
*(Magnetic polarity analysis of latest Miocene-Pliocene deep-marine siliciclastics and limestones at Viqueque and Cailaco Rivers, E Timor, shows (1) magnetic carriers mainly greigite and magnetite; (2) paleomagnetic directional analysis yields magnetic polarity patterns inconsistent with biostratigraphic constraints. Detrital magnetite suite yields largely viscous remanence signals and is deemed unsuited; greigite suites more reliable and giving revised polarity pattern of Viqueque latter section more consistent with biostratigraphy)*

Archbold, N.W. & S.T. Barkham (1989)- Permian brachiopoda from near Bisnain village, West Timor. Alcheringa 13, p. 125-140.
*(Permian brachiopoda from outcrops of calcarenites-shales attributed to Maubisse Fm near Bisnain, W Timor. Assemblage correlative to late Sakmarian (E Permian), temperate climate, Callytharra Fm of W Australia)*

Archbold, N.W. & P.R. Bird (1989)- Permian brachiopoda from near Kasliu Village, West Timor. Alcheringa 13, p. 103-123.
*(Permian brachiopoda from outcrops of Maubisse Fm volcanoclastics near Kasliu, W Timor. Assemblage probably Chidruan age and correlative of classic Late Permian 'Tethyan' Basleo and Amarassi faunas)*

Astjario, P. & S. Tjokrosapoetro (1986)- Kecapatan pengangkatan Pulau Timor di zaman Kuarter. Proc. 14th Ann. Conv. Indon. Assoc. Geol. (IAGI), p. 31-34.
*('Uplift rates of Timor island in the Quaternary')*

Ati, E.M. (2012)- Geologi dan karakteristik endapan mangan tipe sedimen di daerah Supul, Kab. Timor Tengah Selatan, Provinsi Nusa Tenggara Timur. Thesis S2, Gadjah Mada University, Yogyakarta, p. 1-197. *(Unpublished; see also Imam et al., 2012)*
*('Geology and characteristics of sedimentary-type manganese deposits in the Supul area, south Central Timor district, …'. Sedimentary manganese layers in Supul area interbedded with red-brown deep sea claystone. Spatial linkage with mud volcano intrusion. Manganese layers 2mm- 4cm thick and highly deformed. Primarily manganite, also pyrolusite, lithiophorite, etc. Manganese ores as nodules and manganese layers)*

Audley-Charles, M.G. (1965)- A Miocene gravity slide deposit from East Timor. Geol. Magazine 102, p. 267-276.
*(E Timor formation of unbedded scaly bentonitic clay with scattered exotic blocks and smaller fragments formed by submarine sliding of unstable clay mass from area N of Timor under influence of gravity, associated with the emplacement of large overthrusts. Proposed to call it Bobonaro Scaly Clay)*

Audley-Charles, M.G. (1965)- A geochemical study of Cretaceous ferromanganiferous sedimentary rocks from Timor. Geochimica Cosmochimica Acta 29, p. 1153-1173.
(*Manganese nodules nodules from Cretaceous Wai Bua Fm in W Timor very similar to Pacific deep sea nodules; nodules from E Timor perhaps shallower ? M Eocene Seical Fm ferromanganiferous, radiolarian-bearing pelagic limestones from N coast E Timor also look 'oceanic')*

Audley-Charles, M.G. (1965)- Some aspects of the chemistry of Cretaceous siliceous sedimentary rocks from Eastern Timor. Geochimica Cosmochimica Acta 29, 11, p. 1175-1192.
*(Chemical analysis of Cretaceous chert and radiolarites from E Timor indicate deposition in bathypelagic environment, paucity of land derived detritus, and analogy with modern biogenous deep-sea radiolarian ooze)*

Audley-Charles, M.G. (1967)- Greywackes with a primary matrix from the Viqueque formation, Upper Miocene-Pliocene, Timor. J. Sedimentary Petrology 37, 1, p. 5-11.

*(Silt-clay matrix of post-orogenic Mio-Pliocene Viqueque Fm is primary detrital deposit, not result of diagenesis of sand grains. Basal conglomerates contain metamorphic and volcanic rocks as well as Triassic limestone)*

Audley-Charles, M.G. (1967)- Petrology of a Lower Miocene polymict intracalcirudite from Timor. Sedimentary Geology 1, p. 247-257.
*(Base E Miocene Cablac Limestone is unconformity: polymict conglomerate, incl. a variety of carbonate rocks as well as volcanics, Cretaceous deep water carbonates and cherts, Triassic sandstones, etc.)*

Audley-Charles, M.G. (1968)- The geology of Portuguese Timor. Mem. Geol. Soc. London 4, p. 1-76.
*Classic E Timor study. Oldest dated rocks Lower Permian age. Metamorphic rocks interpreted as probably pre-Permian. Most formations autochthonous. Four formations completely allochthonous: Lolotoi Complex, Aileu Fm, Maubisse Fm and Bobonaro Scaly Clay. Bobonaro Scaly Clay emplaced as submarine gravity slide, and unlike other allochthonous formations does not rest on thrust-plane. 'Autochthonous' Aitutu Fm up to 1000m thick with rich, mainly Carnian-Norian faunas)*

Audley-Charles, M.G. (1972)- Cretaceous deep-sea manganese nodules on Timor: implications for tectonics and olistostrome development. Nature Physical Sci. 240, 102, p. 107-139.
*(Cretaceous manganese nodules of W Timor, first described by Molengraaff, resemble deep-sea nodules of modern oceans. Occur with micronodules in red clay similar to deep-sea red clays. Chemistry and physical characters suggest deposition on ocean floor, now at ~480m above sea level ('Maubisse seamounts' of Tethys Ocean, incorporated in Bobonaro melange))*

Audley-Charles, M.G. (1973)- Paleoenvironmental significance of chert in the Franciscan Formation of western California: discussion concerning the significance of chert in Timor. Geol. Soc. America (GSA) Bull. 84, p. 363-368.
*(Discussion of Chipping (1971) paper, who argued that cherts in Timor (following Grunau 1965) are 'important constituent' of melange and reflect subduction of oceanic crust beneath continental crust. However, chert is relatively insignificant in Timor melange and no evidence of subduction of oceanic crust below continental crust in Timor region since Early Permian. Chert in Timor reflects lack of supply of coarse terrigenous detritus and formed above sedimentary sequence on continental crust close to outer margin of continental slope)*

Audley-Charles, M.G. (1981)- Geometrical problems and implications of large-scale overthrusting in the Banda arc- Australian margin collision zone. In: K. McClay & N.J. Price (eds.) Thrust and nappe tectonics, Geol. Soc. London, Spec. Publ. 9, p. 407-416.
*(Geometrical problems in structural history interpretion of Australia-Banda Arc collision zone (mainly Timor area): (1) apparent absence of subduction trench and accretionary arc-trench gap in Banda Arc; (2) location of surface trace of Benioff zone before collision; (3) history of Benioff zone after Pliocene oceanic trench was destroyed; (4) relationship of developing fold- thrust belt to pre-collision geometry of Australia-New Guinea continental margin; (5) apparent absence of continental slope and rise in N Australia collision zone; (6) relationship of crystalline basement of Outer Banda Arc to cover rocks and (7) tectonic significance of apparent continuity of stratigraphically and structurally different Sunda and Banda Arcs. Australia- Banda arc collision associated deformation, represented by folding-imbrication of Australian continental rise sediments of Outer Banda Arc with emplacement of overthrust exotic sheets, was accomplished in 2 My. Geometrical considerations suggest Benioff zone and most of ~200 km wide arc-trench gap were overridden by Australian lithospheric plate during continued plate convergence of last 3 My. Banda Arc fold-thrust belt developed in proximal continental rise deposits at foot of Australian continental slope)*

Audley-Charles, M.G. (1986)- Timor-Tanimbar Trough: the foreland basin to the evolving Banda orogen. In: P.A. Allen & P. Homewood (eds.) Foreland Basins, Int. Assoc. Sedimentologists (IAS), Spec. Publ. 8, p. 91-102.

Audley-Charles, M.G. (1986)- Rates of Neogene and Quaternary tectonic movements in the Southern Banda arc based on micropalaeontology. J. Geol. Soc. London 143, p. 161-175.

*(Outer Banda Arc composed of highly deformed sediments that accumulated at Australian continental margin. Dating of onset of folding/uplift of Timor, from deep submarine position at end Neogene nappe emplacement, to mountains now 3 km high, indicates post-collision uplift rate initially 3 mm/yr, then slowed to ~1.5 mm/yr. Where Australian continental margin meets E end of present Java Trench Australian margin has overridden Trench in Timor region by 240 km. After nappe emplacement shortening of continental crust migrated towards Australian continent and shelf became involved in imbrication with shortening of cover rocks between nappes and present shelf edge amounting to ~40 km during last 2 Ma)*

Audley-Charles, M.G. (1990)- Triassic Aitutu Formation of Timor, Indonesia. In: Triassic biostratigraphy and paleogeography of Asia, ESCAP Atlas of Stratigraphy IX, Min. Res. Dev. Ser. 59, U.N., New York, p. 11-15.
*(Shortened version from Audley Charles (1968). Due to structural complexity and generally poor fossils, hard to do detailed stratigraphic studies. Deep marine Carnian- Norian Aitutu Fm thickness ~1000m, probably unconformable over Permian limestones. Basal series dark Tallibellis Mb mudstones, probably Norian age, overlain by Aitutu Fm radiolarian calcilutites (80%)/ shales (15%)/ calcarenites (5%), radiolarites, bituminous rocks with Halobia and Daonella. Top Aitutu Fm unconformable below E Jurassic Wai Luli Fm)*

Audley-Charles, M.G. (2011)- Tectonic post-collision processes in Timor. In: R. Hall et al. (eds.) The SE Asian gateway: history and tectonics of Australia-Asia collision, Geol. Soc. London, Spec. Publ. 355, p. 241-266.
*(Australian continental margin collided with Asian fore-arc at 4 Ma, transforming Banda Trench into Timor fold-thrust belt. Tectonic Collision Zone (TCZ) progressively filled by two Australian continental upper crust mega-sequences. Slowing subduction of Australian sub-crustal lithosphere after ~2.5 Ma led to uplift of TCZ that raised Timor 3 km above sea level. Asian Banda fore-arc deformation linked to ~30 km SE-wards rollback of subducting Australian lithosphere. Two Asian fore-arc nappes (Banda, Aileu-Maubisse) thrust S-wards from Banda fore-arc onto older of two highly deformed Australian continental margin upper crust mega-sequences. Wetar Suture created as thrust at base of Australian partially detached continental lower crust propagated into Asian fore-arc)*

Audley-Charles, M.G. & A.J. Barber (1976)- The significance of the metamorphic rocks of Timor of the Banda arc, Eastern Indonesia. Tectonophysics 30, p. 119-128.
*(All metamorphic rocks in Timor allochthonous. Three groups: lustrous slate, amphibolite-serpentinite, and granulite-amphibolite-greenschist complex. Granulite facies meta-anorthosite in Timor must have originated near continental mantle-crust boundary and may represent slices of ancient Asian continental basement. Metamorphic rocks of Seram remarkably similar to those of Timor. Overthrust directions of metamorphic rocks in Timor is S-ward, in Seram N-ward. Opposite thrusts may be explained in terms of Banda Arc acquiring sinuosity after emplacement of metamorphic rocks)*

Audley-Charles, M.G., A.J. Barber & D.J. Carter (1979)- Geosynclines and plate tectonics in Banda Arcs, Eastern Indonesia: Discussion American Assoc. Petrol. Geol. (AAPG) Bull. 63, p. 249-252.
*(Discussion of Crostella (1977) paper on Timor geology)*

Audley-Charles, M.G. & D.J. Carter (1972)- Palaeogeographical significance of some aspects of Palaeogene and Early Neogene stratigraphy and tectonics of the Timor Sea region. Palaeogeogr. Palaeoclim. Palaeoecology 11, p. 247-264.
*('Autochthonous' Early Miocene Cablac limestones unconformable on folded Early Eocene carbonates, which unconformably overlie metamorphic schists, implying Paleocene and ?Late Eocene- Oligocene? orogenic phase on Timor. Four Eocene facies on Timor, incl. Late Eocene limestones with Pellatispira and deep-water facies and volcanoclastics, all different from NW Australian Shelf and Timor Trough, where most of Tertiary is deepwater carbonate. Cretaceous- M Miocene paleogeography)*

Audley-Charles, M.G. & D.J. Carter (1974)- Petroleum prospects of the southern part of the Banda Arc, eastern Indonesia. Comm. Co-ord. Joint Prospecting Mineral Resources in Asian Offshore Areas (CCOP), Techn. Bull. 8, p. 55-70.
*(Mainly overview of geology of Timor, with comments on oil seeps and prospectivity of island)*

Audley-Charles, M.G. & R. Harris (1990)- Allochthonous terranes of the Southwest Pacific and Indonesia. Philos. Trans. Royal Soc. London 331, p. 571-587.
*(Timor is deformed Australian margin, overridden by allochthonous nappes. Lowest is 'Lolotoi metamorphics'- 'Palelo Arc' (basal metamorphics, Cretaceous-Eocene arc volcanics and marine sediments, unconformably overlain by mid-Eocene-Early Miocene carbonates; similar succession in Sumba; thrusted over Australian margin in latest Miocene). Second exotic terrane is Maubisse Permo-Triassic limestone with pillow basalts; supposedly most distal part of rifted Australian margin. Third terrane is 'supra-subduction zone' Ocussi ophiolite, now being thrust over N Timor margin)*

Audley-Charles, M.G. & R. Harris (1990)- Allochthonous terranes of the Southwest Pacific and Indonesia. Philos. Trans. Royal Soc. London A331, p. 571-587.
*(Mainly on Timor island. Deformed Australian margin, overridden by three allochthonous nappes)*

Audley-Charles, M.G. & J.S. Milsom (1974)- Comment on ôPlate convergence, transcurrent faults, and internal deformation adjacent to southeast Asia and the western Pacificö. J. Geophysical Research 79, 32, p. 4980-4981.
*(online at: http://searg.rhul.ac.uk/pubs/audley-charles_milsom_hamilton_1974%20discussion%20of%20Fitch%20Weber%20deep.pdf)*
*(A&M suggest Timor Trough and its eastward extensions are 'downbuckle in continental crust, with limited underthrusting', not surface trace of subduction zone. See also reply by Fitch and Hamilton (1974), who still do interpret this as subduction zone that continues East uninterrupted from Java Trench, based in part on Shell Group seismic profiles across N side of Timor Trough showing large-scale S-ward directed overthrusts and imbrications)*

Aulia, D., S.H. Sinaga, R. Adiarsa, F. Alôayubie, I.B. Arindra, F. Nikmata & I. Rodelian (2011)- Petrology and provenance of sandstone from Mesozoic sequence Soe-Kapan Block, West Timor, NTT. Proc. 35th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA11- SG-034, 12p.
*(Sandstones (lithic arenites) from Soe-Kapan Block, SW Timor: Permian Bisane Fm (quartz 45-57%, feldspar 9-13%, lithic fragments 9-19% (andesite, diorite, carbonate, sandstone, chert, schist and phyllite) and Triassic Aitutu Fm (quartz 31-72%, feldspar 9-39%, lithics 5-21%). Most likely provenance recycled orogen. Flute casts in Aitutu Fm indicate dominant NW to SE transport directions)*

Bachri, S. (1995)- The origin of the Aileu and Maubisse Formations in the East Timor area, Indonesia. In: J. Ringis (ed.) Proc. 31st Sess. Comm. Co-ord. Joint Prospecting Mineral Resources in Asian Offshore Areas (CCOP), Kuala Lumpur 1994, 2, p. 232-241.
*(Aileu Fm metamorphics at N coast of E Timor decrease in metamorphic grade in S direction and grade into both Permian Maubisse Fm and Jurassic Wai Luli Fm, suggesting it is composed of metamorphosed Permian and Jurassic NW Australian passive margin sediments)*

Bachri, S. (2004)- The relationships between the formation of the multi-genesis chaotic rocks and the Neogene tectonic evolution in Timor. J. Sumber Daya Geologi 14, 3, p. 94-100.
*(Chaotic rocks of Bobonaro Complex of Timor occupy 40% of Timor island. Composed of scaly matrix with exotic blocks of Permian- Quaternary(?) age. Scaly clay matrix rich in deep marine foraminifera, varying in age from Triassic, Mesozoic and Late Cretacous. Generated in multiple ways: mainly sedimentary olistostrome, less common tectonic melange and shale diapirs. Tectonic melange formed since N-dipping subduction in Paleogene. Arc-continent collision since E Neogene, with shale diapirs and olistostrome at beginning of collision. Olistostrome may have covered most of tectonic melange, which is probly older. After subduction ceased in post-Neogene shale diapirism continued)*

Bachri, S. (2008)- Formasi Maubisse dan Aileu di bagian Barat Timor Leste dalam kerangka tektonostratigrafi Pulau Timor. J. Sumber Daya Geologi 18, 5, p. 281-289.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/254/234)*
*('The Maubisse and Aileu Formations in the west of East Timor, in the framework of Timor tectonostratraphy'. Position of Maubisse and Aileu Fms in Timor Leste controversial, but tendency to place them in para-autochthonous sequence. Formations transitional relationships with overlying para-autochthonous Wailuli Fm.*

*Paleontological evidence indicates Maubisse Fm derived from Australian continent, and related Aileu Fm was located on NW flank of Australia until Neogene arc-continent collision event)*

Bachri, S. (2011)- Tektonostratigrafi Busur Banda dengan referensi bagian barat Timor Leste dan bagian timur Pulau Seram. J. Sumber Daya Geologi 21, 2, p. 53-62.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/135/132)*
*('Tectonostratigraphy of the Banda Arc, with reference to the western part of Timor Leste and the eastern part of Seram'. Timor and Seram similar parts of Banda Outer Arc collision zone between Australia NW Shelf and Banda Arc subduction system. Three tectonostratigraphic sequences of differents origins: (1) para-autochthonous sequence, derived from Australia; (2) Banda forearc sequence (allochthonous sequence), nappe structures overthrust on para-autochthonous sequence; (3) autochthonous sequence unconformably over previous sequences. Bobonaro olistostrome unit of Timor Island can be compared with Salas Complex on Seram. Lolotoi metamorphic complex on Timor Island can be correlated with Kobipoto Complex on Seram Island, forming basement of para-autochthonous sequence)*

Bachri, S., B. Hermanto & E. Partoyo (1995)- Genesa kompleks Bobonaro di Timor Timur. J. Geologi Sumberdaya Mineral 5, 45, p. 17-22.
*('Genesis of the Bobonaro Complex in East Timor'. Bobonaro Complex of Timor multiple genesis:(1) mainly deep marine M Pliocene olistostromal deposits, (2) minor tectonic melange, and (3) minor part formed by shale diapirism and mud volcano activity. Matrix with planktonic foraminifera suggest age range within Late Miocene- E Pliocene (zones N14-N19) and in deep marine setting based on benthic foraminifera like Planulina wuellerstorfi, Favocassidulina, etc. Overlying Viqueque Fm marls with Late Pliocene- E Pleistocene (N21-N22) planktonics)*

Bachri, S. & A.K. Permana (2015)- Tektonostratigrafi cekungan Timor di bagian barat Pulau Timor. J. Geologi Sumberdaya Mineral 16, 2, p. 79-91.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/43)*
*('Tectonostratigraphy of Timor Basin in Western Timor'. Brief review of W Timor tectonostratigraphy)*

Bachri, S. & R.L. Situmorang (1994)- Geological map of the Dili Sheet, East Timor, Scale: 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung.
*(Geologic map of western part of Timor Leste, With Late Miocene (Bobonaro complex)- Pliocene-Pleistocene Autochthonous, E Miocene Allochthonous (Cablac Lst, on Lolotoi Metamorphics and Maubisse Fm) and Permian- Eocene 'Australia margin' Para-autochthonous units. Area S of Dili mainly Permian Aileu Fm metamorphics over Permian Maubisse Fm)*

Baik, R.N. & K. Sahudi (1993)- Play concepts of hydrocarbon exploration in East Timor. Proc. 22nd Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 2, p. 913-924.

Bakhtiar, A. (1984)- Geologi daerah Kapan, Kabupaten Timor Tengah Selatan, Nusa Tenggara Timur. Ph.D. Thesis, Inst. Teknologi Bandung (ITB), p. 1-425. *(Unpublished)*
*(The geology of the Kapan area, Kapubaten S Central Timor, NTT province)*

Bakker, R.R. (2011)- Surface uplift in worldôs youngest orogen, can crustal thickening explain the uplift in Timor? M.Sc. Thesis, University of Utrecht, p. 1-32. *(Unpublished)*
*(online at: http://dspace.library.uu.nl/handle/1874/208928)*
*(Recent uplift of Timor may be explained by buildup of fold-and-thrust belt. Age model and paleobathymetry using benthic foraminifera used to reconstruct uplift history of syn-orogenic Viqueque Fm basin. Timor uplifted in two phases (1) very low rates during deposition of lower Viqueque Fm; (2) followed by rapid uplift, up to ~3 mm/yr. Homogeneous thickening of fold-and-thrust belt not enough to explain rapid uplift. Slab detachment unlikely cause because there is no evidence that slab has broken off. Delamination most likely process)*

Bando, Y. & K. Kobayashi (1981)- Upper Triassic cephalopods from Eastern Timor (Paleontological Study of Eastern Timor 6). Mem. Fac. Education Kagawa University, II, 31, 1, p. 57-142.

Barber, A.J. (1978)- Structural interpretations of the island of Timor, Eastern Indonesia. SEAPEX Proc. 4, Singapore 1977/1978, p. 9-21.
*(Timor evolution model with 'Lolotoi microcontinent' breaking off Australia in Jurassic, colliding with Sundaland in Early K, separating from Sundaland in Late K- Paleocene, colliding with Australia in Pliocene)*

Barber, A.J. (1981)- Structural interpretations of the island of Timor, eastern Indonesia. In: A.J. Barber & S. Wiryosujono (eds.) The geology and tectonics of Eastern Indonesia, Proc. CCOP-IOC SEATAR Working Group Mtg., Bandung 1979, Geol. Res. Dev. Centre (GRDC), Bandung, Spec. Publ. 2, Bandung, p. 183-197. *( (online at: http://searg.rhul.ac.uk/pubs/barber_1981%20Timor%20structure.pdf)*
*(Reprint of Barber (1978) SEAPEX paper. Three interpretations of structure of Timor: imbricate melange model of Hamilton 1979, overthrust model of Audley Charles et al., upthrust model of Chamalaun & Grady (1978). New model incorporates elements of all three models: Late Jurassic breakup of piece of Australia, Cretaceous collision with Sundaland, Eocene breakup of Sundaland margin during Banda Sea opening and Pliocene collision of 'Lolotoi microcontinent' with Australia)*

Barber, A.J. (1991)- The origin of melange in the Timor collision complex. Proc. Silver Jubilee Symposium on the dynamics of subduction and its products, Yogyakarta, LIPI, p. 53-61.

Barber, A.J. & M.G. Audley-Charles (1976)- The significance of the metamorphic rocks of Timor in the development of the Banda Arc, eastern Indonesia. Tectonophysics 30, p. 119-128.
*(All metamorphic massifs on Timor are allochthonous. Various grade metamorphic rocks on Timor. Three distinct metamorphic grade groups: lustrous slate, amphibolite-serpentinite and granulite- amphibolite-greenschist complex. Highest grade metamorphic rocks (granulite facies) in Booi massif. Amphibolite facies in many massifs through Timor. Many high-grade metamorphic rocks affected by subsequent lower grade (greenschist) metamorphism. High-grade metamorphic rocks interpreted as fragments of ancient continental crust, perhaps from Asia/ Sundaland)*

Barber, A.J., M.G. Audley-Charles & D.J. Carter (1977)- Thrust tectonics in Timor. J. Geol. Soc. Australia 24, p. 51-62.
*(Reply to Grady (1975) who argued structure of Timor can be interpreted without major overthrusting. Reasons for major overthrusting restated here and tied to collision between Australian continental margin and detached portion of Asiatic continental margin. Timor is series of overlapping thrust slices, resting on folded sediments of Australian continental shelf. Kolbano lowest thrust sheet, composed of deformed deep-water calcilutites. Followed to N by Lolotoi thrust sheet (metamorphics with unmetamorphosed ophiolites, clastic sediments and massive Miocene limestones). Overlying this group to N is Maubisse-Aileu thrust sheet (with Permian crinoidal limestones and volcanics in S, passing N into shales and sandstones, with increase in deformation and metamorphism from S to N. Slates in S pass into amphibolite facies on N coast of E Timor. A further thrust-slice composed of ophiolites rests on this thrust unit on N coast of W Timor between Wini and Atapupu. Mesozoic cherts sandwiched between metamorphic thrust sheets and 'autochthonous' Bisane Fm Permian clastics suggest ocean floor separated this from Maubisse Fm Permian carbonates)*

Barber, A.J. & K. Brown (1988)- Mud diapirism: the origin of melanges in accretionary prisms? Geology Today 4, p. 89-94.
*(Chaotic melange deposits, mixed blocks in clay matrix, commonly attributed to submarine slumping, but in accretionary complexes shale diapirism produces large volumes of melange. With examples from Timor mud volcanoes and associated deposits of Bobonaro scaly clay with blocks)*

Barber, A.J., S. Tjokrosapoetro & T.R. Charlton (1986)- Mud volcanoes, shale diapirs, wrench faults and melanges in accretionary complexes, Eastern Indonesia. American Assoc. Petrol. Geol. (AAPG) Bull. 70, p. 1729-1741.
*(Timor mud volcanoes. Bobonaro scaly clay commonly interpeted as melange or olistostrome, but more likely product of shale diapyrism)*

Barkham, S.T. (1993)- The structure and stratigraphy of the Permo-Triassic carbonate formations of West Timor, Indonesia. Ph.D. Thesis University of London, p. 1-379. *(Unpublished)*
*(Detailed study of Permian (Maubisse)- Triassic (Aitutu) carbonates of W Timor. Focus areas: SW of Soe (Late Triassic Aitutu Fm pelagic radiolarian-mollusc (Halobia- Monotis) limestones-marls in Noil Meto), Bisnain and Laktitus areas. Includes reports of E Permian fusulinids from Maubisse Fm)*

Bassler, R. (1929)- The Permian bryozoa of Timor. In: Palaontologie von Timor, Schweizerbart, Stuttgart, 16, Lieferung 28, p. 37-90.
*(Principal (and only?) work on Permian bryozoa of Timor from Wanner and Molengraaff collections. Faunas generally poorly preserved. Artinskian Bitauni Beds sparse bryozoan fauna, early Late Permian Basleo beds more abundant, overlying Amarassi beds sparse bryozoan. Some species, like Fistulipora timorensis, rel. widespread in M-U Permian of Tethys region. Also Ulrichotrypa, Rhombopora, Streblotrypa, Fenestella, Polypora, etc.)*

Bather, F.A. (1920)- Reviews: Echinoid or crinoid? Geol. Magazine 57, 8, p. 371-372.
*(Discusses genus Timorocidaris described by Wanner (1920, Uber einige Palaeozoische Seeigelstacheln...) from Permian of Timor. Believed to be echinoid radiole by Wanner, but may be crinoid fragments)*

Bather, F.A. (1929)- Triassic echinoderms of Timor. In: J. Wanner (ed.) Palaeontologie von Timor, Schweizerbart, Stuttgart, 16, 30, p. 214-272.
*(Description of probably Upper Triassic crinoid fragments (incl. pentacrinids Isocrinus spp.) and echinoids (Miocidaris timorensis n.sp.)*

Belford, D.J. (1960)- Micropalaeontology of samples from Ossulari No. 1 and No. 1A bores, Portuguese Timor. Bureau Mineral Res., Canberra, Record 1960/33, p. 1-2.
*(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10621)*
*(Summary of analysis of cutting samples from well Ossulari 1 (2840'-3010') and Ossulari 1a (2960'-3100'). All contain mixed Permian, Jurassic-Cretaceous and ?Miocene fauna)*

Belford, D.J. (1960)- Micropalaeontology of samples from Portuguese Timor. Bureau Mineral Res., Canberra, Record 1960/98, p. 1-6.
*(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10686)*
*(Biostrat of 76 outcrop samples collected by Timor Oil Co in Timor Leste. Oldest rocks with Permian foraminifera and one sample with mollusc Atomodesma exarata. Tertiary samples M-U Eocene (with Nummulites and planktonics and reworked U Cretaceous plankton), Lower Miocene (Te with Spiroclypeus and reworked U Cretaceous Globotruncana limestone) and pelagic U Miocene (more likely Plio-Pleistocene; JTvG). Also several samples rich in radiolaria, probably Mesozoic. No locality maps))*

Belford, D.J. (1961)- Micropalaeontology of samples from Portuguese Timor. Bureau Mineral Res., Canberra, Record 1961/6, p. 1-5.
*(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10733)*
*(Biostrat of 56 outcrop samples collected by Timor Oil Co. Oldest samples are of Permian age (foraminifera). Radiolarian-rich sediments are probably of Triassic age (probable Halobia). Also Eocene limestone with Alveolina and planktonics-rich U Miocene sediments (more likely Pliocene?; JTvG; one sample with reworked Permian). No locality maps)*

Belford, D.J. (1961)- Micropalaeontology of samples from Matai No. 1 bore, Portuguese Timor. Bureau Mineral Res., Canberra, Record 1961/31, p. 1-3.
*(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10758)*
*(Summary of biostratigraphy of Matai 1 cuttings (370'- 2000'). Interval 370-760' regarded as 'block clay' of Upper Miocene age (but faunal lists include Pleistocene Gr. truncatulinoides and Hyalinea balthica; JTvG) with reworked Upper Cretaceous and Eocene forams. Eocene limestone with Discocyclina and Alveolina rel. common at 760-830'. Also limestone chips between 880-1000' with Late Eocene Discocylina and Pellatispira, but not sure if in situ. Sample gap between 1040-1300', and no microfossils observed between 1300-2000')*

Benincasa, A. (2009)- The geology of Mount Mundo Perdido, Timor Leste. Thesis University of Western Australia, Perth, p. 1-169. *(Unpublished)*
*(Mt Mundo Perdido 1750m high massif, originally interpreted as coherent block of Lower Miocene Cablac Limestone, but is complex of rock types of different ages and tectonostratigraphic affinities, including 'Gondwanan affinity' Triassic-Jurassic carbonates, Cretaceous- Oligocene pelagites (pink-white Cretaceous, red shaly Eocene), 'Banda-Terrane' earliest Miocene limestones on Barique Fm mafic island arc volcanics and associated with gabbros and schists, and Plio-Pleistocene synorogenic(?) deposits. Dominant structures late stage, high-angle, oblique-slip faults, probably in sinistral strike-slip zone)*

Benincasa, A. (2015)- The 'fatus' of East Timor: stratigraphy and structure. Ph.D. Thesis University of Western Australia, Perth, p. 1-504.
*(online at: http://research-repository.uwa.edu.au/files/5338890/Benincasa_Aaron_2015.pdf)*
*(Studies of isolated limestone peaks ('fatus') of Timor Leste, incl. Mt Mundo Perdido, Laritame, Builo, Bibileu, Paitchau, Matebian, etc. Many previously mapped as mainly Miocene Cablac Limestone, but cores of all fatus contain Late Triassic- E Jurassic shallow water limestones associated with Triassic- Jurassic rift deposits, Cretaceous-Oligocene pelagic limestones, Asian-affinity limestones and volcanics, etc. Many fatus are pop-up structures, with recent high-angle oblique slip and strike-slip faults (map suggests all are associated with Banda Terrane?))*

Benincasa, A., M. Keep & D. Haig (2012)- A restraining bend in a young collisional margin: Mount Mundo Perdido, East Timor. Australian J. Earth Sci. 59, 6, p. 859-876.
*(With Appendix 1 online at: www.gsa.org.au/pdfdocuments/AJES_Supplementary%20Papers/59-6%20supp%20papers_Benincasa%20et%20al%20AJES%20.pdf)*
*(Mt Mundo Perdido 1 km NW of Ossu. Like Mt Cablac, originally mapped as Miocene 'Cablac Lst', but has core of highly deformed (Late Triassic?)- E Jurassic oncoidal- ooid limestone, overlain by bathyal latest Jurassic- E Cretaceous calpionellid/ Inoceramus wackestone and mid-Cretaceous-Oligocene pelagic limestones. It is surrounded (looks like overlain?; JTvG) by less-deformed latest Oligocene- earliest Miocene (N4) Booi Limestones and Pleistocene bathyal limestones. Structure dominated by high angle, oblique-slip and strike-slip faults that were active into Pleistocene, comparable to pop-up structures at restraining bends within E-W zone of sinistral strike-slip. Appendix 1 documents E Jurassic age of 'Perdido Limestone' algal limestone (incl. Thaumatoporella ?parvovesiculifera and agglutinated forams (Siphovalvulina, Duotaxis))*

Berry, R.F. (1979)- Deformation and metamorphism of the Aileu Formation, East Timor. Ph.D. Thesis, School of Earth Sciences, Flinders University of South Australia, p. 1-393.
*(online at: http://eprints.utas.edu.au/11496/2/Whole-Berry,_R.F.,_PhD_(Flinders),_1979.pdf))*
*(Aileu Fm along N coast of E Timor composed of metamorphosed shales, siltstones and arenites with minor limestones and basites. Greater proportion of coarser and quartz-rich sediment towards N coast. Fossils rare, dominated by crinoid ossicles, probably Permian age. Metamorphic grade lower greenschist facies in SW, almandine-amphibolite facies in NE. Amphibolite and schists with marble close in composition to Permian Maubisse Fm. On N coast of E Timor is Hili Manu peridotite, faulted against Aileu Fm in S; Iherzolite and serpentinite abut Aileu Fm at highest metamorphic grade (p. 239). Five structural phases recognised. K/Ar ages of hornblendes from amphibolites 7.7- 16.5 Ma, mean 11.3 Ma. Geology of Timor consistent with evolution as rift valley in Late Paleozoic-Early Mesozoic and trailing margin from Cretaceous- E Miocene, Late Miocene arc-continent collision followed by uplift and minor Plio-Pleistocene deformation)*

Berry, R.F. (1981)- Petrology of the Hili Manu lherzolite, East Timor. J. Geol. Soc. Australia 28, 4, p. 453-469.
*(Spinel lherzolite outcrop on N coast of E Timor. Most common rock-type clinopyroxene-poor lherzolite, but also clinopyroxene-rich lherzolite and harzburgite. Three events indicated by geothermometry (1) coarse exsolution lamellae of orthopyroxene in clinopyroxene porphyroclasts (1250°C); (2) granoblastic texture equilibrated at 1100°C; and (3) rocks mylonitised at 800-1000°C. Peridotite probably oceanic upper mantle trapped between Java Trench and Inner Banda Arc)*

Berry, R.F., C. Burrett & M. Banks (1984)- New Triassic faunas from East Timor and their tectonic significance. Geologica et Palaeontologica 18, p. 127-137.
*(Conodonts from red ammonoid-bearing limestone 6 km W of Manatuto, previously assigned to Permian Maubisse Fm, contains Upper Smithian (E Triassic), Tethyan conodonts. Area previously interpreted as thrusted, with inverted ages (Permian on Triassic), but probably simple Triassic stratigraphic succession and structure mainly steeply dipping normal faults. Conodonts well-preserved with CAI of 1, suggesting rel. low paleotemperatures <100°C)*

Berry, R.F. & A.E. Grady (1981)- Deformation and metamorphism of the Aileu Formation, North coast, East Timor and its tectonic significance. J. Structural Geol. 3, p. 143-167.
*(Aileu Fm at N coast of Timor probably metamorphosed Permian (+ Jurassic?) flysch. Metamorphism increasing from low greenschist facies in SW to upper amphibolite facies in E. Five deformation phases; second phase post-dates metamorphic maximum (Jurassic?), produced tight folds and may be Late Miocene. Metamorphic maximum occurred before 11 Ma)*

Berry, R.F. & A.E. Grady (1981)- The age of the major orogenesis in Timor. In: A.J. Barber & S. Wiryosujono (eds.) The geology and tectonics of Eastern Indonesia. Proc. CCOP-IOC Working Group Meeting, Bandung 1979, Geol. Res. Dev. Centre (GRDC), Bandung (GRDC), Spec. Publ. 2, p. 171-181.
*(Radiometric dates of N coast E Timor Aileu Fm metamorphic rocks suggest metamorphism peak before Late Miocene (8-9 Ma; possibly even before 70 Ma; Harris & Long 2001), with most intense deformation probably between 11-6 Ma)*

Berry, R.F. & G.A. Jenner (1982)- Basalt geochemistry as a test of the tectonic models of Timor. J. Geol. Soc. 139, 5, p. 593-604.
*(Geochemistry of metamorphosed Permo-Triassic basic volcanics on Timor from both 'allochthonous' and parautochthonous' formations are all consistent with rift or ocean floor setting; no calc-alkaline arc volcanics)*

Berry, R.F. & I. McDougall (1986)- Interpretation of 40Ar/39Ar and K/Ar dating evidence from the Aileu Formation, East Timor, Indonesia. Chemical Geology 59, p. 43-58.
*(Aileu Fm-Maubisse metamorphics retrograde metamorphism (=collision?) at 8 Ma. Cooling to 300°C by 5.5 Ma)*

Berry, R., J. Thompson, S. Meffre & K. Goemann (2016)- U-Th-Pb monazite dating and the timing of arcï continent collision in East Timor. Australian J. Earth Sci. 63, 4, p. 367-377.
*(Metamorphic age of highest-grade rocks formed in Timor arc-collision collision remains controversial. U-Th-Pb dating of monazite from Aileu Fm amphibolite-grade schists suggests peak metamorphism at 5.5-4.7 Ma)*

Beyrich, E. (1862)- Gebirgsarten und Versteinerungen von Koepang auf Timor. Zeitschrift Deutschen Geol. Gesellschaft 14, p. 537.
*(online at: https://archive.org/details/zeitschriftderd141862deut)*
*('Mountain types and fossils from Kupang on Timor'. First brief note on Late Paleozoic fossils of Timor (brachiopods, crinoids), collected by Dr. Schneider and being studied by Beyrich))*

Beyrich, E. (1865)- Uber eine Kohlenkalk-Fauna von Timor. Abhandl. Konigl. Akad. Wissensch. Berlin, 1864, p. 59-98.
*('On a Carboniferous fauna from Timor'. First description of 'Carboniferous' (now accepted as Late Permian) limestone fauna from Timor, collected in Kupang area by Dr. Schneider. Includes mollusc genus Atomodesma, solitary rugose coral Zaphrentis, new brachiopod species Spirifer kupangensis (= Arcullina; Waterhouse 2004), Rhynchonella timorensis (assigned to Uncinunellina timorensis by later authors; JTvG), etc.)*

Bird, P.R. (1987)- The geology of the Permo-Triassic rocks of Kekneno, West Timor. Ph.D. Thesis, University of London, p. 1-264. *(Unpublished)*
*(Structure, stratigraphy and sedimentology of 'parautochthonous' mainly fine clastic Permo-Triassic in Kekneno area. Sandstone petrography shows Timor Permian sands less mature than those of NW Shelf of*

*Australia. Paleocurrents mainly towards WSW, suggesting source from E (Arafura) and/or N (terrane removed in Jurassic rifting), not from NW Shelf. Slice of Banda fore-arc basement obducted over parautochthonous, with fossiliferous Permian Maubisse carbonates and volcanics very different from parautochton)*

Bird, P.R., K. Brata & I. Umar (1989)- Sedimentation and deformation of the Permo-Triassic of Kekneno, West Timor: from intracratonic basin to accretionary complex. In: B. Situmorang (ed.) Proc. 6th Regional Conf. Geology mineral and hydrocarbon resources of SE Asia (GEOSEA VI), Jakarta 1987, IAGI, p. 3-23.
*(Permian and Triassic turbiditic marine clastics in Kekneno area of Timor considered deposited in intra-cratonic basin near NW margin of Gondwana. Thickness hard to estimate due to common imbrication along mainly N-dipping thrust planes. Oldest formation Atahoc Fm, >600m thick, with common ammonites of Sakmarian Properrinites zone; in E with pillow lavas near top. Overlain by Kungurian Cribas Fm with Atomodesma, 400m thick, current ripple directions to SE. Sandstones petrologically much less mature than age-equivalent rocks of NW Australia Shelf, indicating Timor sediments not derived from Australian hinterland. Paleocurrents show sediment transport predominantly to WSW secondary transport to SE. Northerly source removed by Jurassic rifting. Kekneno Permo-Triassic overthrusted by Mutis allochthon (W-ward thrusting?))*

Bird, P.R. & S.E. Cook (1991)- Permo-Triassic successions of the Kekneno area, West Timor: implications for palaeogeography and basin evolution. J. Southeast Asian Earth Sci. 6, 3-4, p. 359-371.
*(Permian sandstones less mature and different heavy mineral assemblages from Bonaparte/Timor Sea equivalents. This and Permian paleocurrent data suggests mainly northerly provenance of Timor Permian. Late Triassic Babulu Fm turbidites dominant sediment transport directions NE to SW or E to W)*

Bless, M.J.M. (1987)- Lower Permian ostracodes from Timor (Indonesia). Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, B, 90, 1, p. 1-13.
*(Lower Permian (Sakmarian- Artinskian) ostracodes from Bitauni, Mutis, Nono Ofien and Noil Toensieh in W Timor. Diverse 'Thuringian-type' assemblages with 40 species, usually interpreted as deep marine, as also suggested by Grundel & Kozur 1975)*

Boehm, G. (1908)- Jura von Rotti, Timor, Babar und Buru. In: G. Boehm (ed.) Geol. Mitteilungen Indo-Australischen Archipel VIc, Neues Jahrbuch Mineral. Geol. Palaeont., Beilage Band 25, p. 324-343.
*('The Jurassic of Roti, Timor, Babar and Buru'. Descriptions of Jurassic brachiopods (Rhynchonella) and ammonites (Phylloceras, Perisphinctes from Buru; Aegoceras, Harpoceras, Stephanoceras, Macrocephalites from Batu Berketak Roti; Stephanoceras from Babar and Perispinctes from Timor), all collected by Verbeek)*

Boehm, G. & F.A. Bather (1908)- Jungeres Palaozoikum von Timor. In: G. Boehm (ed.) Geol. Mitteilungen Indo-Australischen Archipel VIb, Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 25, p. 303-323.
*('Young Paleozoic of Timor'. First description of two Permian blastoids from Timor, collected by Verbeek in 1899 from Bisano Hill S of Baung (Schizoblastus (now called Deltablastus), Schizoblastus timorensis and S. delta). Associated with Spirifer lineatus, Nautilus, ammonoid Agathiceras timorense n.sp., trilobite Phillipsia)*

Boger, S.D. (2012)- The Aileu Formation of Timor Leste. First Int. Geological Congress of Geology of Timor-Leste, Dili 2012, p. 85. *(Abstract only)*

Boger, S.D., L.G. Spelbrink, R.I. Lee, M. Sandiford, R. Maas & J.D. Woodhead (2017)- Isotopic (U-Pb, Nd) and geochemical constraints on the origins of the Aileu and Gondwana sequences of Timor. J. Asian Earth Sci. 134, p. 330-351.
*(Detrital zircon U-Pb age data from Aileu Complex and 'Gondwana Sequence' of Timor, indicate both derived from common source with 200-600 Ma, 900-1250 Ma and 1450-1900 Ma zircons. Most significant age population ~260 Ma. Similar spectrum of ages along E active margin of Pangea, today best exposed along NE coast of Australia. Mudstones of Aileu Complex more siliceous and other chemical differences from 'Gondwana Sequence', so possibly eroded from different sections of margin and deposited in separate basins. Present proximity result of Pliocene- Recent collision between N Australia plate and Banda Arc)*

Boutakoff, N. (1965)- Geological investigations in Portuguese Timor. Report for Timor Oil Ltd, R05372, p..

*(Unpublished; mainly discussion of some drilled and undrilled anticlines; no maps, good cross-sections)*

Boutakoff, N. (1968)- Oil prospects of Timor and the Outer Banda Arc, SE Asia. Australian Oil and Gas Review14, p. 44-55.

Boz, A., M. Bakhrudin, P. Bernardelli, F. Coraggio, A. Ardjuna & A. Radityo (2014)- Potential field data acquisition and interpretation supporting exploration activities in The West Timor PSC area. Proc. 38th Ann. Conv., Indon. Petroleum Assoc. (IPA), Jakarta, IPA14-G-0547, 20p.
*(Potential fields data acquired over parts of W Timor. No details on geo-structural interpretation)*

Breimer, A. & D.B. Macurda (1965)- On the systematic position of some blastoid genera from the Permian of Timor. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, B68, p. 209-217.

Breimer, A. & D.B. Macurda (1972)- The phylogeny of the fissiculate blastoids. Verhandelingen Kon. Nederl. Akademie Wetenschappen, Amsterdam, ser. 1, 26, 3, p. 1-390.
*(online at: www.dwc.knaw.nl/DL/publications/PU00011028.pdf)*
*(Monograph on Paleozoic fissiculate blastoids (echinoderms). Mainly taxonomy, anatomy and phylogeny, also discussions of geographic distribution (worldwide), stratigraphic distribution (Silurian- Permian) and paleoecology (open marine, attached to limy-muddy seafloors). Most extensive development of Permian fissiculates is on Timor, associated with tuffs (12 genera; all in allochthonous blocks). Main collecting area Basleo, with many endemic species. Some also in other areas, e.g. Pterotoblastus gracilis in Thailand)*

Broili, F. (1915)- Permische Brachiopoden der Insel Letti. Jaarboek Mijnwezen Nederlandsch Oost-Indie 43 (1914) Verhandelingen 1, p. 187-207.
*('Permian brachiopods from Leti Island' (E of Timor). Small brachiopod fauna collected by Molengraaff. With Productus spp., Chonetes strophomenoides, Spirifer spp., Martinia nucula, Retzia, Dielasma and Notothyris)*

Broili, F. (1916)- Die Permischen Brachiopoden von Timor. In: J. Wanner (ed.) Palaeontologie von Timor, Schweizerbart, Stuttgart, VII, 12, p. 1-104.
*('The Permian brachiopods of Timor'. Descriptions of 46 species in material from numerous localities in W and some from E Timor, collected by Wanner and Molengraaff (mainly from Basleo= late M Permian?; JTvG). Many are long-ranging and widely distributed Tethys forms, incl. Productus, Spirifer, Spirigera, Retzia, Camarophoria, Dielasma, etc. Rare Lyttonia (Leptodus) cf. tenuis from Basleo and Amarassi/ Niki-Niki areas)*

Broili, F. (1922)- Permische Brachiopoden von Rotti. Jaarboek Mijnwezen Nederlandsch Oost-Indie 49 (1920), Verhandelingen 3, p. 223-227. (Nederlandsche Timor expeditie 1910-1912).
*(Brief description of Permian brachiopods from Roti island, W of Timor, sampled by Brouwer in 1912. Species rel. long-ranging, incl. Derbya beyrichii, Productus waageni, Productus cf. semireticulatus, Spirifer fasciger, Spirigera timorensis, Retzia radialis, Camarophoria purdoni, Notothyris, etc.)*

Broili, F. (1931)- Mixosauridae von Timor. Wetenschappelijke Mededeelingen Dienst Mijnbouw Nederlandsch-Indie 17, p. 3-10.
*(Vertebrae collected from clays with manganese nodules and ammonites by Jonker in 1873 in NE part of W Timor near E Timor border ('Wai Loelik/ Ramea, Beloe district'). Looks like primitive Ichtyosaurus group and described as Mixosaurus timorensis n.sp.. Age probably Triassic (manganese nodules known in Timor-Roti from Upper Triassic, Jurassic and Upper Cretaceous; JTvG; see also Zammit, 2010))*

Brouwer, H.A. (1913)- Neue Funde von Gesteinen der Alkalireihe auf Timor. Centralblatt Mineralogie Geologie Palaont. 1913, p. 570-576.
*(online at: www.biodiversitylibrary.org/item/192907#page/594/mode/1up)*
*('New finds of rocks of the alkali series on Timor'. Descriptions of basic igneous-volcanic rocks collected during Molengraaff Timor Expedition. Some associated with Permian sediments. No figures)*

Brouwer, H.A. (1914)- Neue Funde von Gesteinen der Alkalireihe auf Timor (Zweite Mitteilung). Centralblatt Mineral. Geol. Palaont. 1914, p. 741-745.
*(online at: https://babel.hathitrust.org/cgi/pt?id=uc1.b4291847;view=1up;seq=767)*
*('New finds of rocks of the alkali series on Timor'- Part 2. Brief note on reddish alkalirhyolites SW of Sufa collected during Molengraaff West Timor Expedition. (No figures or details on geologic setting))*

Brouwer, H.A. (1914)- Voorlopig overzicht der geologie van het eiland Roti. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 31, p. 611-617.
*('Preliminary overview of the geology of Roti island'. December 1911-January 1912 visit found 'Timor-like' intensely folded Permian- Eocene section. Permian marls with brachiopods, coral, etc., on basaltic rock. Upper Triassic deep water Halobia-Daonella limestone with radiolarian chert and mica-sandstones. Jurassic dark marls with some belemnites, ammonites, locally rich in manganese nodules. One locality of Eocene Nummulites-alveolinid limestone. Unconformably overlain by young reefal limestones, some elevated to over 400m. Active mud volcanoes)*

Brouwer, H.A. (1915)- Gesteenten van het eiland Letti. Nederlandsche Timor Expeditie, I, Jaarboek Mijnwezen Nederlandsch Oost-Indie 43 (1914), Verhandelingen, p. 89-160.
*('Rocks from Leti Island', E of Timor)*

Brouwer, H.A. (1918)- Gesteenten van het eiland Moa. In: Nederlandsche Timor-expeditie, II. Jaarboek Mijnwezen Nederlandsch Oost-Indie 45 (1916), Verhandelingen 1, p. 13-34.
*('Rocks from Moa Island'. Petrographic descriptions of gabbros, diorites, lherzolites, phyllites and crystalline limestones from Moa island E of Timor)*

Brouwer, H.A. (1918)- Geologie van een gedeelte van het eiland Moa. In: Nederlandsche Timor-expeditie, II. Jaarboek Mijnwezen Nederlandsch Oost-Indie 45 (1916), Verhandelingen 1, p. 37-56.
*('Geology of a part of the island of Moa'. Island with broad, low rim of young raised reefal limestone. Older rocks in hills in center include folded metamorphics (phyllites, crystalline limestone; probably metamorphic Permian, with more limestone than on Leti), ultrabasic rocks (peridotites, serpentinite, gabbro), reddish limestones and radiolarian cherts, poorly bedded crystalline limestone (Triassic?) and mica-bearing sandstones with conglomerates (similar to Triassic of Timor-Seram). With 1: 200,000 geological sketch map)*

Brouwer, H.A. (1918)- Gesteenten van Oost-Nederlandsch Timor. Jaarboek Mijnwezen Nederlandsch Oost-Indie 45 (1916), Verhandelingen 1, p. 67-260.
*('Rocks from East Netherlands Timor'. Petrographic descriptions of igneous, metamorphic and sedimentary rocks from W Timor. Sandstones and conglomerates rich in feldspars and lithics of schists and andesites)*

Brouwer, H.A. (1921)- Geologische onderzoekingen op het eiland Rotti. Jaarboek Mijnwezen Nederlandsch Oost-Indie 49 (1920), Verhandelingen, p. 33-106.
*('Geological investigations on the island Roti' (W of Timor))*

Brouwer, H.A. (1921)- Geologische onderzoekingen op de eilanden Loeang en Sermata. Jaarboek Mijnwezen Nederlandsch Oost-Indie 49 (1920), Verhandelingen 2, p. 207-222.
*('Geological investigations on the islands Luang and Sermata'. Two small islands NE of Timor. Luang mostly intensely folded Permian marls and crinoidal limestone. Also quartzose and calcareous sandstones, which may be Permian or Triassic. Strike directons highly variable: NW-SE in W of island, more or less E-W in East. On Sermata only crystalline schists representing metamorphosed sediments and basic volcanics)*

Brouwer, H.A. (1928)- On the age of alkaline rocks from the island of Timor. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 31, p. 56-58.
*(online at: www.dwc.knaw.nl/DL/publications/PU00015549.pdf)*
*(Permian sediments of Timor mainly tuffs, marls with tuffaceous material, marls, limestones and volcanics. Also locally conglomerates with pebbles of volcanics. Conglomerate studied from near path Sufa-Maubesi. Clasts of syenite and trachyte up to several cm, probably also of Permian age)*

Brouwer, H.A. (1938)- Preliminary remarks on geological investigations in the Lesser Sunda islands near Australia. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 41, 4, p. 334-335.
*(online at: www.dwc.knaw.nl/DL/publications/PU00017173.pdf)*
*(Summary of preliminary results of 1937 University of Amsterdam expedition to Timor and nearby islands. Age of 'flysch' on Timor is Ladinian- Norian (Late Triassic). Overthrusting superposes two very different units of Permian rocks, separated by intensely crushed and squeezed zone)*

Brouwer, H.A. (1939)- Exploration in the Lesser Sunda islands. Geogr. J. 94, 1, p. 1-10.
*(Review of lecture on recent geologic work on Lesser Sunda islands, particularly Timor- Wetar: distribution of volcanics, uplifted young coral reef terraces, older and younger thrusting directed towards Australian continent, etc.))*

Brouwer, H.A. (ed.) (1940)- Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands in the South Eastern part of the Netherlands East Indies 1937, I, Noord-Hollandsche Uitgevers Mij., Amsterdam, p. 1-348.
*(Collection of 2 Ph.D. theses (Tappenbeck, Simons) and papers by Wanner on Permian blastoids, De Marez Oyens on Permian crinoids)*

Brouwer, H.A. (ed.) (1940)- Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands in the South Eastern part of the Netherlands East Indies 1937, II., Noord-Hollandsche Uitgevers Mij., p. 1-395.
*(Collection of two Ph.D. theses by De Roever and Van Voorthuysen, also papers by Brouwer on volcanics of Adonara, etc., and Wanner on Permian bivalves)*

Brouwer, H.A. (ed.) (1941)- Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands in the South Eastern part of the Netherlands East Indies 1937, III. Noord-Hollandsche, Amsterdam, p. 1-380.
*(Collection of 3 Ph.D. theses by Van West and De Bruyne on Timor and De Jong on Wetar, Lirang and Solor)*

Brouwer, H.A. (ed.) (1942)- Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands in the South Eastern part of the Netherlands East Indies 1937, IV. Noord-Hollandsche, Amsterdam, p. 1-401.
*(Collection of Ph.D. theses by Heering on Wetar- Alor, and papers by Brouwer, Wanner, De Roever, De Jong)*

Brouwer, H.A. (1942)- Summary of the geological results of the expedition. In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands in the South Eastern part of the Netherlands East Indies 1937, 4, p. 345-402.
*(Overview of geology of northern (Flores, Pantar, Alor, Wetar, etc.) and southern row of islands (Timor). Timor structure characterized by large overthrusts, formed mainly in pre-Miocene, also younger movements. 'Kekneno series' Permian-Triassic flysch facies derived from metamorphic and feldspar-rich volcanic rock. Upper Cretaceous Palelo clastics with Globotruncana and conglomerates rich in volcanics, metamorphics and Lower Palelo ('other rocks in neighbourhood apparently not exposed' Early Miocene unconformable over older rocks, etc.)*

Brown, K.M. (1987)- Structural and physical processes in accretionary complexes: the role of fluids in convergent margin development. Ph.D. Thesis, Durham University, p. 1-500.
*(online at: http://etheses.dur.ac.uk/7186/1/7186_4368.PDF)*
*(General study on accretionary prisms and mud volcanoes, with chapters on North Borneo and Timor)*

Brown, M. & M.M. Earle (1983)- Cordierite-bearing schists and gneisses from Timor, eastern Indonesia. P-T conditions of metamorphism and tectonic implications. J. Metamorphic Geol. 1, p. 183-203.
*(Mutis Complex in W Timor Boi Massif composed of basement schists and gneisses and dismembered remnants of ophiolite. Mineral assemblages sugggest P-T path of rocks started with initial metamorphism at P= 10 kbar and T=>750°, followed by decompression probably during rifting and syn-metamorphic ophiolite emplacement resulting from processes during initiation and development of convergent plate junction located in SE Asia in late Jurassic- Cretaceous)*

Brunnschweiler, R.O. (1978)- Notes on the geology of Eastern Timor. BMR Bull. Australian Geol. Geophysics 192 (Crespin volume), p. 9-18.
*(online at: https://d28rz98at9flks.cloudfront.net/68/Bull_192.pdf)*
*(Mainly critical review of E Timor mapping by Audley-Charles (1968). Much of what was mapped as Bobonaro melange is Late Triassic mudstone. Late Jurassic rocks also common. At least 3 different ages of 'block clays'; much of what was mapped as olistostrome is complexly thrusted sediment. Two types of Eocene limestones: (1) Early Eocene 'Coinassa Lst' with Orbitolites and Alveolina (= Same series of Gageonnet and Lemoine 1958), (2) late Middle and Late Eocene Dartollu Lst s.s.. Lower and Upper Tertiary thrusting phases in Timor, etc.)*

Buckman, D. (1971)- Timor oil search enters crucial phase. Oil & Gas Int. 11, 7, p. 28-30.

Burck, H.D.M. (1923)- Overzicht van de onderzoekingen der 2de Nederlandsche Timor-expeditie. Jaarboek Mijnwezen Nederlandsch Oost-Indie 49 (1920), Verhandelingen 4, p. 1-55.
*(Overview of W Timor localities studied by 1916 Jonker-led expedition. Main purpose was to collect Permian and Triassic fossils. Good documentation of fossil localities (Baoen/Baung, Niki Niki, Basleo, Kapan, Noil Toko, Bitauni, Sufa, Atambua), but little geology/ stratigraphy context)*

Burke, J.J. (1966)- On the occurrence of *Oklahomacrinus* in Ohio and Timor. Ohio J. Science 66, 5, p. 464-468.
*(Delocrinus expansus Wanner from M Permian of Basleo, W Timor, re-assigned to Oklahomacrinus)*

Carter, D.J., M.G. Audley-Charles & A.J. Barber (1976)- Stratigraphical analysis of island-arc-continental margin collision in eastern Indonesia. J. Geol. Soc. London, 132, p. 179-198.
*(Stratigraphic analysis of collision zone in Timor reveals pre-Pliocene deformation in allochthon elements before M Pliocene overthrusting onto Australian margin. Australian para-autochthon below thrust sheets not involved in pre-Pliocene deformations. Distinction of elements with different structural histories and opposite facies polarity permits identification of plate margin. Lowest thrust sheet part of Asian outer arc ridge, overthrust by fragments of continental margin metamorphic basement and volcanic-sedimentary cover. Model interprets progressive Mio-Pliocene collision between Australian margin and island arc migrating from SE Asia by spreading of Banda Sea. Asian arc was underthrust by Australian continental margin but buoyancy restricted process to overthrusting slivers of rocks from trench and trench-arc gap)*

Chamalaun, F.H. (1977)- Paleomagnetic evidence for the relative positions of Timor and Australia in the Permian. Earth Planetary Sci. Letters 34, 1, p. 107-112.
*(Paleomag suggests pole from Cribas Fm redbeds very close to Australian P-Tr poles, so'autochthonous' Timor was part of Australia. Magnetic inclination places Timor at 34°)*

Chamalaun, F.H. (1977)- Paleomagnetic reconnaissance result from the Maubisse Formation, East Timor and its tectonic implication. Tectonophysics 42, 1, p. T17-T26.
*(Paleolatitude of 'allochthonous' Permian Maubisse Fm is 26°, indistinguishable from 'autochthonous' Permian Cribas Fm red beds, therefore not supporting Asian origin of Maubisse. Conclusions deemed unjustified by Wensink 1990, 1994)*

Chamalaun, F.H. & A.E. Grady (1978)- The tectonic development of Timor: a new model and its implications for petroleum exploration. Australian Petrol. Explor. Assoc. (APEA) J. p. 102-108.
*(Preferred tectonic model for Timor intermediate between Audley-Charles overthrust model and Hamilton accretionary wedge model: (1) initial collision/trench downwarp at ~15-10 Ma, creating Bobonaro melange; followed by (2) slab breakoff causing rapid uplift)*

Chamalaun, F.H. & A.E. Grady (1978)- Timor tectonic development: new model and exploration implications. Oil and Gas J. 76, 42, p. 114-116.
*(Tectonic model without major allochthonous terranes and overthrusts would predict simpler structural geology and stratigraphic continuity between Timor and NW Shelf)*

Chamalaun, F.H., K. Lockwood & A. White (1976)- The Bouguer gravity field and crustal structure of eastern Timor. Tectonophysics 30, p. 241-259.
*(N-S gravity traverse from Betano to Dili in Timor Leste Strong 6 mGal/km gravity gradient at N coast, which is part of significant geophysical trend along Outer Banda Arc. Interpreted to be fault, separating oceanic in NW from continental crust in SE)*

Chappell, J. & H.H. Veeh (1978)- Late Quaternary tectonic movements and sea level changes at Timor and Atauro Island. Geol. Soc. America (GSA) Bull. 89, p. 356-368.
*(Atauro Island N of Timor has raised Quaternary coral reefs up to 500m)*

Charlton, T.R. (1987)- The tectonic evolution of the Kolbano-Timor Trough accretionary complex, Indonesia. Ph.D. Thesis University London, p. 1-374. *(Unpublished)*

Charlton, T.R. (1988)- Tectonic erosion and accretion in steady-state trenches. Tectonophysics 149, p. 233-243.
*(Analysis of relations between rate of plate convergence, sedimentation rates and angle of decollement in subduction zones. Tectonic accretion where decollement steeper than outer trench slope, tectonic erosion where decollement shallower than outer slope dip. Applied to Timor Trough to demonstrate subduction has ceased)*

Charlton, T.R. (1989)- Geological cross-section through the Timor collision complex, Eastern Indonesia. In: B. Situmorang (ed.) Proc. 6th Regional Conf. Geology mineral hydrocarbon resources of Southeast Asia (GEOSEA VI), Jakarta 1987, IAGI, p. 93-104.
*(Cross-section across Timor collision zone with characteristics of subduction-accretion complex, but Timor Trough subduction trench has recently become inactive. Plate convergence being transferred to young zone of thrusting N of volcanic arc, with reverse sense of polarity. Accretionary complex morphology modified by sinistral wrench faulting. Kolbano area thrust-bounded repetitions of Cretaceous- Miocene of sediments accumulated at outermost edge of Australian NW Shelf (up to 9 imbricates onshore?))*

Charlton, T.R. (1989)- Stratigraphic correlation across an arc-continent collision zone: Timor and the Australian Northwest Shelf. Australian J. Earth Sci. 36, p. 263-274.
*(Facies of Triassic- Neogene series of imbricate stack of Kolbano foldbelt, SW Timor, is deep to very deepwater, suggesting it represents outermost edge of pre-collisional Australian margin. Similarities include ?Early Jurassic redbeds, Oxfordian 'breakup unconformity' with Early Cretaceous missing, etc. Implication is that N Timor is either block that rifted off Australia, then collided in Pliocene (Barber 1979) or partly rifted marginal plateau off NW shelf)*

Charlton, T.R. (2001)- The petroleum potential of West Timor. Proc. 28th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 303-317.
*(Timor island has numerous oil and gas seeps, and contains high-quality hydrocarbon source rocks, but island widely considered to have only moderate petroleum potential due to its structural complexity, but complexity is limited to shallow structural levels, and below this simpler structural style predominates. Kolbano area of SW Timor interpreted to be underlain by large, simple inversion anticline. Banli-1 penetrated flank of this structure, below prospective crest)*

Charlton, T.R. (2002)- The petroleum potential of East Timor. Australian Petrol. Prod. Explor. Assoc. (APPEA) J. 42, p. 351-369.
*(Hydrocarbon prospectivity of E Timor widely considered to be only moderate due to Timor island's complex structure, but here interpreted as having higher potential in large, simple inversion structures below shallow complexly folded thrust/ melange terain)*

Charlton, T.R. (2002)- The structural setting and tectonic significance of the Lolotoi, Laclubar and Aileu metamorphic massifs, East Timor. J. Asian Earth Sci. 20, 7, p. 851-865.
*(Two types of metamorphic complexes on Timor: (1) Australian continental basement (Lolotoi, Lachlubar), (2) allochthonous basement derived from Banda forearc (Mutis in W Timor, Aileu in E Timor; with inverted metamorphic gradients))*

Charlton, T.R. (2003)- The petroleum potential of sub-thrustbelt inversion anticlines in the Banda forearc. Indon. Petroleum Assoc. (IPA) Newsl., March 2003, p. 22-27.

Charlton, T.R. (2004)- The petroleum potential of inversion anticlines in the Banda Arc. American Assoc. Petrol. Geol. (AAPG) Bull. 88, 5, p. 565-585.
*(Mainly on structural style of Timor. Banda forearc is fold- thrust belt, with imbricated outer edge of Australian continent, overlain locally by fragments of precollisional oceanic forearc, and is established petroleum province in Seram. Structural complexity overstated. Basement-involved inversion structures in deeper parts of collision complex. Inverted graben basins filled with Permian-Jurassic continental margin sequences, including Late Triassic- E Jurassic source rocks and potential reservoirs, sealed by M-L Jurassic shales. Jurassic shales decollement separates shallow-level structural complexity from deeper simpler structural style of large inversion anticlines)*

Charlton, T.R., A.J. Barber & S.T. Barkham (1991)- The structural evolution of the Timor collision complex, Eastern Indonesia. J. Structural Geol. 13, 5, p. 489-500.
*(New Timor structural evolution model combining element of previous three Timor models; foldbelt as rel. simple progressive thrusting of Australian crustal elements, starting in N at 8 Ma)*

Charlton, T.R., A.J. Barber, R.A. Harris, S.T. Barkham, P.R. Bird, N.W. Archbold, N.J. Morris, R.S. Nicoll, H.G. Owen, R.M. Owens, J.E. Sorauf, P.D. Taylor, G.D. Webster & J.E. Whittaker (2002)- The Permian of Timor: stratigraphy, palaeontology and palaeogeography. J. Asian Earth Sci. 20, p. 719-774.
*(Extensive compilation of Timor Permian stratigraphy and paleontology, with specialist reviews of brachiopods, bryozoans, cephalopods, conodonts, corals, echinoderms, foraminifera, molluscs, trilobites, etc. Permian sequences deposited on Australian continental basement which was undergoing extension, with basaltic volcanism. Carbonates of Maubisse Fm deposited on horst blocks and volcanic highs, clastic sediments of Atahoc and Cribas Fms deposited in grabens)*

Charlton, T.R., A.J. Barber, A.J. McGowan, R.S. Nicoll, E. Roniewicz, S.E. Cook, S.T. Barkham & P.R. Bird (2009)- The Triassic of Timor: lithostratigraphy, chronostratigraphy and palaeogeography. J. Asian Earth Sci. 36, p. 341-363.
*(Overview of Triassic successions of Timor, exposed in fold-and-thrust belt and melange complex. Three formal lithostratigraphic units defined previously (Niof, Aitutu and Babulu Fms), with a fourth, Wai Luli Fm, primarily Jurassic in age but extending down into Triassic. Triassic extension not associated with major volcanism, unlike Early Permian extension)*

Charlton, T.R. & D. Gandara (2012)- Structural-stratigraphic relationships at the boundary of the Lolotoi Metamorphic Complex, Timor-Leste: field evidence against an allochthonous origin. First Int. Geological Congress of Geology of Timor-Leste, Dili 2012, p. 41-44. *(Extended Abstract)*
*(Results of new fieldwork at several Lolotoi Complex massifs ofTimor Leste suggests Australian continental basement origin for complex. S front of Lolotoe metamorphic massif controlled primarily by down-to-S normal faults, not N-dipping thrust front, and metamorphics extend to depth of 2805m at TD in Cota Taci-1 well, Suai Basin. Stratigraphic contacts observed between Lolotoi Complex and Eocene Dartollu Fm, but also between Lolotoi Compex and Permian Maubisse Fm. One outcrop of Dartollu Fm with reworked fragments of Maubisse Fm crinoid limestone clasts and porphyritic volcanics. Similar relationships at Legumau Range)*

Charlton, T.R. & D. Gandara (2014)- The petroleum potential of onshore Timor-Leste. Proc. 38th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA14-G-017, 7p.
*(Brief review of petroleum prospectivity in Mesozoic of 6 areas of onshore Timor Leste. Two new lithostratigraphic units recognized: (1) Foura Sst, thick-bedded but fine-grained sandstone of probable E Jurassic age; appears to interdigitate with shales of Wai Luli Fm and possibly correlative to 'Plover Sst' in Banli 1 well of SW Timor; (2) Late Jurassic Tchinver Shale, 100-200m thick shale section, with Belemnopsis-type belemnites, disconformably over shales-thin sandstones of Wai Luli Fm; with source rock/seal potential)*

Charlton, T.R., D. Gandara & N. da Costa Noronha (2017)- TIMOR GAPôs onshore Block: a preliminary assessment of prospectivity in onshore Timor-Leste. In: SEAPEX Exploration Conference 2017, Singapore, Session 4, 30p. *(Abstract + Presentation)*
*(Onshore block in SW part of Timor Leste now held by national oil company Timor Gap EP. 18 exploration wells drilled between 1960-1973: ten with hydrocarbons, two (Matai-1/-1A and Cota Taci-1) tested oil in subcommercial quantities. At least 37 surface hydrocarbon seeps (14 oil, 23 gas) across block. Gas from seeps both high-mature thermogenic (from Permian?) and biogenic. Triassic calcareous restricted marine shale likely source for all Timor oils. Likely subthrust inversion anticlines of Permo-Triassic rifts)*

Charlton, T.R. & Suharsono (1990)- Mesozoic-Tertiary stratigraphy of the Kolbano area, southern West Timor. Bull. Geol. Res. Dev. Centre (GRDC), Bandung 14, p. 38-58.
*(Kolbano complex interpreted as accretionary complex. Late Jurassic- Miocene accumulated on outermost edge of Australian NW Shelf. Possible unconformity at base Ofu Fm deepwater marls, with Eocene planktonics but also abundant reworked Cretaceous and Paleocene planktonics)*

Charlton, T.R. & D. Wall (1994)- New biostratigraphic results from the Kolbano area, southern West Timor: implications for the Mesozoic-Tertiary stratigraphy of Timor. J. Southeast Asian Earth Sci. 9, p. 113-122.
*(On Kolbano area Late Jurassic- Neogene stratigraphy and dinoflagellate, forams, nannofossil contents of selected samples. Youngest sediments involved in Kolbano foldbelt thrusting N18-N19/20, latest Miocene-earliest Pliocene (but nothing younger than N15 suggested by Keep and Haig 2010))*

Chiang, H.W., R.A. Harris, C. Prasetyadi, C.C. Shen, T.C. Chiu, N.L. Cox & Y.G. Chen (2010)-Th-230 dates of MIS 5e coral terraces in Kisar Island, Eastern Indonesia. EGU General Assembly, Vienna, Conf. Abstracts 12, p. 13467.
*(online at: http://adsabs.harvard.edu/abs/2010EGUGA..1213467C)*
*(New 230Th dates raised Quaternary coral terraces at Kisar suggest ages of ~122 ka and minimum uplift rate of 0.1 m/kyr On N coast of Timor-Leste MIS 5e terraces reach 55m high, with uplift rate of ~0.4 m/kyr. No remnant Holocene fringe reefs around Kisar Island, also suggesting rel. low activity tectonics at Kisar)*

Clowes, E. (1997)- Micropalaeontological analysis of the Kolbano sequence (Jurassic to Pliocene), West Timor and its radiolarian fauna. Ph. D. Thesis, University College London, London, p. 1-443. *(Unpublished)*
*(Detailed descriptions of SW Timor Kolbano foldbelt Early Cretaceous- E Miocene radiolarian-rich deep-water pelagic facies. Nakfunu Fm dated as Valanginian-Aptian. Albian-Coniacian hiatus. Ofu Fm mainly Santonian-Maastrichtian. Early Cretaceous species dominated by endemic species known only from high S latitudes, but Tethys species present as well. Aptian-Albian more common Tethys species)*

Cockcroft, P., C. Kenyon & W.Spencer (2005)- A journey into East Timorôs exploration history. Proc. 2005 SE Asia Petroleum Expl. Soc. (SEAPEX) Conf., Singapore, 64p. *(Abstract + Presentation)*
*(Five phases of oil-gas exploration in Timor Leste since 1893)*

Cook, S.E. (1984)- Geochemical evaluation of outcrop samples from Timor, Indonesia with geological notes. University of London, Geol. Research in SE Asia, Report 27, p. 1-37. *(Unpublished)*
*(16 outcrop samples from Permian and Triassic of Kekneno window analyzed for TOC (generally lean, woody and inertinite) and thermal maturation (generally immature- mature))*

Cook, S.E. (1986)- Triassic sediments from East Kekneno, West Timor. Ph.D. Thesis, University of London, p. 1-384. *(Unpublished)*
*(Facies trends and current directions suggest Triassic turbiditic sediments in NW Timor derived from easterly source. Sandstone composition less mature than in most age-equivalent Australia NW shelf well samples. Heavy mineral assemblages suggest some similarities with two samples from Sahul Shoals 1 well; may be from similar source)*

Cook, S.E., K. Hasan, A. Said & S. Hidayat (1989)- Stratigraphic sequences in deep-water Triassic sediments from Timor. In: B. Situmorang (ed.) Proc. 6th Regional Conf. Geology mineral hydrocarbon resources of SE Asia (GEOSEA VI), Jakarta 1987, IAGI, p. 25-41.
*('Para-autochthonous' deep-water M-L Triassic in E Kekneno area, W Timor. Three parallel sequences of same age, dut different stratigraphies. New formation names: Niof Fm for fine-grained slope deposits, Babulu Fm for base-of-slope turbidites.With bivalves Halobia and Daonella. Turbidite sole marks suggest dominant flow direction from ENE to WSW. Main deformation NNE-to-SSW low-angle thrusting)*

Cook, S.E., K. Hasan, A. Said & S. Hidayat (1990)- Stratigraphic sequences in deep-water Triassic sediments from Timor. J. Southeast Asian Earth Sci. 4, p. 74 *(Abstract only)*
*(11 units in Triassic, representing 3 separate sequences, all deep water. Sediment source predominantly from NNE)*

Cotelo Neiva, J.M. (1955)- Alguns marmores do Timor portugues. Garcia de Orta 3, 2, p. 205-209.
*('Some marbles from Portuguese Timor'. With some chemical analyses)*

Cox, N. (2009)- Variable uplift from Quaternary folding along the Northern coast of East Timor based on U-series age determinations of coral terraces. M.Sc. Thesis, Brigham Young University, p. 1-135.
*(online at: https://scholarsarchive.byu.edu/cgi/viewcontent.cgi?article=2680&context=etd)*
*(Mapping of uplifted Pleistocene marine coral reef terraces along ~180 km of N coast of E Timor. Highest terrace/platform elevation of ~600m asl. Above Miocene synorogenic material. Mean uplift of 0.6m/ ka for last 150,000 yrs. Uplift likely associated with folding above N-directed thrust faults)*

Cox, N., R. Harris & D. Merritts (2006)- Quaternary uplift of coral terraces from active folding and thrusting along the northern coast of Timor-Leste. EOS Transactions AGU, 87, 52, Fall Mtg. Suppl., p. *(Abstract only)*
*(Number of major emergent coral terraces along N coast Timor-Leste increases from 2 to 25 over 150 km from C to E Timor-Leste. Vertical displacement increases from < 0.3 in W to 1.0-1.5 mm/yr in E. Both erosional (regressional) and depositional terraces. Active uplift associated with N-ward movement along retro-wedge thrust faults)*

Crespin, I. (1956)- Micropalaeontological examination of rock specimens from Portuguese Timor. Bureau Mineral Res. Geol. Geoph., Canberra, Record 1956/65, p. 1-3.
*(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10139)*
*(Brief report on 8 samples from Timor Leste (presumably Timor Oil Ltd outcrop samples). Include Late Eocene larger foram limestone with common Pellatispira, Biplanispira, Discocyclina from localities Suai and Ranuc)*

Crespin, I. (1959)- Micropalaeontological report on rock samples from Portuguese Timor. Bureau Mineral Res. Geol. Geoph., Canberra, Record 1959/92, p. 1-3.
*(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10523)*
*(Report on 6 samples from Timor Leste (Timor Oil Ltd outcrop samples). Samples from tuffaceous breccia near base of fatu/ ophiolite at Mota Cena (Barique) contains limestone boulders with M-U Eocene larger forams (Nummulites, Discocyclina). Sample from matrix of Bibileu block clay N of Fatu Lulic, below Viqueque Fm, is of M Eocene age)*

Crespin, I. & D.J. Belford (1959)- Micropalaeontology of further rock samples from Portuguese Timor. Bureau Mineral Res. Geol. Geoph., Canberra, Record 1959/118, p. 1-3.
*(online at: www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=10548)*
*(Report on 7 more samples from Timor Leste (Timor Oil Ltd outcrop samples). Mainly Cretaceous (Albian-Turonian) deep water shale and radiolarite from E of Betano Landing)*

Cross, I. (1990)- Hydrocarbon potential of Timor laid bare. Petromin, October 1990, p. 40-44.

Cross, I. (2000)- The search for oil and gas on East Timor. Petrol. Expl. Soc. Great Britain Newsl., Feb. 2000, p. 62-66.

Crostella, A.A. & D.E. Powell (1975)- Geology and hydrocarbon prospects of the Timor area. Proc. 4th Ann. Conv. Indon. Petroleum Assoc., 2, p. 149-171.
*(Exploration history, etc. Consider Timor sediments all parts of Australian margin)*

Da Costa Monteiro, F. (2003)- Late Triassic strata from East Timor: stratigraphy, sedimentology and hydrocarbon potential. M.Sc. Thesis, Auckland University, p. 1-115. *(Unpublished)*
*(With palynogy analyses by R. Helby)*

Da Costa Monteiro, F., J.A. Grant-Mackie, B. Ricketts & B. Woods (2003)- Some Late Triassic rocks in Timor Leste. In: Int. Conf. Opportunities and challenges for oil & gas & mining sectors in Timor-Leste, Dili 2003, 31p.

Da Costa Monteiro, F., B. Ricketts, J.A. Grant-Mackie & B. Woods (2002)- Late Triassic strata from East Timor- stratigraphy, sedimentology and hydrocarbon potential. Geol. Soc. New Zealand, Ann. Conf. Abstracts, p. 17.
*(E Timor Late Triassic flysch-like interbedded sandstone- shale in lower part; upper part mainly calcarenites, massive sandstones and polymict conglomerates. Locally, Wailuli Fm, a name applied to E-M Jurassic rocks based on ammonites and belemnites, extends down into Late Triassic. Much of Wailuli Fm is Late Triassic, with Carnian- Norian age ammonites (Juvavites, etc.) and Halobia in marls and limestones. Babulu Fm, defined in W Timor as Late Triassic flysch facies, can be extended into E Timor to cover most rocks previously mapped as Wailuli Fm. Abundant organic matter may be source for hydrocarbons)*

Davydov, V.I., D.W. Haig & E. McCartain (2013)- A latest Carboniferous warming spike recorded by a fusulinid-rich bioherm in Timor Leste: implications for East Gondwana deglaciation. Palaeogeogr. Palaeoclim. Palaeoecology 376, p. 22-38.
*(online at: http://scholarworks.boisestate.edu/cgi/viewcontent.cgi?article=1150&context=geo_facpubs)*
*(Lensoidal limestone body of Maubisse Fm near Kulau village in central highlands of Timor Leste is bioherm with massive lower unit, including reef framework at base, and bedded grainstone upper unit. Bioherm developed on basalt substrate in warm shallow water. Fusulinid foraminifera including Schwagerina spp. and Eostaffella suggest latest Carboniferous (-earliest Permian) age. Kulau bioherm is oldest unit recognized in Maubisse Fm of Timor. Also suggest subtropical environment at paleolatitude of ~40° S, at N margin of Gondwana (where E Permian is glacial-dominated) (Authors do not consider previous interpretations that Maubisse Fm may be 'allochthonous' and not part of Australian margin; JTvG))*

Davydov, V.I., D.W. Haig & E. McCartain (2014)- Latest Carboniferous (late Gzhelian) fusulinids from Timor Leste and their paleobiogeographic affinities. J. Paleontology 88, 3, p. 588-605.
*(Uppermost Gzhelian (possibly lowermost Asselian) 9-24m thick bioherm on basalt near Kalau, 6 km WNW of Maubisse, in highlands of Timor Leste. With abundant foraminifera belonging to 17 genera (incl. fusulinids Ozawainellidae, Schubertellidae, Schwagerinidae, etc. Two new Schwagerina species: S. timorensis and S. maubissensis in oldest carbonate unit recorded frome Maubisse Fm. Also Eostaffella spp., Schellwienia spp. Timor was in N part of N-S East Gondwana rift system along which W margin of Australia later developed. Timor fauna most closely related to faunas from S China and Changning-Menlian region of Yunnan)*

De Azeredo Leme, J. (1963)- The eastern end geology of Portuguese Timor (a preliminary report). Garcia de Orta (Lisboa) 11, 2, p. 379-388.

De Azeredo Leme, J. (1968)- Breve ensaio sobre la geologia da provincia de Timor. Junta de Invest. do Ultramar, Curso de Geologia do Ultramar 1, p. 105-161.
*('Brief overview of the geology of the province of Timor'. Principal publication on geology of East Timor during Portuguese colonial time. In Portuguese))*

De Azeredo Leme, J. & A.V.P. Coelho (1962)- Sombre una rocha granitoide da parte oriental da Ilha de Timor. Garcia de Orta (Lisboa) 10, 2, p. 407-410.

*('On a granitoid rock from the eastern part of Timor island')*

De Azeredo Leme, J. & A.V.P. Coelho (1962)- Geologia do enclave de Oecusse (Provincia de Timor). Garcia de Orta (Lisboa) 10, 3, p. 553-566.
*('Geology of the Ocussi enclave, Timor'. Occurrence of U Triassic and Tertiary sediments and igneous rocks)*

De Beaufort, L.F. (1923)- On a collection of Upper Cretaceous teeth and other vertebrate remains from a deep sea deposit in the island of Timor. Jaarboek Mijnwezen Nederlandsch Oost-Indie 49 (1920), Verhandelingen 4, p. 57-70.
*(Decalcified Elasmobranchii shark teeth and reptile teeth from Cretaceous oceanic red clays with manganese nodules from Niki Niki area, SW Timor, originally described by Molengraaff, 1920. Overlie thin-bedded Late Triassic limestone with Halobia. Locality is at NW margin of Kolbano foldbelt)*

De Bruyne, D.L. (1941)- Sur la composition et la genese du basin central de Timor. Ph.D.Thesis University of Amsterdam, p. 1-98. *(Also in H.A. Brouwer (ed.) Geological expedition of the University of Amsterdam to the Lesser Sunda Islands, III, p. 135-238)*
*('On the composition and genesis of the Central basin of Timor'. Mainly on the Neogene deposits of Central Basin of W Timor. Early Miocene calcareous conglomerates with schist fragments and Spiroclypeus (probably latest Oligocene 'Cablac Limestone' equivalent; see also Marks 1954, JTvG). Pliocene Globigerina marls)*

De Marez Oyens, F.A.H.W. (1933)- On *Paralegoceras sundaicum* Haniel and related forms. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 36, 1, p. 88-98.
*(online at: www.dwc.knaw.nl/DL/publications/PU00016378.pdf)*
*(Six species of Permian ammonite Paralegoceras proposed by Smith (1927) from Jonker collection from Timor are all variations of P. sundaicum Haniel)*

De Marez Oyens, F.A.H.W. (1938)- Preliminary note on the occurrence of a new ammonoid fauna of Permian age on the island of Timor. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 41, 10, p. 1122-1126.
*(online at: www.dwc.knaw.nl/DL/publications/PU00017273.pdf)*
*(Brief listing of 23 Permian ammonite species from tuffaceous marls of new locality Tae Wei, 5 km NE of Basleo. Thought to be stratigraphically transitional between known Basleo and Bitauni faunas (probably Roadian/ Wordian= early Middle Permian). Incl. Agathiceras brouweri, A. cf. sundaicum, Popanoceras, Metalegoceras, Sicanites, Parapronorites, etc.)*

De Marez Oyens, F.A.H.W. (1940)- Neue Permische Krinoiden von Timor, mit Bemerkungen uber deren Vorkommen im Basleogebiet. In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands, etc., 1937, Noord Hollandsche Publ., Amsterdam, 1, p. 285-348.
*('New Permian crinoids from Timor, with remarks on their occurrence in the Basleo area'. NW of Basleo Permian limestones generally thin lenses, associated with marls and common diabase with tuffs, coarse conglomerates with brachiopods. Marls locally rich in crinoids. In some areas this Permian adjacent to deep marine Cretaceous with manganese nodules and fish teeth)*

De Marez Oyens, F.A.H.W. (1940)- *Platycrinus tuberculatus* Oyens, a correction. Geol. Magazine 77, 3, p. 253-254.
*(Proposes to replace name Platycrinus tuberculatus Oyens for a Permian crinoid, from Basleo, Timor, with Platycrinus wrighti nov. nom, as P. tuberculatus has already been used)*

De Marez Oyens, F.A.H.W. (1941)- Over het voorkomen van *Fusulina*-kalken in het Basleo gebied. Handelingen 28th Nederlandsch Natuur- Geneeskundig Congres, Utrecht, p. 240-242.
*('On the occurrence of Fusulina limestones in the Basleo area'. Loose blocks of fusulinid limestones in Noil Boenoe river deposits. In Noil Toeke in series of Permian rocks enclosed in Mesozoic rocks, probably remnants of thrust sheet)*

De Roever, W.P. (1940)- Geological investigations in the Southwestern Moetis Region (Netherlands Timor). Ph.D. Thesis University of Amsterdam, p. 1-244.
*(also in H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands 1937, 2, Noord Hollandsche Publ., Amsterdam, p. 97-344) (Detail maps and descriptions of SW Mutis Mts region. Distinguishes tectonically juxtaposed rock series of similar ages, but different facies. Rock types Pre-Permian(?) crystalline schists, Kekneno series (Permian-Triassic flysch), Sonnebait series (= 'Maubisse Fm'; Permian crinoid/brachiopod limestones with basic volcanics, Triassic cephalopod- limestones, Jurassic marls with cherts and radiolarites, U Cretaceous Globotruncana limestone and marls with cherts), Fatoe series (Triassic oolitic limestones and Liassic Mytilus limestones) and ophiolite-spilite complex. Major thrust plane between Kekneno and Sonnebait series. Fatoe series youngest nappe complex overlies ophiolite-spilite complex which may belong to same nappe as crystalline schists. Main strike direction NW-SE, dipping NE)*

De Roever, W.P. (1940)- Description of some Permian ammonoids from F. Koekatoe, Lidak. Palaeontological Appendix to Simons (1940), in H.A. Brouwer (ed.) (1940) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands 1937, 1, p. 206-210.
*(New species of cyclolobid ammonite Waagenoceras lidacense from Lower Permian of NE West Timor)*

De Roever, W.P. (1940)- Uber Spilite und verwandte Gesteine von Timor. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 43, 5, p. 630-634.
*(online at: www.dwc.knaw.nl/DL/publications/PU00017447.pdf)*
*('On spilites and related rocks from Timor'. W Timor Mutis area with complex of Pre-Tertiary spilite, dolerite, basalt, gabbro, lherzolite and serpentinite. Associated with crystalline schists and Palelo series (= Banda Terrane of later authors). Also common below Triassic 'Fatu limestones'. Common albitization in spilite)*

De Roever, W.P. (1941)- Die permischen Alkaligesteine und die Ophiolite des Timorischen Faltengebirges. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 44, 8, p. 993-995.
*(online at: www.dwc.knaw.nl/DL/publications/PU00017655.pdf)*
*('The Permian alkaline rocks and ophiolites of the Timor foldbelt'. Permian Sonnebait series (= Maubisse Fm of later authors; JTvG) mainly marine, highly fossiliferous crinoidal limestones with volcanic rocks (mainly olivine basalts, trachybasalts, alkali trchytes and alkali rhyolites, also spilites and poeneites). Present both N and S of Plio-Pleistocene Central Basin. No similar volcanics observed in Permian- Triassic flysch facies of the Kekneno series. Post-Permian igneous rocks mainly ophiolites)*

De Roever, W.P. (1941)- De prae-Miocene tektoniek van het ZW Moetis gebied (Timor) in verband met het karakter der oudere eruptiefgesteenten. Handelingen 28e Nederlandsch Natuur- Geneeskundig Congres, 1941, p. 242-244. *(Abstract)*
*('The pre-Miocene tectonics of the SW Mutis area, Timor, in relation to the nature of older volcanic rocks')*

De Roever, W.P. (1942)- Olivine-basalts and their alkaline differentiates in the Permian of Timor. In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands 1937, 4, Noord Hollandsche Publ. Co., Amsterdam, p. 209-289.
*(Descriptions of basic volcanics of 'Sonnebait series' (=Maubisse complex; JTvG), associated with shallow marine Permian crinoidal limestones. Triassic-Jurassic-Cretaceous of Sonnebait series all pelagic sediments)*

De Roever, W.P. (1959)- Schwach alkalischer fruhgeosynklinaler Vulkanismus in Perm der insel Timor. Geol. Rundschau 48, p. 179-184.
*('Weakly alkaline, early geosynclinal volcanism in the Permian of Timor'. Permian basic volcanics of Timor (of Maubisse Terrane) mainly olivine basalts, also trachybasalt, alkali-trachyte. Do not belong in cratonic setting, but are similar to oceanic basalts and here called 'early geosynclinal')*

De Smet, M.E.M, A.R. Fortuin, S.R. Troelstra, L.J. Van Marle, Mimin Karmini, S. Tjokrosapoetro & S. Hadiwisastra (1990)- Detection of collision-related vertical movements in the Outer Banda Arc (Timor, Indonesia), using micropaleontological data. J. Southeast Asian Earth Sci. 4, p. 337-356.

*(Timor Central Basin fill Late Pliocene pelagic calcilutites with vitric tuffs (Batu Putih Fm), unconformably over Bobonaro scaly clay and imbricated Early Pliocene- older rocks. Batu Putih carbonates change to submarine fan clastics at ~2.2 Ma (Noele Fm). Source of turbidites was from N Timor and include serpentinite fragments. Two rel. short uplift periods: (1) >600m uplift at 2.2- 2.0 Ma, associated with creation of Central Basin and emergence of N Timor and (2) >1500m of uplift starting at 0.2 Ma and still ongoing)*

De Waard, D. (1954)- Contributions to the geology of Timor. I. Geological research in Timor. Indonesian J. Natural Science (Majalah Ilmu Alam Indonesia) 110, p. 1-8.
*(Summary of 1953 Timor expedition of University of Indonesia, Bandung)*

De Waard, D. (1954)- Contributions to the geology of Timor, II. The orogenic main phase in Timor. Indonesian J. Natural Science (Majalah Ilmu Alam untuk Indonesia) 110, p. 9-20.
*(Lalan Asu area, SW Timor, typical Palelo Series of schists overlain by Cretaceous flysch, with unconformities at base of shallow marine Eocene and Base Miocene limestones. Basal Miocene conglomerate has Miogypsinoides complanata (= Aquitanian age according to Marks 1954, but signifies zone Te4/Chattian/ latest Oligocene; JTvG). Structural analysis suggests thrusting to S and SSW. Strike directions of Cretaceous, Eocene and Miocene similar, suggesting rel. minor overthrusting in pre-Lower Miocene, main phase in Late Miocene; Sonnebait overthrusts Palelo complex)*

De Waard, D. (1954)- Contributions to the geology of Timor, V. Structural development of the crystalline schists in Timor. Tectonics of the Lalan Asu Massif. Indonesian J. Natural Science (Majalah Ilmu Alam untuk Indonesia) 110, 4-6, p. 143-153.
*(Structural analysis of foliation in Lalan Asu schists suggests 2 main structural events; (1)'Pre-Permian?' event caused E-W striking foliation and low-medium grade metamorphism and (2) Late Miocene folding/thrusting, with minor tectonic events in-between. Serpentine masses, occasionally with gabbro, along border of massif between schist and overthrust series)*

De Waard, D. (1954)- Contributions to the geology of Timor, VI. The second geological Timor expedition, preliminary results. Indonesian J. Natural Science (Majalah Ilmu Alam untuk Indonesia) 110, 4-6, p. 154-160.
*(Tectonics of Timor very complex; overthrusting present, but not like rel. coherent and flat alpine nappes. Crystalline massifs and associated ophiolites probably lenticular masses in overthrust succession. Chaotic structures in Sonnebait series suggest gravity tectonics)*

De Waard, D. (1955)- Contributions to the geology of Timor, VII. On the tectonics of the Ofu series. Indonesian J. Natural Science (Majalah Ilmu Alam untuk Indonesia) 111, 4-6, p. 137-143.
*(Ofu series in mountainous area near S coast of W Timor (later called Kolbano foldbelt = young accretionary prism of distal Australian NW margin rocks; JTvG) consists of Jurassic-Cretaceous marly limestones, highly folded with E-W orientation of fold-axes and dominantly N-ward dips. Ofu series may be thrust over more marly Permo-Triassic 'parautochthonous' Kekneno series)*

De Waard, D. (1955)- Contributions to the geology of Timor, VIII. Tectonics of the Sonnebait overthrust unit near Nikiniki and Basleo. Indonesian J. Natural Science (Majalah Ilmu Alam untuk Indonesia) 111, 4-6, p. 144-150.
*(SW Timor Sonnebait overthrust unit in Nikiniki- Basleo region with famous Permian-Triassic fossil localities. Mainly composed of 500-750m of Permian shales and reddish limestones with common pillow basalt flows, subordinate Triassic cephalopod limestones and U Cretaceous deep-sea clays with manganese nodules. Structurally not as complex as previously reported: NW-SE trending open folds with wavelength of 1.5- 2 km. Tectonically thrusted over Ofu series in S, which is separate overthrust sheet with different stratigraphy (Jurassic-Cretaceous deep-water marly limestones) and with E-W trending fold axes. Different orientations suggest two separate fold-thrust events))*

De Waard, D. (1956)- Contributions to the geology of Timor, IX. Geology of a N-S across Western Timor. Indonesian J. Natural Science (Majalah Ilmu Alam untuk Indonesia) 112, 2, p. 1-13.

*(W Indonesian Timor northern and southern zones of overthrust structures, separated by central basin with latest Miocene-Pleistocene sediments and bordered on S by major (~2000m of throw) Nikiniki fault. Overthrusting completed in Early Miocene. Orogenic movements continued with faulting, tilting of blocks, and formation of central depression. Position of Tertiary volcanic rocks along N coast not yet clear)*

De Waard, D. (1957)- Contributions of the geology of Timor, XII. The third Timor geological expedition, preliminary results. Indonesian J. Natural Science (Majalah Ilmu Alam untuk Indonesia) 113, p. 7-43.
*(1957 Timor Expedition. Name Mutis unit proposed for tectonic unit composed of crystalline basement overlain by Palelo (+U Jurassic?+ Cretaceous greywackes and volcanics), Eocene limestone and volcanics and Lower Miocene reefal limestones and volcanics, all folded (=Banda Terrane of Harris). Fatus, previously assumed to be separate tectonic units, now considered to be bioherms in Permian, Triassic and Jurassic of Sonnebait overthrust unit. Only one overthrust sheet of importance: Sonnebait overthrust, which overlies all other tectonic units, incl. Mutis and parautochthonous Kekneno unit)*

De Waard, D. (1957)- Zones of regional metamorphism in the Lalan Asu Massif, Timor. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 60, p. 383-392.
*(Five metamorphic zones ranging from muscovite-chlorite subfacies to amphibolite facies in crystalline schists of Lalan Asu massif, W Timor. Massif surrounded by marly sediments of Sonnebait overthrust sheet)*

De Waard, D. (1959)- Anorthite content of plagioclase in basic and pelitic crystalline schists as related to metamorphic zoning in the Usu massif. Timor. Am. J. Sci., 257, p. 553-562.
*(Sampling of schists in Usu massif yielded detailed pattern of isopleths based on An values of plagioclase. An10 isopleth marks isograd separating greenschist facies from almandine amphibolite facies. Grade of metamorphism probably responsible for plagioclase equilibrium values)*

Dias, R. (2012)- Strike-slip tectonics in arc-continent collision: The Timor-Leste example. First Int. Geological Congress of Geology of Timor-Leste, Dili 2012, p. 53-58. *(Extended Abstract)*
*(online at: www.rdpc.uevora.pt/bitstream/10174/8173/1/Dias_2012_Strike-slip%20tectonics%20in%20arc-continent%20collision.pdf)*
*(Recent detailed structural mapping in Cribas region led to new data on submeridian sinistral strike-slip fault system and relation with E-W Cribas anticline)*

Diener, C. (1923)- Ammonoidea trachyostraca aus der mittleren und oberen Trias von Timor. Jaarboek Mijnwezen Nederlandsch Oost-Indie 49 (1920), Verhandelingen 4, p. 75-276 + Atlas.
*(Descriptions of >300 species of M-U Triassic ammonoids from W Timor collected by Jonker 1916 expedition. Assemblages from blocks very rich in well preserved ammonites, resembling 'Halstatt Limestones' in Alps, with species of both Alpine-Mediterranean and Himalayan affinities. Dominated by Haloritids. Different blocks different ages, mainly Carnian- Norian or mix of these, but also Anisian and Ladinian faunas. Upper Norian-Rhaetian faunas not demonstrated. Total thickness of M-U Triassic may be only 2 meters)*

Dinis, P.A., C. Tassinari & M.M.S. Cabral Pinto (2013)- Geochemistry and detrital geochronology of stream sediments from East Timor: implications for the origin of source units. Australian J. Earth Sci. 60, 4, p. 509-519.
*(Geochemistry and detrital zircon geochronology of Recent stream sediments in E Timor. Zircons with ages of 2150-1500 Ma and 365-210 Ma most common populations in all samples. Sampling sites with Banda Terrane units in watersheds have common Triassic zircons, also common in Sula Spur. Significant component of zircon in allochthonous units of Timor probably inherited from crustal fragments that drifted from Sula Spur. These were carried S as Banda Arc progressed towards Australian continent and emplaced in Timor with Banda Terrane. Geochem interpretation: 'none of the studied sediments plot in the fields of passive margins')*

Djohor, D.D. & J. Sopaheluwakan (2006)- Studi batuan metamorf dalam mempelajari evolusi geologi (studi kasus di daerah Komplek Miomaffo- Timor). MINDAGI (Trisakti) 10, 1, p. 1-10.
*(online at: www.journal.trisakti.ac.id/index.php/MINDAGI/article/view/101/109)*

*('Study of metamorphic rocks in the study of geological evolution (case study in the area of the Miomaffo-Complex, Timor)'. Brief descriptions of low-grade metamorphic rocks, incl. metatuff, schist (no locality maps: not sure if samples actually from Miomaffo Massif or Mutus Complex? Mainly summary of Sopaheluwakan 1989 data?; JTvG))*

Donovan, S.K. & G.D. Webster (2013)- Platyceratid gastropod infestations of *Neoplatycrinus* Wanner (Crinoidea) from the Permian of West Timor: speculations on thecal modifications. Proc. Geologists Assoc. 124, 6, p. 988-993.

Donovan, S.K. & G.D. Webster (2016)- A Permian *Barycrinus*? Wachsmuth (Crinoidea, Cladida) from Timor. Alcheringa 40, p. 216-218.
*(A crinoid pluricolumnal from Noil Simaam, Timor, identified as Barycrinus? sp., youngest member of this otherwise E Carboniferous genus)*

Dropkin, M.J., R.A. Harris & P.K. Zeitler (1993)- An Oligocene forearc crustal flake exposed in a contemporary arc continent collision, Timor, Indonesia. Geol. Soc. America (GSA), Mtg. Abstracts, 25, 6, p. A-482. *(Abstract only)*
*(Harris et al. 2000: Banda Terrane of Timor from continental and oceanic protoliths, and reached thermal peak at or before 35-40 Ma)*

Ducrocq, S. (1996)- The Eocene terrestrial mammal from Timor, Indonesia. Geol. Magazine 133, 6, p. 763-766.
*(Discussion of skull of Eocene anthracothere Anthracothema/ Anthracotherium verhoeveni (= ancestral Hippopotamus relative) from N West Timor. First described by Von Koenigswald (1967), and Laurasiatic affinities. Can not be autochthonous, unless part of Timor is Asian continental microplate that migrated S and collided with Timor (Late Eocene anthracotheres common in mainland SE Asia, also known from W Kalimantan (Stromer 1931), also W Sulawesi? (Villeneuve et al. 2010); JTvG))*

Duffy, B. (2012)- The structural and geomorphic development of active collisional orogens, from single earthquake to million year timescales, Timor Leste and New Zealand. Ph.D. Thesis, University of Canterbury, Christchurch, p. 1-221.
*(online at: www.ir.canterbury.ac.nz/bitstream/10092/7527/1/thesis_fulltext.pdf)*
*(Geomorphology and structural geology of Timor records lateral extrusion of orogenic wedge that developed by underthrusting of Australian continental terrace below Banda forearc)*

Duffy, B., J. Kalansky, K. Bassett, R. Harris, M. Quigley, D.J.J. van Hinsbergen, L.J. Strachan & Y. Rosenthal (2017)- Melange versus forearc contributions to sedimentation and uplift, during rapid denudation of a young Banda forearc-continent collisional belt. J. Asian Earth Sci. 138, p. 186-210.
*(Along Timor sector of Banda Arc synorogenic piggy-back basins formed above melange unit, exhumed to sea floor in latest Messinian. Following deep marine marl sedimentation, increasingly muddy sediment flux indicates emergence of Timor 4.5 Ma. Sediment source probably 50-60 km to N. Sedimentation between 4.5-3.2 Ma probably derived from mudstone-dominated landscape with geochemical affinities to the Triassic-mudstone-rich synorogenic melange, which overlies and surrounds Banda Terrane. After 3.2 Ma, sedimentation dominated by hard rock lithologies of Banda Terrane, and accompanied by rapid uplift)*

Duffy, B., M. Quigley, R. Harris & U. Ring (2013)- Arc-parallel extrusion of the Timor sector of the Banda arc-continent collision. Tectonics 32, 3, p. 641-660.
*(online at: http://onlinelibrary.wiley.com/doi/10.1002/tect.20048/epdf)*
*(New structural and geomorphic evidence for syn-collisional extension in converging plate boundary zone between Australian Plate and Banda Arc. Dominantly NW-SE dextral normal faults and NE-SW sinistral normal faults. Extension resulted from collision of outlying plateau that arrived S of Wetar and was bounded by ocean crust to both W and E)*

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*(W Australia Permian cephalopod Gastrioceras very similar to Paralegoceras sundaicum Haniel of Leti island, E of Timor)*

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*(Timor Lolotoi unit dismembered metamorphosed ophiolite formed during Jurassic rifting of Australia NW shelf. Rift developed into ocean basin which carried rifted microcontinental block N-wards, which accreted to SE Asia in M-Late Cretaceous and experienced low grade metamorphism with crossitic amphibole)*

Earle, M.M. (1981)- A study of Boi and Molo, two metamorphic massifs on Timor, Eastern Indonesia. Ph.D. Thesis University of London, p. 1-240. *(Unpublished)*

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*(In W Timor Boi Massif 'Mutis' metamorphics isoclinally folded pelitic gneiss at base, amphibolite and metamorphosed gabbroic rocks and serpentinite at top. Late Cretaceous radiometric age. Boi metamorphics overlain by Eocene and Miocene carbonates. In other similar massifs on Timor metamorphics overlain by Palelo Group radiolarian cherts (E-M Cretaceous) and Eocene and Miocene carbonates. Regional foliation E-W strike, S dip. Boi and Lalan Asu massifs part of larger metamorphic overthrust sheet, emplaced from N)*

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*(Deep water Cretaceous radiolarian cherts interpreted as deep sea deposits, in both 'autochthonous' (Wai Bua, Kolbano) and 'allochthonous' (Noni Fm of Palelo Series in Molo and Miomaffo massifs) parts of Timor. Palelo Group was derived from SE Asia)*

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*(Manganese nodules from Cretaceous red clay from Noil Tobe, W Timor, chemically very similar to Pacific-Indian oceanic deep sea nodules, providing strong confirmation of deep sea origin)*

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*(Detrital zircons from N Timor Leste Aileu Metamorphic Complex of N Timor Leste show age modes at 270-425 Ma, 860-1180 Ma and 1460-1870 Ma, favoring sediment source from E Malaya- Indochina and maximum depositional age of 270 Ma (E-M Permian). Aileu Complex cooling ages of 6-10 Ma, implying metamorphism started by at least ~12 Ma. Metamorphism attributed to arc setting rather than collision of Australian continent with Banda Arc. Atauro island N of Timor bi-modal subaqueous volcanism ceased by ~3 Ma, followed by uplift of coral reef terraces to 700m around island. N of Timor absence of intermediate depth seismicity attributed to slab window down to 350 km depth. Slab under W Savu Sea in down-dip compression at ~70-g 300 km, beneath region of arc with closest spacing of volcanoes in Sunda-Banda arc system. Unusual state of stress attributed to subduction of N extension of Scott Plateau)*

Ely, K.S., M. Sandiford, D. Phillips & S.D. Boger (2014)- Detrital zircon U-Pb and 40Ar/39Ar hornblende ages from the Aileu Complex, Timor-Leste: provenance and metamorphic cooling history. J. Geol. Soc., London, 171, p. 299-309.
*(online at: http://jaeger.earthsci.unimelb.edu.au/msandifo/Publications/Manuscripts/Manuscripts/2014_JGS.pdf)*

*(Detrital zircons from metasediments of Permian Aileu Complex of N Timor Leste have major U-Pb age modes at 275-440 Ma (peak at 290 Ma, reflecting nearby E Permian magmatism?), 860-1240 Ma and 1460-1870 Ma, most compatible with sediment source from now fragmented Sula Spur. 40Ar/39Ar cooling ages of hornblende show W parts cooling through hornblende closure temperature by 10 Ma and central parts by 6 Ma, consistent with variable exhumation history. Onset of cooling by 10 Ma implies metamorphism was probably coeval with initiation of Banda Arc. Aileu Complex cooling ages record deformation related to fragmentation of Sula Spur and early development of Banda Arc, rather than collision between Australian continent and Banda Arc)*

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*('Research on the Permian tabulate corals of Timor and on the affinities of the spongiomorphs of the Triassic of Austria; importance of microstructural, geochemical and biochemical data')*

Falloon, T.J., R.F. Berry, P. Robinson & A.J. Stolz (2006)- Whole-rock geochemistry of the Hili Manu peridotite, East Timor: implications for the origin of Timor ophiolites. Australian J. Earth Sci. 53, p. 637-649.
*(Geochemistry of Hili Manu peridotite on N coast E Timor similar to Oecussi peridotite of N coast of W Timor, and suggesting supra-subduction origin. Therefore more likely to be part of Banda upper plate, not Australian subcontinental lithosphere. This supports interpretation that Miocene collision between Banda Arc and Australian continental margin produced widespread 'Cordilleran'-style ophiolites on Timor)*

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*(Blastoid genus Pterotoblastus from Permian of Timor, with type species, P. gracilis from Basleo beds)*

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*(online at: https://www.biodiversitylibrary.org/item/141360#page/549/mode/1up)*
*('Research on fossil woods, III'. Incl. brief descriptions of silicified wood as float in Koinino River, Timor, collected by Martens and Schneider (p. 519-520; 'Araucarioxylon martensi n.sp.' ; not figured). Age unknown (Wichmann 1892, p. 194 assumes Tertiary age; Roggeveen 1932 noted similarities with Triassic wood from Riau Archipelago, Sumatra) (case of misidentication or wrong location (Timor mainly marine)?; JTvG))*

Felix, J. (1915)- Jungtertiare und quartare Anthozoen von Timor und Obi- I. In: J. Wanner (ed.) Palaeontologie von Timor 2, 2, Schweizerbart, Stuttgart, p. 1-45.
*('Late Tertiary and Quaternary anthozoans from Timor and Obi- part 1. Mainly taxonomic descriptions of corals collected by Wanner, Molengraaf 1909, 1911 expeditions)*

Felix, J. (1920)- Jungtertiare und Quartare Anthozoen von Timor und Obi-II. In: J. Wanner (ed.) Palaeontologie von Timor 8, 13, Schweizerbart, Stuttgart, p. 1-40.

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*(Stratigraphic succession of Triassic Aitutu Fm and associated units in Sahem River near Soibada, Timor Leste. Eight lithostratigraphic units, mainly basinal facies marls, radiolarian wackestone, bedded wackestone with chert nodules, etc.. Ages mainly Late Triassic (Aitutu Fm), some E Jurassic (Wailuli Fm). Lowest unit is M Triassic (Late Anisian- E Carnian) deltaic quartz sst-sandy shale, and correlates to Babulu Fm)*

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*('Mapping and structure of the region West of the Cribas anticline; implications for hydrocarbon generation')*

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*('Lower Triassic of Timor and Upper Triassic of the Moluccas; appendix to the Triassic of Asia'. Brief review of records of Triassic fossils reported by Wanner (1907))*

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*(Somohole Horizon of the Kekneno series, NW slope of Mount Somohole ~3 km SW of village at Fatu Bena, Mutis region, N West Timor is one of oldest Permian horizons, probably of Sakmarian age. With Neopronorites timorensis, Somoholites beluensis, Metalegoceras involutum, Juresanites somoholensis, Agathiceras, Waagenina dieneri, Propopanoceras boesei, Properrinites, etc. New species Somoholites deroeveri n.sp.)*

Fyan, E.C. (1916)- Some young-Pliocene ostracods of Timor. Proc. Kon. Akademie Wetenschappen, Amsterdam, 18, 2, p. 1205-1216.
*(online at: https://archive.org/details/proceedingsofsec182koni)*
*(First description of SE Asian Tertiary ostracodes: nine species from Pliocene clay along Mota Talau near Atambua, based on samples collected by Molengraaff Timor expedition of 1910-1912. Includes Paracypris zealandica, Nesidea molengraaffi, N. mulleri, Loxoconcha australis, L. alata, Cytheridea (now called Neocyprideis) timorensis n.sp.), C. spinulosa, etc.)*

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*('Preliminary note on the geology of Portuguese Timor'. Descriptions of stratigraphies of 'Autochthonous' (Permian - Quaternary) and 'Nappe complex' (Permian- Eocene and metamorphics). Discussion of nappe structures. Multiple structural events: main one between Oligocene-M Miocene, lesser one in Pleistocene)*

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*('Composition and subdivisions of the nappe complex of Portuguese Timor'. Three units in overthrust complex above autochthonous series in Portuguese Timor: lower (Permian Maubisse series shales, volcanics, pink crinoidal limestones), intermediate (crystalline and volcanic rocks mainly in North) and upper complex composed largely of late Cretaceous Fatu- Eocene Same Fm massive limestones)*

Gageonnet, R. & M. Lemoine (1957)- Sur la stratigraphie de lôautochtone au Timor Portugais. Comptes Rendus hebd. Academie Sciences Paris 244, p. 2168-2171.
*('On the stratigraphy of the autochthonous of Portuguese Timor'. Deepest unit of E Timor called 'autochthonous'. Composed of Permian Cribas shales and thick Triassic- E Jurassic flysch, overlain by Eocene pelagics. Cretaceous appears to be absent. Unconformably overlain by weakly deformed Neogene Viqueque series marls, sands and conglomerates)*

Gageonnet, R. & M. Lemoine (1957)- Sur l'age et les modalites des phenomenes de charriage au Timor portugais. Comptes Rendus hebd. Academie Sciences Paris 244, 19, p. 2407-2410.
*(Principal tectonic events of E Timor: major overthrusting before Middle Miocene, followed by formation of simple folds in Plio-Pleistocene and uplift. Displacement driven by gravity played an important role)*

Gageonnet, R. & M. Lemoine (1958)- Contribution a la connaissance de la geologie de la province Portuguese de Timor. Junta Investig. Ultramar, Lisboa, 134p.
*('Contribution to the knowledge of the geology of Portuguese Timor'. Classic early work on E Timor)*

Gageonnet, R., M. Lemoine & D. Trumpy (1959)- Problemes petrolifiers dans la province Portugaise de Timor. Revue Inst. Francais Petrole 14, 1, p. 466-473.
*('Petroleum problems in Portuguese Timor'. W Indonesia commercial hydrocarbon accumulations mainly Neogene age, thick and rel. little deformed. Timor numerous oil and gas shows tied to Permian- Mesozoic geosynclinal series, that underwent alpine nappe tectonics in Miocene, complicating the presence of reservoirs and commercial traps)*

Gerth, H. (1909)- *Timorella permica* n.g., n.sp., eine neue Lithistide aus dem Perm von Timor. Centralblatt Mineralogie Geologie Palaont. 1909, p. 695-700.
*(online at: www.biodiversitylibrary.org/item/192781#page/717/mode/1up)*
*('Timorella permica, new genus, new species, a new lithistid from the Permian of Timor'. New sponge species from Permian crinoid limestone and shale, collected by Verbeek at Ajer Mati river near Kupang)*

Gerth, H. (1915)- Die Heterastridien von Timor. Palaontologie von Timor, Schweizerbart, Stuttgart, 2, p. 63-69.
*('The Heterastrids from Timor'. Late Triassic small, globular, possibly pelagic colonial hydrozoans, named Heterastridium conglobatum, similar to those originally described from Halstatter Limestone in Austrian Alps. Over 1000 specimens collected by Wanner and Molengraaff expeditions, mainly from Bihati (near Baung, Amarassi), some from Nifoekoko near Niki Niki. Appear to be restricted to blocks of pelagic, deep water 'Halstatt' cephalopod facies with Norian ammonites. Some layers composed exclusively of heterastrids, covered with black iron-manganese coating)*

Gerth, H. (1921)- Die Anthozoen der Dyas von Timor. Palaontologie von Timor, Schweizerbart, Stuttgart, 9, 16, p. 65-147.
*('The corals from the Permian of Timor'. First and still principal monograph on Permian corals from Timor. 15 species of solitary rugose corals (Timorphyllum, Pterophyllum, Carcinophyllum, Verbeekiella, Amplexus, etc.) and 3 species of 'waagenophyllid' colonial rugose corals (Lonsdaleia, Michelinia, Favosites))*

Gerth, H. (1921)- Der palaeontologische Character der Anthozoenfauna des Perms von Timor. Nederl. Timor Expeditie 1910-1912, Jaarboek Mijnwezen Nederlandsch Oost-Indie 49 (1920), Verhandelingen III, 1, p. 1-30.
*('The paleontological character of the Permian coral fauna of Timor'. Dominated by solitary corals (Timorphyllum wanneri, Verbeekiella, Carcinophyllum from Artinskian- Roadian of Bitauni, Basleo). New colonial corals Lonsdaleia timorica n.sp. (= Ipciphyllum timoricum) from Fatu Oinino on road to Nenas and Favosites permica from Basleo)*

Gerth, H. (1926)- Die Korallenfauna des Perm von Timor und die Permische Vereisung. Leidsche Geol. Mededelingen 2, 1, p. 7-14.
*(online at: www.repository.naturalis.nl/document/549627)*
*('The coral fauna of the Permian of Timor and the Permian glaciation'. Timor Permian marine fauna rich in corals, crinoids and fusulinids and is typical warm water fauna. It is contemporaneous with glaciations in nearby Australia, suggesting these areas were farther apart in Permian time. With world map showing distribution of Permian floras and faunas)*

Gerth, H. (1927)- Ein *Heterastridium* mit eigenartiger Oberflachen Skulptur aus dem Perm von Timor. Leidsche Geol. Mededelingen 2, p. 223-225.
*(online at: www.repository.naturalis.nl/document/549577)*
*('A Heterastridium with unusual surface sculpture from the Permian of Timor'. New species of Triassic hydrozoan described as Heterastridium (Stoliczkaria) rugosum from Noil Boewan, presumably from Triassic limestones of Nifoekoko area)*

Gerth, H. (1927)- Ueber einige Pliozan-Quartare Echiniden von Timor. Palaeontologie von Timor, Schweizerbart, Stuttgart, 15, 26, p. 181-184.
*('On some Pliocene- Quaternary echinoids from Timor'. Rare echinoids in young raised coral reef limestones, incl. Cidaris, Pleurechinus, Pericosmus timorensis, Breynica sundaica)*

Gerth, H. (1929)- Die Spongien aus dem Perm von Timor. Palaontologie von Timor, Schweizerbart, Stuttgart, 27, p. 1-36.
*(('The sponges from the Permian of Timor'. At least 25 species of siliceous sponges in Permian, collected by Molengraaf, Wanner and Jonker Timor across W Timor, mainly Basleo near Niki-Niki and Nifoetassi near Sufa. Sponges not as abundant and diverse as some other fossil groups. 25 species identified, most of them new. Timorella, Hindia spp., Pemmatites timorensis, etc. Rather endemic assemblage of lithistids)*

Gerth, H. (1929)- Die Spongien aus dem Perm von Timor. In: H.A. Brouwer (ed.) 2e Nederlandsche Timor-Expeditie VI, Jaarboek Mijnwezen Nederlandsch-Indie 55 (1926), Verhandelingen 1, p. 93-132.
*('The sponges from the Permian of Timor'. At least 25 species of siliceous sponges in Permian. 25 species, most of them new. Rather endemic assemblage of lithistids. Same paper as Gerth (1929))*

Gerth, H. (1931)- Coelenterata. In: Onze palaeontologische kennis van Nederlandsch Oost Indie. Leidsche Geol. Mededelingen 5 (K. Martin volume), p. 120-151.
*(online at: www.repository.naturalis.nl/document/549311)*
*('Our paleontological knowledge of the Netherlands Indies: Coelenterata'. Includes Timor corals)*

Gerth, H. (1936)- The occurrence of isolated calicular plates of *Dinocrinus* in the Permo-Carboniferous of Australia and India and its stratigraphical significance. Proc. Kon. Akademie Wetenschappen, Amsterdam, 39, 7, p. 865-870.
*(online at: http://www.dwc.knaw.nl/DL/publications/PU00016941.pdf)*
*(Crinoid Dinocrinus cornutu, described from E Permian of Timor by Wanner, probably junior synonym of Calceolispongia hindei Etheridge known from W Australia (not from India, but Netherlands Indies; JTvG))*

Gerth, H. (1942)- Formenfulle und Lebensweise der Heterastridien von Timor. Palaeont. Zeitschrift 23, p. 181-202.
*('Shapes and mode of living of the Heterastrids of Timor'. On Late Triassic hydrozoan fossil Heterastridium conglobatum, also known from other Tethyan regions from Austrian Alps to Seram to New Zealand. Usually associated with Norian fauna)*

Gerth, H. (1944)- Eine neue Art der Spongiengattung *Mortieria* des belgischen Kohlenkalkes aus dem Perm von Timor. Verhandelingen Geologisch-Mijnbouwkundig Genootschap Nederland Kol., Geol. Serie 14 (Tesch volume), p. 199-203.

*('A new species of the sponge genus Mortieria from the Belgian Carboniferous from the Permian of Timor'. Mortieria permica from Tai Wei near Basleo)*

Gerth, H. (1950)- Die Ammonoiden des Perm von Timor und ihre Bedeutung fur die stratigraphische Gliederung der Perm-Formationen. Neues Jahrbuch Mineral. Geol. Palaont., Abhandl. B, 91, 2, p. 233-320.
*('The ammonoids from the Permian of Timor and significance for zonation of Permian formations'. Key paper on Timor Permian ammonite zonation and correlations with Sumatra, China, Japan, Alps, etc. Five ammonoid zones in Permian, from old to young: Properrinites (Sakmarian), Perrinites (Artinskian), Waagenoceras (Sosio stage), Timorites (Basleo stage) and Cyclolobus (Chidru stage))*

Gheyselinck, R. (1934)- Zur Systematik der Aulacoceraten. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 37, 3, p. 173-180.
*(online at: www.dwc.knaw.nl/DL/publications/PU00016371.pdf)*
*('On the systematics of the aulacocerates'. Study of >3000 specimens of ribbed belemnite Aulacoceras from Triassic of W Timor (probably Late Triassic 'Halstatter facies'-equivalent), collected by Jonker Timor expedition. Timorese aulacocerates, originally described as Asteroconites savuticus (Boehm) 1907 and Aulacoceras timorense Wanner 1911, may be varieties of alpine species Aulacoceras sulcatum Von Hauer)*

Gheyselinck, R.F.C.R. (1937)- Permian trilobites from Timor and Sicily. Doct. Thesis University of Amsterdam, Scheltema & Holkema, Amsterdam, p. 1-108. *(Unpublished)*
*(Comprehensive study of (generally rare) trilobites from Permian of Timor. About 100 specimens, 7 species, mainly from Basleo. Most common species is Neoproetus indicus Tesch. No locality maps or stratigraphic info)*

Giani, L. (1971)- The geology of the Belu District of Indonesian Timor. Masters Thesis, Imperial College, University of London, p. 1-122.
*(online at: https://spiral.imperial.ac.uk/handle/10044/1/35410)*
*(Reconnaissance study of easternmost district of Indonesian Timor. Stratigraphy-structure similar to adjacent TimorLeste: (1) highly deformed Autochthonous units (Permian Cribas Fm turbidites with plant material, Triassic Aitutu Fm radiolarian calcilutite with Halobia and thin bituminous shales (no benthic fauna) and younger? Babulu Mb siliciclastic flysch; possible Jurassic Wai Luli Fm); (2) three overthrust allochthonous units (klippen of Maubisse Fm Permian crinoid limestones with thin chert layers and olivine pillow basalts, Aileu Fm metamorphosed Permian, Lolotoi quartz-mica schists). Emplacement of overthrust sheets during Ramelauean orogeny, dated as M Miocene in E Timor. Lolotoi Complex was emplaced before arrival of Maubisse Fm?. (3) Fatu Mondeo is E Miocene Cablac Limestone (Miogypsina, Spiroclypeus); (4) All deformed autochthonous and overthrust units overlain unconformably by Bobonaro olistostrome of exotic blocks in scaly (slickenside) clay matrix with Permian-Pliocene? foraminifera; (5) Olistostrome overlain by little deformed Late Miocene- Quaternary Viqueque Fm; (6) Quaternary coral reef terraces uplifted to 300m. With mud volcanoes, Oetfo gas seep and small Roti Mutin oil seep.)*

Glasby, G.P. (1978)- Deep-sea manganese nodules in the stratigraphic record: evidence from DSDP cores. Marine Geol. 28, p. 51-64.
*(Core records of first 370 holes of DSDP Project shows manganese nodules relatively uncommon in stratigraphic column and >42% of nodules are from Pleistocene. Onset of high ocean bottom current velocities at ~3.5 Ma may have favored nodule growth through much of Pacific Ocean. Manganese nodules from pelagic red clay on Timor formed in Cretaceous when Antarctic circumpolar current was deflected N of Australia)*

Glenister, B.F. & W.M. Furnish (1987)- New Permian representatives of ammonoid superfamilies Marathonitaceae and Cyclolobaceae. J. Paleontology 61, 5, p. 982-998.
*(New species Eohyattoceras gerthi and Cardiella martodjojoi from late Early Permian (Roadian) of Basleo and Bitauni, Timor. Demarezites oyensi (Gerth, 1950 from Tae Wei, Basleo) and D. lidacensis (de Roever, 1940, from Lidak district), formerly assigned to Waagenoceras, ancestral to Waagenoceras-Cyclolobus lineage, redescribed from Roadian of Timor)*

Glenister, B.F. & W.M. Furnish (1988)- Patterns in stratigraphic distribution of Popanocerataceae, Permian Ammonoids. Senckenbergiana Lethaea 69, 1-2, p. 43-71.
*(With descriptions of Propopanoceras boesei (Smith) from Somohole and Epitauroceras soewarnoi n.sp. from Amarassian beds at Kuafeu, Baun area, Timor)*

Glenister, B.F., W.M. Furnish & Z. Zhou (2004)- *Paedopronorites*, a new Upper Permian (Wuchiapingian) ammonoid from Indonesia (Timor). J. Paleontology 78, 5, p. 1014-1015.
*(New Permian ammonoid from Amarassi Beds, Kuafeu (Koeafeoe), Baun area, Amarassi Province, W Timor. Associated with cyclolobid genera Timorites and Cyclolobus. No strat info)*

Glenister, B.F., D.L. Windle & W.M. Furnish (1973)- Australasian Metalegoceratidae (Lower Permian Ammonoids). J. Paleontology 47, 6, p. 1031-1043.
*(Taxonomy of Lower Permian Juresanites- Metalegoceras- Pseudoschistoceras ammonoid lineage, based on collections from W Australia, Timor and Oman. Names Paralegoceras sundaicum form. evoluta and form. involuta replaced by genera Metalegoceras and Pseudoschistoceras. Descriptions of Sakmarian Juresanites somoholense (Haniel) and J. hanieli (Smith) (both formerly Gastrioceras). Australian species M. clarkei Miller conspecific with senior Indonesian synonym, M. australe (Smith). Metalegoceratidae are distinctive element of Lower Permian 'Boreal' ammonoid realm)*

Grady, A.E. (1975)- A reinvestigation of thrusting in Portuguese Timor. J. Geol. Soc. Australia 22, p. 223-228.
*(Field relations from Maubisse region of Portuguese Timor fail to support hypothesis of S-ward overthrusting of Permian rocks or postulate that Maubisse Fm represents a mid-Tethys island group (This 'autochthonous' model has been widely criticized in other papers; JTvG))*

Grady, A.E. & R.F. Berry (1977)- Some Palaeozoic-Mesozoic stratigraphic-structural relationships in East Timor and their significance in the tectonics of Timor. J. Geol. Soc. Australia 24, p. 203-214.
*('Autochthonous' model suggested for development of Timor, with essentially no allochthonous pre-Cenozoic material)*

Grady, A.E. & R.F. Berry (1980)- The significance of blue amphibole in Timor. Inst Australasian Geodynamics (Flinders University) Publ. 80, 5, p.

Grunau, H.R. (1953)- Geologie von Portugiesisch Osttimor. Eine kurze Ubersicht. Eclogae Geol. Helvetiae 46, 1, p. 29-37.
*(online at: http://dx.doi.org/10.5169/seals-161692)*
*('Geology of Portuguese East Timor: a brief overview'. Two tectonic complexes in East Timor (1) essentially autochthonous unit of Permian, Triassic, Jurassic and Upper Cretaceous- Tertiary geosynclinal sediments, and (2) overthrust complex with crystalline schists, diabases and spilites, Permian crinoidal and massive limestones and Fatu limestones. Main period of nappe emplacement probably post-Aquitanian)*

Grunau, H.R. (1956)- Zur Geologie von Portugiesisch Osttimor. Mitteilungen Naturforschenden Gesellschaft, Bern, N.F. 13, p. 11-18.
*('On the geology of Portuguese East Timor'. Summary of presentation for Bern Nature Research Society)*

Grunau, H.R. (1957)- Neue Daten zur Geologie von Portugesisch Osttimor. Eclogae Geol. Helvetiae 50, p. 69-98.
*(online at: http://dx.doi.org/10.5169/seals-162207)*
*('New data on the geology of Portuguese Timor'. Aspects of East Portuguese Timor geology based on observations of 1947-1948 oil company fieldwork with Escher, mainly in southern part. With 10 cross sections. 'Autochthonous' flysch-type Permian clastics similar to Kekneno series of W Timor. Ophiolites common in nappe complex, usually associated with thin Permian crinoid/ fusulinid limestones, believed to be of Cretaceous age, similar to E Sulawesi ophiolites. Triassic in multiple facies: flysch, radiolarian limestone and Fatu limestone with Lovcenipora and Misolia. Jurassic Chondrites marls and marls with Aucella malayomaorica.*

*Upper Cretaceous limestones with Globotruncana. E Miocene Te limestones with Spiroclypeus, probably same time as main thrusting. Timor good example of mountain building by gravitational gliding)*

Grunau, H.R. (1957)- Geologia da parte oriental do Timor Portugues. Garcia de Orto 5, 4, p. 727-737.
*('Geology of the eastern part of Portuguese Timor'. Portuguese translation of Grunau 1953 paper)*

Grundel, J. & H. Kozur (1975)- Psychrospharische Ostracoden aus dem Perm von Timor. Freiberger Forsch.-Hefte C 304, p. 39-49.
*(Permian ostracodes in samples from Mutis area, W Timor, collected by De Roever in 1937, interpreted as deepwater Early Permian)*

Hadimuljono, J.S., D. Yensusminar, A.B. Wicaksono & S. Suliantara (2016)- Rembesan migas di daerah Timor Barat. Lembaran Publikasi Minyak dan Gas Bumi (Lemigas) 50, 3, p.
*(online at: www.journal.lemigas.esdm.go.id/index.php/LPMGB/article/view/428)*
*('The oil and gas seepages in West Timor'. Many oil and gas seeps in W Timor, generally associated with mud volcanoes. Gas seeps in all mud volcanoes in W Timor; oil seeps only at mud volcanoes in S part of W Timor. Gas mainly methane (CH4) and minor ethane (C2H6) with high N2 content. Gas Chromatography of oil seeps suggest oil probably originated from lacustrine or marine-transition environments)*

Hadiwisastra, S. (1987)- Plio-Plistocen nannofosil biostratigrafi dari daerah Soe, Timor. Proc. 15th Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta 1986, 14p.
*('Plio-Pleistocene nannofossil biostratigraphy of the Soe area, Timor')*

Haig, D.W. (2004)- Stratigraphic reconstruction of Timor Leste and correlation to the Bonaparte Basin. PESA Newsletter 73, p. *(Geology in Timor Symposium Abstract)*
*(Wai Luli Formation type area clastics ranges in age from Late Permian- M Jurassic. Stratigraphic succession similar to Bonaparte Basin)*

Haig, D.W. (2012)- Palaeobathymetric gradients across Timor during 5.7-3.3 Ma (latest Miocene-Pliocene) and implications for collision uplift. Palaeogeogr. Palaeoclim. Palaeoecology 331-332, p. 50-59.
*(Paleobathymetry analysis of oldest post-collision deposits in Timor, from distributions of planktonic and benthic foraminifera in chalk, marl and mudstone successions that accumulated during 5.7-3.3 Ma. Paleo water depths between 500-2500m, deepening from N to S, E and W)*

Haig, D.W. & A.N. Bandini (2013)- Middle Jurassic radiolaria from a siliceous argillite block in a structural melange zone near Viqueque, Timor Leste: paleogeographic implications. J. Asian Earth Sci. 75, p. 71-81.
*(Large thin-bedded siliceous argillite block in Bobonaro melange at Viqueque, S Timor Leste, associated with blocks of pillow basalts, near contact with post-orogenic Viqueque basin deposits. Contains M Jurassic (late Bathonian- E Callovian) radiolarian assemblage of 55 species. Fauna little similarity to other Jurassic radiolarian assemblages known from Timor or from Roti, Sumatra, S Kalimantan and Sula. Interpreted as part of Noni Gp, originally described as lower part of Palelo Series in W Timor. Age close to that of continental breakup in area, suggesting deposition in newly rifted Indian Ocean (new 'Indian Ocean Megasequence'))*

Haig, D.W. & E. McCartain (2007)- Carbonate pelagites in the post-Gondwana succession (Cretaceous-Neogene) of East Timor. Australian J. Earth Sci. 54, 6, p. 875-897.
*(Upper parts of Permian- M Jurassic 'Gondwana Megasequence' structurally juxtaposed against Aptian- Late Miocene carbonate pelagites. Pelagites probably several 100m thick, bathyal, deposited unconformably above Gondwana succession after continental breakup. Cementation, stylolitisation and vein formation after early Late Miocene (after 10.9- 9.8 Ma). Deformed succession overlain by relatively undeformed Plio- Pleistocene Viqueque Megasequence (N18-N23). First distal turbidites were from 4.2-3.35 Ma; proximal turbidite deposition from ~3.35 Ma, with clasts from emerging Timor island to N. M bathyal continental terrace setting continued from Cretaceous- Paleogene to E Pliocene. Soft-sediment mixing in deformed pelagites and Bobonaro Melange under Viqueque MS suggests Late Miocene (9.8-5.6 Ma) tectonic mobilisation of sedimentary units, with mud volcanoes erupting on seafloor)*

Haig, D.W. & E. McCartain (2010)- Triassic organic-cemented siliceous agglutinated foraminifera from Timor-Leste: conservative development in shallow marine environments. J. Foraminiferal Research 40, 4, p. 366-392.
*(49 species of agglutinated foraminifera in 11 facies associations in Triassic basinal deposits of Timor Leste. One genus and five species new. Fauna cosmopolitan composition. Coherent stratigraphic sections not preserved and stratigraphic reconstruction is based on correlations using conodonts, palynomorphs and other forams. Most samples Upper Triassic, some Lower Triassic. Facies associations range from those influenced by sediment from nearby carbonate banks to prodelta and delta-front associations)*

Haig, D.W. & E. McCartain (2012)- Intraspecific variation in Triassic ophthalmidiid Foraminifera from Timor. Revue Micropaleontologie 55, 2, p. 39-52.
*(Four ophthalmidiid species from Triassic mudstones and wackestones. In Timor Leste, A. bandeiraensis, K. atsabensis and S. grunaui found with Carnian conodonts, at another locality K. atsabensis occurs with conodonts suggestive of M Triassic)*

Haig, D.W., E. McCartain, L. Barber & J. Backhouse (2007)- Triassic- Lower Jurassic foraminiferal indices for Bahaman-type carbonate-bank limestones, Cablac Mountain, East Timor. J. Foraminiferal Research 37, 3, p. 248-264.
*(Peloidal- oolitic limestones on Cablac Mountain in E Timor contain Triassic or Lower Jurassic small foraminifera, not Lower Miocene as previously mapped. E Jurassic (Sinemurian-Pliensbachian) age indicated by Meandrovoluta asiagoensis, Everticyclammina praevirguliana and palynomorphs. Other limestones Late Triassic- Early Jurassic, based on Duotaxis metula. Basinal facies of nearby Wai Luli Valley indicate Late Triassic (Carnian) transported carbonate-bank foraminiferal assemblage. This suggests carbonate banks developed locally on topographic highs in seas that flooded interior-rift basins in this part of Gondwana and complex facies array of deep-water muds, deltaic sands, and carbonate shoals)*

Haig, D.W., E.W. McCartain, M. Keep & L. Barber (2008)- Re-evaluation of the Cablac Limestone at its type area, East Timor: revision of the Miocene stratigraphy of Timor. J. Asian Earth Sci. 33, p. 366-378.
*(Cablac Limestone supposedly a Lower Miocene shallow marine carbonate, but is of Late Triassic- E Jurassic age at Cablac Mountain type locality. Crush breccia at N flank Cablac Mountain formerly regarded as basal conglomerate of Cablac Lst reinterpreted as breccia along high angle fault between 'Asian' Banda Terrane and overthrust limestone)*

Haig, D.W., E. McCartain, A.J. Mory, G. Borges, V.I. Davydov, M. Dixon, A. Ernst, S. Groflin, E. Hakansson, M. Keep, Z. Dos Santos, G.R. Shi & J. Soares (2014)- Postglacial Early Permian (late Sakmarian-early Artinskian) shallow-marine carbonate deposition along a 2000 km transect from Timor to West Australia. Palaeogeogr. Palaeoclim. Palaeoecology 409, p. 180-204.
*(Late Sakmarian- E Artinskian carbonate deposition widespread in marine intracratonic rift basins from Timor to N Perth Basin, spanning ~20° of paleolatitude (35-55°S). Type section of Maubisse Lst in Timor-Leste compared to sections in Canning Basin, S Carnarvon Basin (Callytharra Fm) and N Perth Basin (Fossil Cliff Mb). Carbonate units have no glacial influence, overlie glacially influenced strata in S. Limestone deposition under very shallow marine conditions, and similar grain composition, dominated by bryozoan and crinoidal debris. Tubiphytes, gastropod and bivalve shell debris, echinoid spines, solitary rugose corals and trilobite elements rare. Lack of tropical elements such as fusulinid foraminifera, colonial corals or dasycladacean algae indicate temperate marine conditions with only small increase in temperature to N. Carbonate deposits represents warmer phase than preceding glacially influenced Asselian- E Sakmarian interval and subsequent cool phase of 'mid' Artinskian that is followed by significant warming during late Artinskian- E Kungurian)*

Haig, D.W., A.J. Mory, E. McCartain, J. Backhouse, E. Hakansson, A. Ernst, R.S. Nicoll, G.R. Shi, J.C. Bevan, V.I. Davydov, A.W. Hunter, M. Keep et al. (2017)- Late Artinskian- Early Kungurian (Early Permian) warming and maximum marine flooding in the East Gondwana interior rift, Timor and Western Australia, and comparisons across East Gondwana. Palaeogeogr. Palaeoclim. Palaeoecology 468, p. 88-121.
*(U Artinskian- Kungurian deposits in Timor-Leste and Canning, S Carnarvon and N Perth basins of W Australia formed between 35- 55°S paleolatitude in East Gondwana interior rift, a precursor to rift that 100 My*

*later formed Indian Ocean in region. Timor lay near main axis of E Gondwana rift. Main depocentres developed by faulting initiated in latest Carboniferous. Cool conditions in early Late Artinskian (water T 0-4 °C), followed by rapid warming in late Artinskian and maximum marine flooding near Artinskian-Kungurian boundary. Carbonate mounds,with larger fusulines and algae developed in N part of rift; Tubiphytes, conodonts, and brachiopods with Tethyan affinities to migrate into marginal-rift basins. Bua-bai Lst (= 'upper Maubisse Gp) locally rich in Late Artinskian? fusulinid Praeskinnerella. Similar pattern of climate change in Carboniferous- E Permian between E Gondwana rift and Lhasa and Sibumasu terranes)*

Haile, N.S., A.J. Barber & D.J. Carter (1979)- Mesozoic cherts on crystalline schists in Sulawesi and Timor. J. Geol. Soc. London 136, p. 65-70.
*(Chert-bearing deep water Jurassic-Cretaceous, unconformable on metamorphics of continental origin in SW Sulawesi and Timor, suggesting Sulawesi and Timor probably part of continuous terrain during deposition of radiolarian cherts. Description of Noil Toko section of Miomaffo complex where Late Jurassic- Early Cretaceous radiolarian cherts overlie Mutis-Miomaffo metamorphics)*

Hamlet, B. (1928)- Permische Brachiopoden, Lamellibranchiaten und Gastropoden von Timor. In: H.A. Brouwer (ed.) 2e Nederlandsche Timor-Expeditie VI, Jaarboek Mijnwezen Nederlandsch-Indie 56 (1927), Verhandelingen 2, p. 1-115.
*(Permian brachiopods and molluscs from W Timor, collected by 1911 Molengraaff and 1915-1917 Jonker expeditions. Incl. Leptodus from Fatu Kuat. Little or no stratigraphy or locality information)*

Haniel, C.A. (1915)- Ammoniten aus dem Perm der Insel Letti. Jaarboek Mijnwezen Nederlandsch Oost-Indie 43 (1914) Verhandelingen 1, p. 161-165.
*('Ammonites from the Permian of Leti Island' (E of Timor). Brief descriptions of presumably Early Permian ammonites Paralegocereas sundaicum (= Metalegoceras), Agathiceras sundaicum n.sp. and Propinacoceras sp. from greywacke shale at S slope of 'small Woerlawan' Mountain, Leti. Similar to Bitauni fauna from W Timor)*

Haniel, C.A. (1915)- Die Cephalopoden der Dyas von Timor. In: J. Wanner (ed.) Palaontologie von Timor, Schweizerbart, Stuttgart, 3, 6, Schweizerbart, Stuttgart, p. 1-153.
*('The cephalopods from the Dyas (= Permian) of Timor'. First and only monograph on Permian ammonites from 35 localities on W and E Timor, expanding on brief earlier papers by Beyrich (1865), Rothpletz (1892) and Boehm (1907). Incl. species of Agathiceras, Cyclolobus, Popanoceras, Paralegoceras, etc. New genera Timorites and Sundaites. New species incl. Sundaites levis. Also straight nautiloids Orthoceras spp.)*

Hantoro, W.S. (1994)- Batugamping terumbu koral Kwarter terangkat di Timor. Proc. 23rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, 1, p. 192-207.
*('Uplifted Quaternary coral reef limestones of Timor'. Uplifted marine coral reef limestone terraces across much of Timor, up to 1200m a.s.l.. Unconformable on older rocks. In Kupang area 8 Late Pleistocene terraces up to ~120m elevation, suggesting uplift rate of W tip of Timor 0.35-0.45 mm/yr)*

Hantoro, W.S., A. Sofian & Z. Abidin (1994)- Geologi dan sumberdaya air wilayah pesisir utara lintasan Liquica- Los Palos, Propinsi Timor Timur. In: Proc. hasil-hasil penelitian Puslitbang Geoteknologi-LIPI 1993/1994, 1, p. 464-488.
*('Geology and water resources of the northern coastal area of Liquica- Los Palos, East Timor')*

Harahap, B.H. (2003)- Melange and broken formation on the road from Baucau to Manatuto, Timor Leste. Buletin Geologi (ITB) 35, 1, p. 25-42.
*(Melange and broken formation along Baucau- Manatuto road. Melange with scaly mudstone matrix and clasts of crinoidal limestone, pelagic limestone, oolitic limestone, radiolarian chert, sandstone, serpentinite, pillow lava and volcanic rock, fragments of manganese. Broken formation composed mainly of Triassic Aitutu Fm and Permian Maubisse and Atahoc Fms. Most clasts, except serpentinite and radiolarian chert same as broken formation units (also occur as more coherent, mappable units in Central Range of Timor Leste). Serpentinite,*

*radiolarian chert and possibly some pillow lavas thought to be derived from Flores Sea Basin to N. Melange and broken formation may have formed during Australian continent- Banda Arc collision in Pliocene)*

Harjanto, A. & C. Danisworo (2013)- Karakteristik mangan (Mn) di daerah Sipul dan sekitarnya, Kecamatan Niki-Niki, Kabupaten Soe, Propinsi Nusa Tenggara Timur. J. Ilmiah Magister Teknik Geologi (UPN) 6, 1, 14p.
*(online at: http://jurnal.upnyk.ac.id/index.php/mtg/article/view/250/212)*
*'(Characteristics of manganese (Mn) in Sipul and surrounding area, Niki-Niki, District Soe, West Timor'. Manganese in Late Cretaceous- Eocene Ofu Fm pelagic sediments N of Sipul. Mineralization of pyrolusite and psilomelane as 2-15 cm thin layers in calcilutite and chert series, with Mn content up to 52%. Manganese deposition probably related to hydrothermal processes)*

Harloff, C.E.A. (1936)- Vondst van een Radiumhoudend uraniumerts in de Timorcollectie van den Dienst van den Mijnbouw. De Ingenieur in Nederlandsch-Indie (IV) 3, 4, p. 64-70.
*('Presence of a radium-bearing uranium ore in the Timor collection of the Mines Department'. Radioactive mineral labeled from Timor, but not clear if this is really from Timor)*

Harper, K. (2004)- Constraining the uplift history of the Banda arc. Geology in Timor 2004 Symposium abstract, PESA Newsletter 73, p. 32
*(Apatite analysis from Aileu metamorphic complex suggest slow cooling between 16.4- 4.6 Ma, with no significant subsequent denudation)*

Harris, R.A. (1989)- Processes of allochton emplacement with special reference to the Brooks Range ophiolite, Alaska and Timor. Ph.D. Thesis, University of London, p. 1-514. *(Unpublished)*

Harris, R.A. (1991)- Temporal distribution of strain in the active Banda orogen: a reconciliation of rival hypotheses. J. Southeast Asian Earth Sci. 6, 3-4, p. 373-386.
*(On the Australian continental margin- Banda arc collision zone, mainly around Timor- Savu- Sumba. Collision began in C Timor at end of Miocene)*

Harris, R. (2006)- Rise and fall of the Eastern Great Indonesian Arc recorded by the assembly, dispersion and accretion of the Banda Terrane, Timor. Gondwana Research 10, 3-4, p. 207-231.
*(online at: https://pdfs.semanticscholar.org/a52b/abcbf54d27e4ac5cf6e97a0a89389f069391.pdf)*
*(Banda Terrane is remnant of Jurassic-Eocene arc-trench system that formed E part of Great Indonesian Arc. Arc rifted apart during Eocene- Miocene supra-subduction zone spreading, which dispersed ridges of Banda Terrane embedded in young oceanic crust as far S as Sumba and Timor. In Timor Banda Terrane high-level thrust sheets, detached from Banda Sea upper plate and uplifted by collision with NW Australia margin. Thrust sheets contain medium grade metamorphics overlain by Cretaceous- Miocene forearc deposits. Igneous zircons <162 Ma with clusters of ages at 83 Ma and 35 Ma. Ar/Ar plateau ages from metamorphics cluster at 32-38 Ma. Cooling curves show exhumation from ~550 °C to surface between 36-28 Ma; after this time no evidence of metamorphism. Banda Terrane rocks and events similar to E edge of Sunda Shelf and Banda Sea floor*)

Harris, R. (2011)- The nature of the Banda Arc-continent collision in the Timor region. In: D. Brown & P.D. Ryan (eds.) Arc-continent collision, Frontiers in Earth Sciences 2, Springer Verlag, Heidelberg, p. 163-211.
*(Extensive review of oblique collision of Banda arc- Australian continent in Timor region)*

Harris, R. (2012)- Free at last: new data helps Timor Leste redefine the processes of arc-continent collision. First Int. Geological Congress of Geology of Timor-Leste, Dili 2012, Abstract Book, p. 63-66.
*(Extended Abstract only)*

Harris, R.A. & M.G. Audley-Charles (1987)- Taiwan and Timor neotectonics: a comparative review. Mem. Geol. Soc. China 9, p. 45-61.
*(Taiwan and Timor both thrust belts formed by Pliocene- Recent convergence between passive continental margin and volcanic arc. Taiwan greater rate of uplift, thicker deforming sedimentary wedge and well- defined seismically active suture zone)*

Harris, R.A., J.S. Kaiser, A.J. Hurford & A. Carter (2000)- Thermal history of Australian passive margin cover sequences accreted to Timor during Late Neogene arc-continent collision, Indonesia. J. Asian Earth Sci. 18, 1, p. 47-69.
*(Paleotemperature and apatite fission track analysis of Australian continental margin cover sequences accreted to active Banda arc-continent collision indicate little to no heating during late Neogene uplift and exhumation. Thrust stacking of rise, slope and shelf units produces inverted vertical profile of increasing apatite fission track age with depth. Lack of any long confined track lengths in apatite from all units requires rapid and recent exhumation of thrust stack, coincident with rapid phases of Plio-Pleistocene exhumation These data preclude pre-Late Miocene tectonic burial or pre-Pliocene exhumation of NW Australian continental margin)*

Harris, R.A. & T. Long (2000)- The Timor ophiolite, Indonesia: model or myth? Geol. Soc. America (GSA), Spec. Paper 349, p. 321-330.
*(Only parts of ophiolite sequence of Timor are small bodies of spinel lherzolite and volcanic rocks. Lherzolite mostly as blocks in Bobonaro melange, and similar to peridotites from abyssal and passive-margin settings. E Timor lherzolite associated with Aileu metamorphic complex, with Mesozoic prograde metamorphism increasing toward lherzolite bodies via Barrovian zonation. Aileu complex and lherzolites similarly affected by Late Neogene collisional (retrograde) metamorphism. W Timor Atapupu and Nefomasi lherzolites indistinguishable from those of E Timor. Position of lherzolite indicates affinity to thrust sheets accreted from distal edge of Australian continental margin (lower plate) rather than forearc basement. Lherzolite and volcanics in Ocussi region different and may represent parts of young, SSZ ophiolite, emplaced less than few Myr of birth).*

Harris, R.A., R.K. Sawyer & M.G. Audley-Charles (1998)- Collisional melange development: geologic associations of active melange-forming processes with melange facies in the western Banda orogen, Indonesia. Tectonics 17, 3, p. 458-479.
*(http://onlinelibrary.wiley.com/doi/10.1029/97TC03083/pdf)*
*(Bobonaro melange facies include (1) broken formation, (2) matrix-rich mud injections, (3) mixed block-in-clay facies. Most important control is whether formed beneath or in front of upper plate Banda forearc Terrane. Kolbano Mts (Pliocene fold- thrust wedge of S Timor, structurally contiguous with Timor Trough deformation front) melange mostly broken formation and matrix-rich injections of mud from Jurassic- Cretaceous. Mud diapirs rise from near decollement along fault conduits. Melange in hinterland of orogenic wedge dominantly block-in-clay facies with large blocks from roof thrust sheets of Banda Terrane and Maubisse Fm units. At base of thrust sheets is Sonnebait Disruption Zone (SDZ), the initial suture between Banda Terrane and Australian margin sequences in Late Miocene- E Pliocene. Thickest accumulations of block-in-clay melange at S edge of SDZ, near Central/ Viqueque basins. Extent of block dispersion and mixing in SDZ indicative of intense shear strains perhaps induced by oversupply of accretable material when suture zone clogged by underthrusting of Australian continental margin)*

Harris, R.A., M.W. Vorkink, C. Prasetyadi, E. Zobell, N.Roosmawati & M. Apthorpe (2009)- Transition from subduction to arc-continent collision: geological and neotectonic evolution of Savu, Indonesia. Geosphere 5, p. 152-171.
*('Savu melange' product of Sunda/Banda arc- Australian continent collision. Blocks of Permian- Paleogene indurated sandstone, limestone and metamorphic and igneous rocks floating in muddy matrix, correlated with Bobonaro melange of Timor and associated with recent mud diapyrism. Previously unrecognized units of pillow basalt interlayered with Jurassic beds. Savu 1 well TD at 1227m in Cretaceous clastics (=different from Scott Plateau, but similar to Sumba). Includes detailed geological map and cross sections of S-C Savu. Island emergence documented by uplifted coral terraces encrusting highest ridges to 338m elevation: U/Th ages of uplifted coral yields ages of 122 ka, indicating slow uplift rates of 0.2 mm/yr)*

Harris, R.A. & S. Wu & T.R. Charlton (1992)- Comment and Reply on "Postcollisional extension in arc-continent collision zones, eastern Indonesia". Geology 20, 1, p. 92-94.
*(Discussion of Charlton 1991 paper on post-collisional isostatic rebound of Timor area)*

Harsolumakso, A.H. (1993)- Etude lithostratigraphique et structurale le long du transect Wini-Kolbano a Timor Ouest (Indonesie). Doct. Thesis, University of Nice- Sophia-Antipolis, Valbonne, p. 1-256. *(Unpublished)*
*('Lithostratigraphic and structural study along the Wini-Kolbano transect on West Timor'. Structure and stratigraphic studies across W Timor show two principal deformation phases: (1) pre-Miocene, probably corresponding to emplacement of allochthonous nappes and (2) intense thrusting phase at Early- Middle Pliocene boundary)*

Harsolumakso, A.H. & M. Villeneuve (1993)- Structural section of Timor: lithostratigraphical and structural study from central part of West Timor. Proc. 22nd Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung, 1, p. 82. *(Abstract only)*
*(Two main tectonic phases responsible for structuring of Timor: (1) pre-Miocene, corresponding to allochthonous nappes emplacement; (2) E-M Pliocene intensive thrusting)*

Harsolumakso, A.H., M. Villeneuve, J.J. Cornee, P. De Wever, G. Tronchetti, J. Butterlin, G. Glacon & P. Saint-Marc (1995)- Stratigraphie des series para-autochtones du Sud de Timor occidental (Indonesie). Comptes Rendus Academie Sciences, Paris 320, IIa, p. 881-888.
*(online at: http://geologie.mnhn.fr/PDW/HARSOLUMAKSO%20%20et%20al%201995.pdf)*
*('Stratigraphy of the para-autochthonous series in the South of West Timor'. New Late Triassic- Pleistocene reconstruction of stratigraphy of 'para-autochthonous' series of Kolbano area in SW Timor)*

Hartmann, E. (1916)- Kurze Mitteilung uber Uberschiebungen auf Niederlandisch Timor. Private print, Batavia, 4p.
*('Brief communication on thrusts on Netherlands Timor'. With map and cross-sections of Ayer Mati- Soengei Kokilah area S of Kupang. Shows autochthonous Jurassic sediments, over which Permian limestones with serpentinite and diabase porphyrite and Triassic 'Halstatter' cephalopod limestone were thrusted from NE. All overlain by Late Tertiary)*

Hartono, H.M.S., S. Tjokrosaputro, K. Suwitodirdjo & H.M.D. Rosidi (1978)- Some notes on the geologic map of Timor. In: S. Wiryosujono & A. Sudradjat (eds.) Proc. Regional Conf. Geology and Mineral Resources of Southeast Asia (GEOSEA), Jakarta 1975, p. 69-76.

Hasan, K. (1984)- A study on heavy minerals from the Kekneno Area, West Timor, Indonesia. Certificate of Chelsea College, Chelsea College, University of London, p. *(Unpublished)*

Hasibuan, F. (1994)- Fauna Gondwana dari Formasi Maubisse, Timor Timur. Proc. 23rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, 1, p. 104-111.
*("Gondwana fauna from the Maubisse Formation, E Timor'. Occurrence of 'Gondwanan' cool-climate brachiopods (Globiella foordi) and bivalves (Atomodesma and Eurydesma) in Permian of central part of Timor Leste, 75 km S of Dili)*

Hasibuan, F. (2007)- Penelitian biostratigrafi Mesozoikum Pulau Rote, Nusa Tenggara Timur. J. Sumber Daya Geologi 17, 3, p. 126-144.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/285/256)*
*('Research on Mesozoic biostratigraphy of Rote Island, East Nusatenggara'. Distribution of Triassic, Jurassic and Cretaceous rocks on Roti broader than previously mapped. Paleozoic not exposed, but Permian ammonite Timorites possibly came up in mud volcano. Aitutu/ Kekneno Fm with Carnian- E Norian Halobia spp. (H. austriaca, H. styriaca, H. charlyana). Presence of Monotis salinaria in Norian Aitutu Fm. Jurassic Wailuli Fm with Perispinctes, Belemnopsis moluccana, B. galoi, Irianites. Nakfunu Fm rich in radiolaria of Albian age)*

Hasibuan, F. (2009)- Geological and paleontological investigation of Rote island, Indonesia. Acta Geologica Sinica 30, Suppl. 1, p. 13. *(Abstract only)*
*(Rote Island Permian not exposed, but ammonite Timorites in float indicates Permian, brought to surface by mud volcanoes. Well exposed fossiliferous Mesozoic. Carnian-Norian Aitutu Fm thin-bedded marl with Halobia and Monotis. Bathonian-Berriasian Wailuli Fm fine sandstones and sandy limestone with Perisphinctes*

*timorense, Belemnopsis moluccana, B. galoi, B. stolleyi, etc.. Cretaceous Nakfunu Fm calcilutite with chert interbeds and radiolarians such as Dictyomitra sp., indicating Albian age. Aitutu Fm probably overturned. Mesozoic overlain by Bobonaro Complex)*

Hayasaka, I. (1939)- On a piece of *Fusulina*-limestone found in the Niki-Niki region, Timor. Kwagaku (Science) 9, p. 86-87.

Hayasaka, I. (1953)- *Hamletella*, a new Permian genus of brachiopoda, and a new species from the Kitakami Mountains, Japan. Trans. Proc. Palaeontological Soc. Japan, N.S. 12, p. 89-95.
*(online at: www.jstage.jst.go.jp/article/prpsj1951/1953/12/1953_12_89/_pdf)*
*(Hamletella n.gen. proposed for Permian brachiopod from Timor described as ?Streptorhynchus altus by Hamlet (1928))*

Hayasaka, I. & S. Gan (1940)- A note on *Camarophoria 'purdoni'* from the Permian of Timor. J. Geol. Soc. Japan 47, 558, p. 127-132.
*(online at: www.jstage.jst.go.jp/article/prpsj1935/1940/17/1940_17_19/_pdf)*
*(Permian brachiopod Camarophoria 'purdoni' of Broili (1916; presumably from Basleo area) includes several species. New species proposed Camarophoria timorensis (now usually called Stenoscisma timorense and viewed as peri-Gondwanan, anti-tropical species; JTvG))*

Hayasaka, I. & M. Hosono (1951)- A new Permian *Spirifer* from Timor. Short Papers Inst. Geol. Paleontology, Tohoku University, Sendai, 3, p. 25-28.
*(Short paper describing new Permian brachiopod species Spirifer basleoensis from Basleo, Timor)*

Hayasaka, I. & K. Ishizaki (1939)- On the occurrence of Eocene foraminifera in the neighbourhood of Besleo, Timor. Mem. Fac. Science Agric., Taihoku Imp. University, 22, 2, Geol. 15, p. 9-17.
*(online at: http://twgeoref.moeacgs.gov.tw/star/1939/19390077/0009.PDF)*
*(Eocene limestone blocks found in Basleo area, Niki-Niki region, SW Timor, otherwise known mainly for its abundant Permian fossils and Cretaceous manganese-bearing beds with abundant shark teeth. Descriptions of alveolinids (Fasciolites timorensis, F. wichmanni) and Nummulites cf. perforata)*

Hehenwarter, E. (1951)- Erganzungen zur Tabulatenfauna des Perm von Timor und zur Stellung des Genus *Trachypsammia* Gerth. Palaeontographica Suppl. IV, Beitr. Geologie Niederl.-Indien V, 2, p. 57-94.
*('Observations on Timor Permian tabulate coral faunas')*

Helmers, H., J. Sopaheluwakan, F.F. Beunk & S. Tjokrosapoetro (1991)- Metasomatism in basal amphibolite of ophiolite complexes around the Banda Sea, exemplified by the Atapupu outcrops of North Timor, Indonesia. In: Proc. Silver Jubilee Symposium on the dynamics of subduction and its products, Yogyakarta 1991, Indonesian Inst. Sciences (LIPI), p. 302-314.

Helmers, H., J. Sopaheluwakan, S. Tjokrosapoetro & E. Surya Nila (1989)- High-grade metamorphism related to peridotite emplacement near Atapupu, Timor with reference to the Kaibobo peridotite on Seram, Indonesia. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, 2/3, p. 357-371.
*(Peridotites from Seram and Atapupu, Timor show cooling and deformation history starting at ~1050°C Metamorphic conditions in pelitic-mafic rocks below Atapupu peridotite >800°C at 6- 7 kbar. Prograde metamorphism nearly obliterated. Mylonitization accompanied metamorphic re-equilibration. Granitic to trondjemitic melt formed from metamorphites above 750°C. Displaced part of this melt is included in late granitic bodies cross-cutting peridotite. Axial directions of four successive folding phases at Atapupu consistent with N-S shortening during subduction. Folding and mylonitization are simultaneous.)*

Henrici, H. (1934)- Foraminiferen aus dem Eozan und Altmiozan von Timor. In: J. Wanner (ed.) Beitrage zur Geologie von Niederlandisch-Indien, Palaeontographica Suppl. IV, 1, p. 1-56.

*('Foraminifera from the Eocene and Early Miocene of Timor'. Larger foraminifera of M Eocene (Nummulites, Fasciolites = Alveolina), Late Eocene (Nummulites, Pellatispira, Discocyclina) and Early Miocene age (Spiroclypeus, Miogypsina, Lepidocyclina (Nephrolepidina)) from W and E Timor)*

Heritsch, F. (1937)- Rugose Korallen aus dem Salt Range, aus Timor und aus Djoulfa, mit Bemerkungen uber die Stratigraphie des Perms. Sitzungsberichte Akademie Wissenschaften, Wien, Math.-Naturw. Kl. Abt. 1, 146, p. 1-16.
*('Rugose corals from the Salt Range (Himalaya), from Timor and from Djoulfa, with remarks on the stratigraphy of the Permian'. Brief descriptions of some Permian rugose corals)*

Hinde, G.J. (1908)- Radiolaria from Triassic and other rocks of the Dutch East Indian Archipelago. In: R.D.M. Verbeek, Molukkenverslag. Geologische verkenningstochten in het oostelijke gedeelte van den Nederlandsch Oostindische Archipel. Jaarboek Mijnwezen Nederlandsch Oost-Indie 37 (1908), Wetenschappelijk Gedeelte, p. 694-736.
*(Radiolaria from Timor, Savu, Ceram, Sulawesi, Buru and Mangoli in Verbeek's Moluccas report. Probably mainly of Late Triassic-Jurassic age. 83 species identified, including 74 new species. Richest assemblages from Triassic Halobia-Daonella-bearing cherty limestones from Rote and Savu and Timor (Cenosphaera, Dictyomitra, etc.). Fewer, but similar species in loose chert pebbles collected at Seram and E Sulawesi)*

Hirschi, H. (1907)- Zur Geologie und Geographie von Portugiesisch Timor. Neues Jahrbuch Mineral. Geol. Palaont. Beilage Band 24, 2, p. 460-474.
*('On the geology and stratigraphy of Portuguese Timor'. First observations on geology and stratigraphy of Portuguese East Timor along traverses made in 1904 during investigation of oil potential (for BPM?))*

Hirschi, H. (1933)- Eine geologische Expedition in Portugiesisch Timor; aus Tagebuchnotizen vor 29 Jahren. Mitteilungen Naturwissenschaftlichen Gesellschaft, Thun, N.F. 13, p. 25-41.
*('A geological expedition in Portuguese East Timor, from 29-year old diary notes')*

Hoffmann, R. & H. Keupp (2010)- The myth of the Triassic lytoceratid ammonite *Trachyphyllites* Arthaber, 1927, in reality an Early Jurassic *Analytoceras hermanni* Gumbel, 1861. Acta Geol. Polonica 60, 2, p. 219-229.
*(online at: https://geojournals.pgi.gov.pl/agp/article/view/9830/8363)*
*(Trachyphyllites costatum Arthaber (1927) described from single specimen from limestone boulder in Tertiary melange in Bihati River, Timor and presumed to be of Late Triassic (Norian) age. However, 'Hallstatt facies' limestones ranges in age from Triassic- E Jurassic (Hettangian). New collections from other erratic boulders in type locality confirmed observations (Tozer 1971, Krystyn 1978) that age of original boulder is E Jurassic (Hettangian). 'Trachyphyllites costatum Arthaber' is junior synonym of Analytoceras hermanni (Gumbel, 1861))*

Howell, D.G. (1989)- Tectonics of suspect terranes, mountain building and continental growth. Chapman and Hall, London, p. 1-232.
*(Includes chapter 'Taiwan to Timor' (p. 159-167) on collisions of island arcs and continental margins)*

Hunter, D.C. (1993)- A stratigraphic and structural study of the Maubisse area, East Timor, Indonesia. Masters Thesis, West Virginia University, Morgantown, p. 1-214. *(Unpublished)*
*(Geologic mapping around Maubisse village in E Timor. Two Permian and one Triassic formations identified: (1) Permian Maubisse Fm of volcaniclastics, limestones and pillow basalts, (2) Permian Cribas Fm, dominated by turbiditic clastics, and (3) Triassic Aitutu Fm, composed mostly of carbonates. Maubisse Fm has been thrust along unconformable contact between Cribas and Aitutu Fm resulting in zone of tectonic melange)*

Hutubessy, S. (1998)- Analisis data gayaberat dan seismologi dalam upaya memahami proces gempabumi Dili, Timor Timur. J. Geologi Sumberdaya Mineral, 8, 82, p. 14-27.
*('Gravity and seismological data analysis in an attempt to understand the process of the Dili earthquake, East Timor'. E Timor dominant strike-slip faults in N-S direction, secondary fault pattern in E-W direction)*

Idrus, A., E.M. Ati & A. Harijoko (2012)- Preliminary study on the occurrence of mud-volcano-related sedimentary manganese layers at South Central Timor Regency, Timor Island, Indonesia. Proc. 41st Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta, 2012-M-16, p.
*(Sedimentary manganese layers in S Central Timor 2-10 cm thick and interbedded with (Jurassic?) Cretaceous-Eocene deep sea sedimentary rocks of Ofu and Nakfunu Fms., incl. red-brown claystone, radiolarian chert, slate, marl and white-pink calcilutite. Rock formations underlain by Bobonaro Fm (?; JTvG). Significant manganese layers mostly found ~50- 1000m from margin of mud-volcanoes. Manganese layers strongly deformed. Ore mainly composed of pyrolusite ($MnO_2$), groutite, feitknechtite, manganite and less hematite. Manganese minerals interpreted as alteration products of hydrothermal processes induced by mud-volcanoes)*

Idrus, A., E.M. Ati, A. Harijoko & F.M. Meyer (2012)- Occurrences and characteristics of sedimentary-related manganese layers in Timor island, Indonesia. In: N.I. Basuki (ed.) Proc. Banda and Eastern Sunda arcs, Indonesian Soc. Econ. Geol. (MGEI) Ann. Conv. 2012, Malang, p. 201-216.
*(Similar to paper above on sedimentary manganese in folded bathyal Cretaceous sediments of Kolbano thrust belt, S Central Timor. Manganese nodules (mainly manganite MnO(OH) interpreted to be precipited on deep sea floor. Manganese layers are formed by Mn remobilization in seawater column, precipitated and deposited on deep sea floor. Probably influenced by 'hydrothermal process' of mud-volcanoes)*

Idrus, A., E.M. Ati, A. Harijoko & F.M. Meyer (2013)- Characteristics and origin of sedimentary-related manganese layers in Timor Island, Indonesia. J. Geologi Indonesia 8 4, p. 191-203.
*(online at: http://ijog.bgl.esdm.go.id/index.php/IJOG/article/view/169/169)*
*(Manganese layers of 2-10 cm thick interbedded with deformed deep sea reddish claystone, radiolarian chert, slate, marl and white and pinkish calcilutite of (Jurassic) Nakfunu Fm. Stratigraphically underlain by Bobonaro Fm(?). Two types of manganese ores: mainly layers but also manganite nodules)*

Ikegami, T. (1942)- Oil reserve in Portuguese Timor. J. Mining Inst. Japan 58, 685, p. 320-331.

Imdahl, H. (1922)- Beitrage zur Petrographie von West-Timor. Centralblatt Mineralogie Geologie Palaont., p. 65-76.
*(online at: www.biodiversitylibrary.org/item/203797#page/91/mode/1up)*
*('Contributions to the petrography of West Timor'. Petrographic descriptions of rocks collected by Wanner (1909, 1911) in W Timor. Igneous (diorite, gabbro, peridotite, lherzolite, serpentinite), volcanics (quartz keratophyr, andesite, diabase) and metamorphics (amphibolites, chlorite schist, mica schist and epidote schist). No figures)*

Ishikawa, A., Y. Kaneko, A. Kadarusman & T. Ohta (2007)- Multiple generations of fore-arc mafic-ultramafic rocks in the Timor- Tanimbar ophiolite, Eastern Indonesia. In: M. Santosh & S. Maruyama (eds.) Island arcs past and present, Gondwana Research 11, p. 200-217.
*(Mafic-ultramafic rocks in Timor-Tanimbar region suggest uplift of fragments of mantle-crust by buoyant subduction of Australian continent. Peridotite masses in Timor (Mutis, Atapupu, Dili) mostly fertile (lherzolitic) in compositions. Overlying Ocussi volcanics resemble island-arc tholeiite, inconsistent with genetic relationship with Timor lherzolites. In eastern islands (Moa, Dai) ophiolitic rocks island-arc affinities. Petrological and geochemical variations best explained by combination of (1) temporal change of igneous activity possibly associated with development of forearc basin and (2) emplacement of spatially different forearc regions in each locality. Fertile lherzolite in forearc setting, high-Mg andesite magmatism, inverted metamorphic grade in associated metamorphics and formation of marginal basins may be linked to injection of high-T asthenospheric materials into mantle wedge)*

Ishikawa, A., Y. Kaneko, T. Ohta & Y. Isozaki (2011)- Ophiolites in the non-volcanic Banda outer arc of East Indonesia. Journal of Geography (Chigaku Zasshi) 120, 1, p. 52-64.
*(In Japanese; online at: www.jstage.jst.go.jp/article/jgeography/120/1/52/_pdf)*
*(Looks like summary of Ishikawa et al. 2007)*

Jacobson, M.I. & K. Sani (1993)- Post-convention fieldtrip 1993- West Timor, Nusa Tenggara Timur. Indon. Petroleum Assoc. (IPA), Jakarta, p. 1-95.

Jafar, S.A. (1975)- Calcareous nannoplankton from the Miocene of Rotti, Indonesia. Verhandelingen Kon. Nederl. Akademie Wetenschappen, Afd. Natuurkunde, Amsterdam, ser. 1, 28, p. 1-99.
*(online at: www.dwc.knaw.nl/DL/publications/PU00010962.pdf)*
*(Calcarous nannoplankton from single chalk sample 168 from Bebalain, Roti, collected by Molengraaff 1910 and previously studied by Tan Sin Hok (1927) and Kamptner (1955). Seventy-four recognizable autochthonous species of calcareous nannoplankton belonging to 18 genera. Age of sample upper NN9, Discoaster hamatus zone (= early Late Miocene; ~10 Ma). Also common reworked E Cretaceous- E Miocene nannoplankton)*

Jafar, S.A. (1975)- Some comments on the calcareous nannoplankton genus *Scyphosphaera* and the neotypes of *Scyphosphaera* from Rotti, Indonesia. Senckenbergiana Lethaea 56, p. 365-379.

Jansen, H. (1934)- Die Variationsstatistische Methode angewandt auf ein groszes Material von *Schizoblastus* aus dem Perm von Timor und einige neue Anomalien dieser Gattung. Verhandelingen Kon. Akademie Wetenschappen, Amsterdam, 37, 10, p. 819-825.
*('Variation statistics method applied to a large collection of Schizoblastus from the Permian of Timor and some new anomalies of this genus'. Permian blastoids from Basleo and Niipol, W Timor)*

Jell, P.A. (1999)- A monasterid starfish from the Permian of Timor. Mem. Queensland Museum, Brisbane, 43, 1, p. 340.
*(Brief first description of two arms of small Permian starfish from Noil Tonino I, SE of Basleo, from Macurda collection)*

Johnston, C.R. (1981)- A review of Timor tectonics with implications for the development of the Banda Arc. In: A.J. Barber & S. Wiryosujono (eds.) The geology and tectonics of Eastern Indonesia, Proc. CCOP-IOC SEATAR Working Group Mtg., Bandung 1979, Geol. Res. Dev. Centre (GRDC), Bandung, Spec. Publ. 2, p. 199-216.
*(Australia- Timor collision started ~3Ma, but almost all continental rocks in Timor formed part of Banda forearc. Jurassic and older continental rocks of Timor have N Australian affinity, but probably rifted off in Late Jurassic, collided with SE Asia subduction zone in Cretaceous and was reunited with Gondwanaland when Australian continent arrived at this subduction zone)*

Johnston, C.R. & C.O. Bowin (1981)- Crustal reactions resulting from the mid-Pliocene to Recent continent island arc collision in the Timor region. BMR J. Australian Geol. Geophysics 6, p. 223-243.
*(online at: www.ga.gov.au/corporate_data/81078/Jou1981_v6_n3_p223.pdf)*
*(DSDP-262 data suggest continental edge of Australia first entered subduction zone in Timor region at ~3 Ma. With map of position of pre-collisional continental margin of Australia)*

Jonker, H.J.W. (1873)- Rapport van het voorloopig onderzoek naar de aanwezigheid van kopererts op het eiland Timor. Jaarboek Mijnwezen Nederlandsch-Indie 1873, 1, p. 157-186.
*('Report of the preliminary investigation of presence of copper ore on Timor Island'. Earlier reports on presence of copper minerals (malachite, lazurite) in N coastal area of Timor could partly be confirmed, but nowhere in commercially significant quantities. Areas investigated in regions of Harneno and Beboki dominated by serpentinitic rock, Fialarang and Niti copper-bearing claystones, etc.)*

Jouannic, C., C.H. Hoang, W.S. Hantoro & R.M. Delimon (1988)- Uplift rate of coral reef terraces in the area of Kupang, West Timor; preliminary results. Palaeogeogr. Palaeoclim. Palaeoecology 68, p. 259-272.
*(In Kupang area seven uplifted Quaternary coral reef terraces. Fifth step at +44m dated at 152,000 yrs, giving mean uplift rate of 0.3 mm/yr since last interglacial; faster uplift rates in other parts of Timor)*

Juliansyah, M.N. & R.D. Putrohari (2014)- Identifying the amount of uplifting of Timor Island using pressure data in Banli-1 well, Bonaparte Basin, southern Banda Arc. Proc. 43rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, PIT IAGI 2014-060, 5p.
*(Banli-1 well drilled in 1993 in S edge of W Timor. Overpressure interval indicates uplift event of Timor. Depth of Jurassic on Timor Island 2296' higher than on Ashmore Platform. Minimum amount of uplift of Timor Island identified from difference between actual pressure data and hydrostatic pressure curve is ~1800', suggesting position of Timor Island prior to late uplift is already higher than Ashmore Platform of NW Australian margin)*

Kadarusman, A., S. Maruyama, Y. Kaneko, T. Ota, A. Ishikawa, J. Sopaheluwakan & S. Omori (2010)- World's youngest blueschist belt from Leti Island in the non-volcanic Banda outer arc of Eastern Indonesia. Gondwana Research 18, 1, p. 189-204.
*(Timor-Tanimbar non-volcanic outer Banda Arc with world's youngest 'A'-type high-P metamorphic belt, outcropping with different stages of evolution. Advanced domal uplift in Timor, still in first stage of tectonic extrusion on Kisar, Leti, Moa, Sermata and Laibobar. Metamorphics on Leti tectonically juxtaposed against overlying ultramafic rocks and underlying unmetamorphosed continental shelf sediments, bound by normal and reverse faults, respectively. Leti metapelites and metabasite units progressive metamorphic zones; highest grades in structurally intermediate levels. Protoliths of Leti metamorphics originally Permo-Triassic. Sediments and igneous rocks at margin of advancing Australian continent entered subduction zone immediately prior to commencement of Banda Arc-Australia collision in Pliocene. Burial reached 30-35 km. Slab-breakoff at depth in collision zone facilitated rapid uplift by wedge extrusion and active erosion during exhumation)*

Kadarusman, A., S. Maruyama, Y. Kaneko, T. Tsujimori, T. Ohta & J. Sopaheluwakan (1997)- On-going exhumation of blueschist belt in the Timor-Tanimbar Region, Eastern Indonesia. Abstracts, Japan Earth and Planetary Science Joint Meeting 1997, p.

Kamptner, E. (1955)- Fossile Coccolithineen-Skelettreste aus Insulinde; eine mikropalaeontologische Untersuchung. Verhandelingen Kon. Nederl. Akademie Wetenschappen, Amsterdam, ser. 2, 50, 2, p. 1-105.
*(online at: www.dwc.knaw.nl/DL/publications/PU00011530.pdf)*
*('Fossil coccolith skeletal remains from Indonesia: a micropaleontological investigation'. Study of coccolithophores from Jurassic-Cretaceous and Upper Tertiary marls of Timor and Roti, from same samples as studied by Tan Sin Hok 1927 and later also by Jafar 1975. Paleontological study without maps or stratigraphic context. Numerous new species)*

Kaneko, Y., S. Maruyama, A. Kadarusman, T. Ota, M. Ishikawa, T. Tsujimori, A. Ishikawa & K. Okamoto (2007)- On-going orogeny in the outer-arc of the Timor-Tanimbar region, Eastern Indonesia. Gondwana Research 11, p. 218-223.
*(Timor-Tanimbar one of youngest high P/T metamorphic belts in world. Deformation and metamorphic grade increase towards centre of 1 km thick crystalline belt. Metamorphics extruded as thin sheet between ophiolites and underlying shelf sediments. Central crystalline unit Barrovian-type overprint of high P/T metamorphics during wedge extrusion, and metamorphic grade pumpellyite-actinolite to upper amphibolite facies. Quaternary uplift of ~1260m in Timor in W, decreasing toward Tanimbar. Exhumation of metamorphics started in Late Miocene in W Timor, migrating/younging to E. Deep-seated high P/T metamorphic belt extruded into shallow levels, followed by doming. 'Mountain building' restricted to second stage. Quaternary uplift due to rebound of subducting continental crust due to oceanic slab break-off. Tanimbar not yet affected by later doming)*

Kanmera, K. & K. Nakazawa (1973)- Permian- Triassic relationship and faunal changes in the eastern Tethys. In: Permian-Triassic systems and their mutual boundary. Mem. Canadian Petroleum Geol. 2, p. 100-119.
*(Description of stratigraphy and faunal sequences of Upper Permian- Lower Triassic from sections in Japan, S China and Indochina. Timor 'allochthonous' shallow marine Asinepe Limestone close affinities to Asian facies and faunas; Audley-Charles et al. 1979)*

Karig, D.E., A.J. Barber, T.R. Charlton, S. Klemperer & D.M. Hussong (1987)- Nature and distribution of deformation across the Banda Arc-Australian collision zone at Timor. Geol. Soc. America (GSA) Bull. 98, 1, p. 18-32.

*(Profiles near Timor show Banda Arc-Australia collision zone similar to typical oceanic subduction system. Present deformation most intense at foot of Timor Trough inner slope. Deformation front discontinuously advancing S as new thrust slices develop in subducting Australian margin strata. Present deformation negligible in Savu fore-arc basin, N of Timor. Back-arc thrusting N of volcanic arc, but convergence minor compared with Timor Trough deformation. Along-strike variations in Timor Trough- Savu Basin deformation may be related to variable degree of involvement of Australian continental margin along arc)*

Kato, M., K. Takeuchi, A. Hendarsyah & D. Sundari (1999)- On the occurrence of the Permian brachiopod genus *Leptodus* in Timor. Geol. Res. Dev. Centre (GRDC), Bandung, Seri Paleontologi 9, p. 43-51.
*(Brachiopod Leptodus probably from Permian Maubisse Fm, now embedded in Tertiary clay, indicates Timor was in Tethyan faunal realm (but Kato et al. also quote Leptodus occurrence in W Australia; JTvG). Timor Permian marine faunas closer affinity to SE Asian Permian faunas than to Australian Gondwana)*

Kaye, S.J. (1989)- The structure of eastern Indonesia: an approach via gravity and other geophysical methods. Ph.D. Thesis, University College, University of London, p. 1-239.
*(online at: www.bandaarcgeophysics.co.uk/Thesis/Thesis-kaye.pdf)*
*(Study of tectonics of Timor and Tanimbar-Kai regions incorporating gravity data. With discussions of obducted ophiolite terrains and comparisons to PNG and Taiwan. Assumes most of material on Timor belongs on NW Australian margin, and prior to collision Timor region was probably promontory or plateau composed of sedimentary and volcanic units)*

Kaye, S.J. & J.S. Milsom (1988)- A new Bouguer anomaly map of Timor eastern Indonesia. University College London Gravity Research Group, 31p. *(Unpublished)*

Keep, M., L. Barber & D. Haig (2009)- Deformation of the Cablac Mountain Range, East Timor: an overthrust stack derived from an Australian continental terrace. J. Asian Earth Sci. 35, 2, p. 150-166.
*(Cablac Mountain Range in E Timor S-directed thrust stack of mainly Triassic- E Jurassic carbonates, in structural contact with underlying Lolotoi Fm metamorphics. Lolotoi Fm and overlying Gondwanan thrust stack structurally emplaced on M Eocene units to S. Cablac thrust stack bound to N by high-angle fault along which crush breccia with clasts from Gondwana Megasequence and Asian Banda Terrane. Previously Cablac Lst suggested to be massive E Miocene limestones in depositional contact with underlying units)*

Keep, M., L. Beck & P. Bekkers (2005)- Complex modified thrust systems along the southern margin of East Timor. Australian Petrol. Prod. Explor. Assoc. (APPEA) J. 2005, p. 297-310.
*(Study of Plio-Pleistocene accretionary wedge along S coast of East Timor)*

Keep, M. & D.W. Haig (2010)- Deformation and exhumation in Timor: distinct stages of a young orogeny. Tectonophysics 483, p. 93-111.
*(E Timor data suggest major break between deformed pre-collisional strata and relatively undeformed overlying deposits in Late Miocene (9.8-5.5 Ma). Three distinct phases of orogenic development: initial collision and emplacement of early nappes creating loading and diapirism (9.8-5.5 Ma), tectonic quiet interval (5.5 Ma- 4.5 Ma), which may represent time of locking of subduction system, and post 4.5 Ma uplift, unroofing and further diapirism in response to isostatic rebound. First emergence above sea level ~3.1 Ma))*

Keep, M. & D.W. Haig (2010)- Timor collision: deformation and tectonic implications. 20th Australian Geological Convention, Canberra 2010, Geol. Soc. Australia, Abstracts 98, p. 205. *(Abstract only)*
*(New biostratigraphic dating places collision between Australian Plate and Banda Arc at 10.9- 9.8Ma. Collision produced complex intercalation of thrust slices from Australian Plate and Banda Arc sides of plate boundary. Initial thrust emplacement between 9.8-5.5 Ma. Intercalation of Australian-derived material with material from Banda Terrane complicated by over-folding of Banda Terrane thrust slices. Young high-angle strike-slip faults control much of present-day topographic expression of island)*

Kenyon, C.S. (1974)- Stratigraphy and sedimentology of the Late Miocene to Quaternary deposits of Timor. Ph.D. Thesis, University of London, p. 1-291. *(Unpublished)*

*(Stratigraphy of W Timor includes late M Miocene- Quaternary (N15-N23) Viqueque group sediments above Bobonaro olistostrome. Viqueque group subdivided into 6 formations, 26 members. Several phases of uplift and subsidence. Paleogeographies showing uplifted area to N, deep water sediment transport to South)*

Kenyon, C.S. (1999)- The exploration of Timor. In: R.W. Murphy (ed.) The silver years- 25 years of SEAPEX, SE Asia Petroleum Expl. Soc. (SEAPEX), Singapore, p. 77-83.
*(Personal history of Ph.D. fieldwork in Central Basin of West Timor in 1969-1970. Little or no geology)*

Keupp, H. (2009)- Timor: Bonanza nicht nur fur Triasfossilien. Fossilien, 4/2009, p. 214-220.
*(Well-illustrated report on 2008 fossil collecting trip to Baun area, SW Timor. Large erratic, generally reddish color Permian- Lower Jurassic limestone blocks in olistostrome in Late Tertiary marl-radiolarite-tuff succession. Triassic- Early Jurassic limestones open ocean facies, locally rich in ammonites and aulocerate belemnites, commonly coated by manganese layer. Also found 1-5 cm big globular hydrozoans Heterastridium conglobatum, of Norian age and possibly pelagic hydrozoan colony)*

Kieslinger, A. (1924)- Die Nautiloideen der mittleren und oberen Trias von Timor. Jaarboek Mijnwezen Nederlandsch Oost-Indie 51 (1922), Verhandelingen, p. 51-145.
*('The nautiloids from the Middle and Upper Triassic of Timor'. Mainly taxonomic descriptions of nautiloid ammonites collected by 1916 Jonker expedition. Mainly from isolated blocks of 'Halstatter facies' condensed Triassic section (other classic works on Triassic ammonites are by Welter 1914, 1915 and Diener 1922))*

Koesmono, M (1975)- Rekonstruksi palinspastik dan evolusi geologi daerah Tubuh Bokon, Timor. Thesis, Geol. Dept. UNPAD Padjadjaran University, Bandung, p. 1-199. *(Unpublished)*
*('Palinspastic reconstruction and geologic evolution of the Tubuh Bokon area, N Central Timor')*

Koesnama & A.K. Permana (2015)- Sistem minyak dan gas di cekungan Timor, Nusa Tenggara. J. Geologi Sumberdaya Mineral 16, 1, p. 23-32.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/48/50)*
*('Petroleum system in the Timor Basin, Nusa Tenggara'. Brief review of Permian- Jurassic potential source and reservoir rocks of Timor)*

Koevoets, M J., A.S. Schulp & S.R. Troelstra (2014)- The age and provenance of the *Globidens timorensis* holotype. Berita Sedimentologi 30, p. 59-62.
*(online at: www.iagi.or.id/fosi)*
*(Three fossil teeth reported from U Cretaceous of W Timor are only known fossils of Mosasaurus-type marine reptiles in E Tethys region. However, there is some uncertainty about exact locality of origin of these fossils)*

Koker, E.M.J. (1924)- Anthozoa uit het Perm van het eiland Timor. I. Zaphrentidae, Pterophyllidae, Cystiphyllidae, Amphiastreidae. Jaarboek Mijnwezen Nederlandsch Oost-Indie 51 (1922), Verhandelingen, p. 1-50.
*(Permian corals from Timor, collected by 1916 Jonker expedition, from Wesleo, Nefotassi, Bitauni, etc.. Mostly from reddish tuffaceous marls of Wesleo region and associated with rich crinoid, blastoid and brachiopod faunas. Descriptions of probably deeper water solitary rugose assemblages of Zaphrentis spp., Amplexus, Polycoelia, Pterophyllum, Cystiphyllum, Prosmilia. Mixture of cosmopolitan and endemic species)*

Koperberg, E.J. (1931)- Jungtertiare und Quartare Mollusken von Timor. In: H.A. Brouwer (ed.) 2e Nederlandsche Timor-Expeditie VII, Jaarboek Mijnwezen Nederlandsch-Indie 59 (1930), Verhandelingen 1, p. 1-165.
*(Late Tertiary and Quaternary marine molluscs from W Timor, collected by 1915-1917 Jonker expedition. Little or no stratigraphy or locality information)*

Kossovaya O.L. (2009)- Artinskian-Wordian antitropical rugose coral associations: a palaeogeographical approach. Palaeoworld 18, p. 136-151.

*(Antitropical rugose corals distributed in temperate zones of Boreal and Perigondwanan realms. E-M Permian antitropical associations represented by 'Cyathaxonia fauna'. Roadian-Wordian in S Hemisphere Perigondwanan temperate zone (Australia, Timor, SE Pamirs) predominance of Verbeekiella- Wannerophyllum assemblage. Timor Basleo Fm fauna with 'typical deep-water Peri-Gondwanan' Wannerophyllum, Verbeekiella, Timorphyllum, etc.. Through time gradually replaced by Cathaysian faunas)*

Kristan-Tollman, E. (1988)- I. Coccolithen aus den aelteren Allgauschichten (Alpiner Lias, Sinemur) von Timor, Indonesien. Geol. Palaeont. Mitteilungen Innsbruck 15, p. 71-83.
*(online at: www2.uibk.ac.at/downloads/c715/gpm_15/15_071-083.pdf)*
*('Coccoliths from the Alpine Liassic, Sinemurian, from Timor'. First description of Early Jurassic (Sinemurian) nannofossils, from Aitutu Fm at SW edge of Soe town and Meto River, SW of Soe, W Timor. Rel. low diversity assemblage, dominated by Timorhabdus timorensis. Associated with common ostracode Ptychobairdia neokristanae)*

Kristan-Tollman, E. (1988)- II. Coccolithen aus dem Pliensbach (aelteren Allgauschichten, Alpiner Lias) von Timor, Indonesian. Geol. Palaeontol. Mitteilungen Innsbruck 15, p. 109-133.
*(online at: www2.uibk.ac.at/downloads/c715/gpm_15/15_109-133.pdf)*
*('Coccoliths from the Alpine Liassic, Pliensbachian, from Timor'. Early Jurassic (Pliensbachian) nannofossils from Aitutu Fm at Meto River, SW of Soe, W Timor. Single sample with 20 species, dominated by Biscutum novum, Lotharingius haufforum and Discorhabdus ignotus)*

Kristan-Tollmann, E. (1991)- Mikrocrinoiden aus der Obertrias der Tethys. Geol.-Palaont. Mitteilungen Innsbruck 17, p. 51-100.
*(online at: www2.uibk.ac.at/downloads/c715/gpm_17/051_100_17.pdf)*
*('Microcrinoids from the Upper Triassic of the Tethys'. With descriptions of new taxa from Alpine Late Triassic of Eastern Alps (Austria), Taurus Mts (Turkey) and Norian 'Hallstatt Limestone' at Bihati near Baun, W Timor, incl. Leiocrinus krystini, L. gracilis, Bihaticrinus manipalus, etc.)*

Kristan-Tollman, E., S. Barkham & B. Gruber (1987)- Potschenschichten, Zlambachmergel (Hallstatter, Obertrias) und Liasfleckenmergel in Zentraltimor, nebst ihren Faunenelementen. Mitteilungen Osterreichischen Geol. Gesellschaft 80, p. 229-285.
*(online at: http://geologie.or.at/index.php/downloads2/category/7-archiv-mitteilungen)*
*('Potschen beds, Zlambach marl (Hallstatter, Upper Triassic) and Lias flecken-marl in Central Timor, along with their faunal elements' Upper Triassic (Norian- Rhaetian)- E Jurassic thin-bedded marls-limestones and faunas from deep marine 'Aitutu Fm', mainly along Meto River, SW part of W Timor, SW of Soe. Close faunal and lithological similarities with age-equivalent 'Hallstatt facies' rocks in E Alps (W Tethys), with no Pacific faunal elements. With descriptions of U Triassic and Liassic ostracod assemblages and Liassic calcareous nannofossils by Kristan-Tollman, and revision of U Triassic mollusc genera Halobia (H. rugosa, H. fascigera, H. radiata, etc.) and Monotis salinaria by Gruber)*

Krumbeck, L. (1921)- Die Brachiopoden, Lamellibranchiaten und Gastropoden der Trias von Timor. I. Stratigraphischer Teil. In: J. Wanner (ed.) Palaeontologie von Timor 10, 17, Schweizerbart, Stuttgart, 142p.
*('Triassic brachiopods, bivalves and gastropods from Timor- part 1, Stratigraphic part'. Extensive overview of Triassic occurrences on Timor, Savu, Roti, etc., with distribution of ages and facies and comparisons to Triassic in other regions. Based on collections from 1911 Wanner and Molengraaff Timor expeditions. Five main facies: 1. Klippen/ Fatu coral reefal limestone, often oolitic; 2. Bituminous platy limestone and marls; 3. Brachiopod Limestone (rel. rare); 4. Cephalopod Limestone, condensed 'Halstatter facies'; 5. Halobia limestone and shales)*

Krumbeck, L. (1922)- Zur Kenntnis des Juras der Insel Rotti. Jaarboek Mijnwezen Nederlandsch Oost-Indie 49 (1920), Verhandelingen 3, p. 107-220.
*('On the knowledge of the Jurassic of Roti Island'. Descriptions of 44 species of Liassic amonites from grey cephalopod nodule marls, but also some Middle Jurassic ammonites (Macrocephalites). Most species similar to Alpine- Mediterranean species, with, unlike Timor Permian-Triassic, few new species. Assemblages dominated*

*by Dactylioceras spp. and Arietites spp., also Arnioceras, Lytoceras rotticum, Arietites wichmanni, Aegoceras subtaylori, etc. All Jurassic facies on Roti deep marine)*

Krumbeck, L. (1923)- Zur Kenntnis des Juras der Insel Timor, sowie des Aucellen-Horizontes von Seran und Buru. In: J. Wanner (ed.) Palaeontologie von Timor 12, 20, Schweizerbart, Stuttgart, p. 1-120.
*('On the knowledge of the Jurassic of Timor, as well as the Aucella horizon of Seram and Buru'. Jurassic of Timor mainly in brachiopod-bivalve facies, while in Roti dominated by ammonites. Jurassic of Timor four different facies types: (1) Liassic red cephalopod limestones; (2) M Liassic 'Lithiotis fauna' of thick-shelled molluscs with Mediterranean affinities in 'Fatu Limestones' at Lelefoei Pass (Bonleo, Mutis Mts.) and Fatu Nimassi (where underlain by U Triassic limestone) and Fatu Kenapa: Lithiotis timorensis n.sp., with Pachymegalodus, Myophoria, etc. from brown-grey Mytilus limestone (= typical Tethyan; Geyer 1977, Hayami 1984, Krobicki & Golonka 2009); (3) E Malm Aucella malayomarica at several localities on W and E Timor, often 'rock-forming' and generally asociated with Inoceramus cf. haasti (also known from Roti, Seram, Buru); (4) M Liassic dark grey bituminous platy limestone of Ramelau Mts, E Timor, with Rhynchonella, Spiriferina)*

Krumbeck, L. (1924)- Die Brachiopoden, Lamellibranchiaten und Gastropoden der Trias von Timor II. Palaeontologischer Teil. In: J. Wanner (ed.) Palaeontologie von Timor 13, 22, Schweizerbart, Stuttgart, p. 1-275.
*(Triassic brachiopods, bivalves and gastropods from Timor- part 2, Paleontological part)*

Krystyn, L. & M. Siblik (1983)- *Austriellula robusta* n. sp. (Brachiopoda) from the Upper Carnian Hallstatt limestones of Timor (Indonesia). Osterreich. Akademie Wissenschaften, Schriftenreihe Erdwissensch. Komm. 5, p. 259-266.
*(New rhynchonellid brachiopod species from Carnian (U Triassic) of Baun, Timor. From 'Halstatt facies' ammonite-rich limestone blocks in Tertiary olistostrome in SW Timor)*

Krystyn, L. & J. Wiedmann (1986)- Ein *Choristoceras* Vorlaeufer (Ceratitina, Ammonoidea), aus dem Nor von Timor. Neues Jahrbuch Geol. Palaont., Monatshefte 1986, 1, p. 27-37.
*('A Choristoceras ancestor (Ceratitina, Ammonoidea) from the Norian of Timor'. Norian ammonites from 'Halstatt-facies' Norian cephalopod limestone of Timor)*

Kuenen, Ph.H. (1942)- Obilatoe, Kisar and Siboetoe. Contributions to the geology of the East-Indies from the Snellius Expedition II. Geologie en Mijnbouw 1942, 4, p. 81-90.
*(Geological observations from short visits to islands of Obilatu, Kisar and Sibutu with the 1929 Snellius Expedition. Kisar (NE of Timor) consists of crystalline schists (incl. amphibolite) with thin cover of elevated Quaternary coral reef terraces that are tilted to East)*

Kummel, B. (1968)- Scythian ammonoids from Timor. Breviora, Mus. Comparative Zoology, 283, p. 1-21.
*(online at: www.biodiversitylibrary.org/page/4294222page/308/mode/1up)*
*(Description of Lower Triassic ammonites from Wanner, Jonker, etc. collections, all from isolated blocks from extremely condensed sections. Many specimens manganese-coated. Mainly addendum to Welter (1922) monograph. Incl. Owenites, Prosphingites)*

Kutassy, A. (1931)- Triadische Fossilien vom Portugiesischen Timor. Verhandelingen Geologisch-Mijnbouwkundig Genootschap Nederland Kol., Geol. Serie 9, p. 49-56.
*(Triassic fossils from Von Loczy 1922 expedition in S part of Portuguese Timor near Suai. Mostly from folded deep-water marly limestones. With ammonites, belemnites (Aulacoceras striatus) and pelagic molluscs Daonella indica, Halobia styriaca)*

Kwon, C.W., S.W. Kim, S.I. Park, J. Park, J.H. Oh, B.C. Kim, H.J. Koh & D.L. Cho (2014)- Sedimentological characteristics and new detrital zircon SHRIMP U-Pb ages of the Babulu Formation in the Fohorem area, Timor-Leste. Australian J. Earth Sci. 61, 6, p. 865-880. *(with supplementary data)*
*(Zircon ages from Triassic Babulu Fm deep marine clastics in Fohorem area, Timor-Leste, Neoarchean-Triassic, with main age pulses Paleozoic- Triassic (329-256 Ma). Proterozoic major peak at 1878-1857 Ma,*

*also at ~1560, 1750, 1830 Ma (results similar to Zobell 2007 data from Savu). Maximum deposition age indicated by youngest zircon age peak (~256-238 Ma) is post- early U Triassic. Babulu Fm in Fohorem area initiated as submarine fan lobe and represents distal Gondwana Sequence of Australian margin. Zircon age for M Permian trachyandesite in Maubisse Fm (270 ± 3 Ma= E Guadalupian))*

Lakeman, R. (1950)- On the crinoid nature of *Timorocidaris sphaeracantha* Wanner. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 53, 1, p. 100-108.
*(Timorocidaris sphaeracantha one of most common fossils in Permian of Timor. Hemispherical fossil, here believed to be axillary primibranch of unknown poteriocrinoid, not an echinoid)*

Lay, A., I. Graham, D. Cohen, J.M. Gonzalez-Jimenez, K. Privat, E. Belousova & S.J. Barnes, (2014)- Platinum Group Minerals in ophiolitic chromitites of Timor Leste. In: E.V. Anikina et al. (eds.) 12th Int. Platinum Symposium, Inst. Geology and Geochemistry UB RAS, Yekaterinburg, p. 179-180. *(Abstract)*
*(online at: http://conf.uran.ru/12IPS/12%20IPS%20ABSTRACTS.pdf)*
*(Hili Manu peridotites in Manatuto District on N coast of Timor Leste, ~50km E of Dili with ultramafic rocks(serpentinised dunites, harzburgites and lherzolites associated with rare rodingites and gabbros) in two massifs, separated by amphibolite block. With chromitite bodies and Platinum-Group Mineralisation. Preliminary PGM Re-Os ages from 0.05 Ga (Subao Highway) to 0.21 Ga (Kerogeol Hill))*

Lay, A., I. Graham, D. Cohen, K. Privat, J.M. Gonzalez-Jimenez, E. Belousova & S.J. Barnes (2017)- Ophiolitic chromitites of Timor Leste: their composition, platinum group element geochemistry, mineralogy, and evolution. Canadian Mineralogist 55, 5, p. 875-908.
*(Ultramafic rocks at Hili Manu, ~50 km E of Dili , two ultramafic massifs separated by amphibolite. Chromitite bodies at Hili Manu small lenses few m in size. Chromites both high-Cr and high-Al types. Platinum-group minerals (laurite, etc.) as inclusions and in fractures in chromite or serpentinite matrix. Peridotite geochemistry and chemistry of chrome-spinels suggest formation of Hili Manu peridotite in upper mantle in supra-subduction zone setting, part of young oceanic lithosphere from Banda Arc)*

Lelono, E.B. (2016)- Palynology of the Permian freshwater deposit in West Timor. J. Geologi Sumberdaya Mineral 17, 4, p. 231-239.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/18/16)*
*(Permian Bisane Fm of W Timor dominated by calcareous sandstone with abundant marine crinoid fossils. Intercalation of non-calcareous dark shale-siltstone with papery structure, 5m thick, with Permian striate-bisaccate pollen, incl. Protohaploxypinus samoilovichii and other species (associated with Glossopteris flora), Striatopodocarpidites phaleratus, Pinuspollenites globosaccus, Lunatisporites pellucidus, etc. and lack marine dinoflagellate. Possibly syn-rift lacustrine deposit)*

Lelono, E.B., P. Bohemi, A. Bachtiar, P. Suandhi, B.H. Utomo, H. Ibadurrahman, M. Arifai, A. Yusliandi & Z. Lesmana (2016)- Paleozoic lacustrine sediment at West Timor and tectonic implication for Timor Island, new exploration concept of hydrocarbon. Proc. 40th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA16-642-G, 12p.
*(Discovery of 5m thick non-calcareous black shale with papery structure at Ajobaki Village, Fatunausus High, Kapan, Soe (in mud volcano?). Consisting of algae layered with sulphur content. With Late Permian(?) fresh water pollen species (incl. Permian Plicatipollenites malabarensis and P. janakii (=Cannanoropollis janakii?) and Triassic Protohaploxypinus samoilovichi and Falcisporites australis) and interpreted as lacustrine deposits. High maturity (Ro>0.9), TOC up to 24% (NB: Possibly Triassic bituminous shale?: Falcisporites australis, Cannanoropollis janakii, P. samoilovichi may occur in Late Permian but primarily Triassic markers. Little info on geological context of sample; JTvG))*

Lelono, E.B., D. Kurniadi, K.D. Anggritya & Saidah (2017)- Palynological review of the Permian lacustrine sediment in the West Timor. Proc. Joint Conv. HAGI-IAGI-IAFMI-IATMI (JCM 2017), Malang, 6p.
*(Palynology of new locality of 4m thick non-calcareous black 'paper shale' in central W Timor interpreted as Late Permian lacustrine deposit. High abundance but low diversity of palynomorphs. Tasmanites-green algae >80% of pollen assemblage; rest assemblage striate and non-striate bisaccate and trilete spore, characterising*

*Permian age. Tasmanites blooms interpreted as lake supplied with meltwater from surrounding glaciers. Tasmanites algae potential hydrocarbon source (NB: Tasmanites commonly viewed as pelagic marine algae, common in higher latitudes? (e.g. Barentsz Sea M Triassic marine oil shales with Tasmanites blooms and common Daonella bivalves; Vigran et al. 2008; JTvG). No details on locality)*

Lelono, E.B., L. Nugrahaningsih & D. Kurniadi (2016)- Permo-Triassic palynology of the West Timor. Scientific Contr. Oil and Gas, Lemigas, Jakarta, 39, 1, p. 1-13.
*(online at: www.lemigas.esdm.go.id/public/publikasi/scientific/14778917121993082162.pdf)*
*(Bisane Fm sandstones-shales in W Timor outcrops with mica and abundant crinoids and up to 5m thick non-calcareous dark shale-siltstone with papery structure and rich in sulfur. Permo-Triassic ages indicated by striate-bisaccate pollen, incl. Protohaploxypinus samoilovichii, P. fuscus, P. goraiensis (= from Glossopteris plants), Striatopodocarpidites phaleratus, Pinuspollenites globosaccus, Lunatisporites pellucidus, also non-striate Falcisporites australis, Samaropollenites speciosus, etc. Trilete-monosaccate spores of Plicatipollenites malabarensis and Cannanoropollis janakii in non-calcareous shale samples Permian or older age. Marine dinoflagellates in calcareous samples (incl. Dapsilidinium langii, Dingodinium jurassicum) suggest marine influence, and not present in non-calcareous samples. Possibly new petroleum system in Paleozoic of W Timor? (NB: dinoflagellates are latest Triassic-Jurassic species?; JTvG))*

Lelono, E.B., L. Nugrahaningsih, D. Kurniadi, P.A. Suandhi & B.H. Utomo (2016)- Palynological investigation of the Permian sediment in the on-shore West Timor. Proc. GEOSEA XIV and 45th Ann. Conv. Indon. Assoc. Geologists (IAGI) (GIC 2016), Bandung, p. 401-404.
*(Abbreviated version of Lelono et al. 2016, above, on freshwater synrift facies in Permian Bisane Fm with 44 palynomorph species of Falcisporites superzone)*

Lelono, E.B., D. Sunarjanto & A. Kholiq (2016)- Potensi hidrokarbon sedimen Pra-Tersier daerah Atambua, Timor Barat. Lembaran Publikasi Minyak dan Gas Bumi (Lemigas) 50, 2, p.
*(online at: www.journal.lemigas.esdm.go.id/index.php/LPMGB/article/view/455)*
*('Hydrocarbon potential of Pre-Tertiary sediments of the Atambua area, West Timor'. Atambua area with many hydrocarbon seeps. Permian shale of Bisane Fm and Triassic clay of Aitutu Fm are considered to be source rocks, Permian and Jurassic sandstone potential reservoirs, Jurassic of Wailuli Fm clay potential seal*)

Lemoine, M. (1959)- Un example de tectonique chaotique: Timor. Essai de co-ordination et d'interpretation. Revue Geogr. Physique Geol. Dynamique 2, 4, p. 205-230.
*('Timor, an example of chaotic tectonics'. Complex thrust tectonics on Timor not well understood. Thrusting mainly in Miocene, essentially completed by M or Late Miocene)*

Lockwood, W.L. (1975)- A geophysical assessment of the Outer Banda Arc with emphasis on gravity measurements in Eastern Timor. M.Sc. Thesis, Flinders University, Adelaide, p. 1-83. *(Unpublished)*

Macurda, D.B. (1972)- The type species of the Permian blastoid *Calycoblastus*. J. Paleontology 46, 1, p. 94-98.
*(On discovery of second specimen of large blastoid Calycoblastus tricavatus Wanner from Lower Permian of Baun-Amarasi near Kupang, W Timor)*

Major, J.R. (2011)- Pleistocene hinterland evolution of the active Banda Arc: surface uplift and neotectonic deformation recorded by coral terraces at Kisar, Indonesia *and* Hinterland emergence of the active Banda arc-continent collision: metamorphism, geochronology, and structure of the uplifted Kisar Atoll, Indonesia and related rocks of Timor. M.Sc. Thesis, Brigham Young University, Utah, p. 1-165. *(Unpublished)*
*(online at: http://scholarsarchive.byu.edu/cgi/viewcontent.cgi?article=3945&context=etd)*
*(Metamorphic rocks of Kisar island correlate with Aileu Metamorphic Complex of E Timor. Protoliths mostly psammitic with minor basaltic and felsic igneous material. Mafic meta-igneous rocks show rift affinities, likely related to rifting of Gondwana. Collision of N margin of Australia with Banda Arc in latest Miocene caused metamorphism of distal edge of continental margin rocks at depths of 25-30 km, followed by rapid uplift and exhumation. U-Pb analysis of detrital zircons show main populations of ~300 Ma and ~1800 Ma. Youngest grains are ~286/ 295 Ma in age (earliest Permian). Timing of metamorphism poorly constrained by previous*

*studies; mica cooling age of 5.36 Ma reliable. Domal geometry expressed by pinnacle shape of island and by metamorphic foliations parallel to coastline, possibly caused by diapirism into hinge of active thrust anticline)*

Major, J.R. & R. Harris (2009)- The tectonic evolution and regional significance of Kisar Island, Indonesia. Geol. Soc. America, Rocky Mnt. Sect. 61st Ann. Mtg., May 2009, Paper 13-11. *(Abstract only)*
*(Kisar Island, NE of Timor, emerges from small ridge in forearc suture zone 3 km deep. Consists of metamorphic rocks encircled by Quaternary uplifted coral terraces. Terraces gently warped and correlated to known sea-level highstands. Metamorphic rocks among youngest in world, range from phyllite to amphibolites)*

Major, J.R., R.A. Harris, H. Chiang, C. Prasetyadi & C. Shen (2009)- Variation in deformational mechanisms in the Banda Arc: uplift and tectonic implications of Kisar, Indonesia. EOS Transactions AGU 90, 52, Fall Meet. Suppl., Abstract T33B-T1915. *(Abstract only)*

Major, J.R., R.A. Harris, H.W. Chiang, N. Cox, C.C. Shen, S.T. Nelson, C. Prasetyadi & A. Rianto (2013)- Quaternary hinterland evolution of the active Banda Arc: surface uplift and neotectonic deformation recorded by coral terraces at Kisar, Indonesia. J. Asian Earth Sci. 73, p. 149-161.
*(Coral terrace ages yield surface uplift rate of ~0.5 m/ka for Kisar Island in hinterland of active Banda arc-continent collision. Based on this rate, Kisar first emerged from ocean as recently as ~450 ka. Uplifted terraces gently warped in E-W striking folds. Pinnacle shape of Kisar and protrusion of its metamorphic rocks through forearc basin sediments also suggest component of extrusion along shear zones or active doming)*

Margolis, S.V., T.L. Ku, G.P. Glasby, C.D. Fein & M.G. Audley-Charles (1978)- Fossil manganese nodules from Timor: geochemical and radiochemical evidence for deep-sea origin. Chemical Geology 21, p. 185-198.
*(Cretaceous-age Mn nodules from exotic blocks in Miocene Bobonaro scaly clay 4.5 km ENE of Niki Niki are similar to nodules now found at ~3500-5000m in Pacific and Indian Oceans)*

Mariotti, N. & J.S. Pignatti (1995)- *Claviatractites*, a new xiphoteuthidid cephalopod from the Upper Triassic of Timor. Palaeopelagos 5, p. 45-52.
*(New genus name Claviatractites proposed for belemnite originally described as Atractites claviger by Von Bulow (1915) from Late Triassic of Timor, because Atractites has ventral furrows, waist is narrower, etc.)*

Marks, P. (1954)- Contributions to the geology of Timor. III. An occurrence of *Miogypsina (Miogypsinella) complanata* Schlumberger in the Lalan Asu area, Timor. Indonesian J. Natural Science (Majalah Ilmu Alam untuk Indonesia) 110, p. 78-80.
*(Lalan Asu area polymict basal conglomerate above amphibolite, originally described by Tappenbeck 1939, contains latest Oligocene larger forams Miogypsinoides complanata (with >21 spiral chambers) and Spiroclypeus. Probably equivalent of Base Cablac Limestone in E Timor (Called Aquitanian by Marks, but age should be Late Chattian, latest Oligocene; JTvG))*

Marks, P. (1961)- The succession of nappes in the western Miomaffo area of the island of Timor; a possible key to the structure of Timor. Proc. 9th Pacific Science Congress, Bangkok 1957, Geol. Geophys. 12, p. 306-310.
*(Diagram of stratigraphies in W Miomaffo area, W Timor, depicting succession of overthrusts)*

Martin, K. (1881)- Die versteinerungfuhrenden Sedimente Timors. Nach Sammlungen von Reinwardt, Macklot und Schneider. Sammlungen Geol. Reichs-Museums Leiden 1, 1, p. 1-64.
*(online at: www.repository.naturalis.nl/document/552422)*
*('The fossil-bearing sediments of Timor, from collections of Reinwardt, Macklot and Schneider'. Early description of Timor fossils, now in Leiden Naturalis collections, collected in 1821 (Reinwardt), 1823-1829 (Macklot and Muller, Kupang area) and 1863 (Schneider). Mainly solitary corals (Amplexus, Lophophyllum, Lithostrotion) and brachiopods (Spirifer, Spirigera) from Permian. With 3 plates)*

Martin, K. (1882)- Die versteinerungfuhrenden Sedimente Timors. Nach Sammlungen von Reinwardt, Macklot und Schneider. Jaarboek Mijnwezen Nederlandsh Oost-Indie 11 (1882), Wetenschappelijk Gedeelte, p. 71-136.
*('The fossil-bearing sediments of Timor, from collections of Reinwardt, etc.'... Same as Martin 1881)*

Martini, R.L., M. Zaninetti, J. Villeneuve, J.J. Cornee, L. Krystin, S. Cirilli, P. De Wever, P. Dumitrica & A. Harsolumakso (1999)- New sedimentological and biostratigraphic data on the Triassic of West Timor (Indonesia). 7th Congr. Francais sedimentlogie, Nancy, 2p. *(Abstract)*
*(U Triassic Carnian- U Carnian/Rhaetian basinal carbonate series with radiolaria, ammonites and conodonts. 6 lithostratigraphic units: A-B Carnian; C Norian with Gliscopollis meyeriana and Granulatoperculatipollis rudis; E with U Norian Monotis salinaria, etc. Adherance of Allochthonous of Timor to Australian margin highly questionable)*

Martini, R.L., M. Zaninetti, J. Villeneuve, J.J. Cornee, L. Krystin, S. Cirilli, P. De Wever, P. Dumitrica & A. Harsolumakso (2000)- Triassic pelagic deposits of Timor: palaeogeographic and sea-level implications. Palaeogeogr. Palaeoclim. Palaeoecology 160, p. 123-151.
*(W Timor Triassic deposits in Parautochthonous Complex and Allochthonous Sonnebait series. Late Triassic at rear end Kolbano thrust belt in W Timor shows deep water organic-rich Carnian shales overlain by Norian-Rhaetian radiolarian-bearing pelagic carbonates. Ammonites typical Tethyan, low paleolatitude. Carnian palynomorphs incl. rare Ovalipollis pseudoalatus. Triassic sedimentary evolution in Timor different from NW Australian margin, but similar to Banda Sea microcontinents like E Sulawesi, Buru, Seram. Data suggest Allochthonous complex, classically interpreted as tectonic melange of Banda Arc accretionary prism, is tectonically dismembered Triassic lithostratigraphic succession)*

Maryanto, S. & A.K. Permana (2013)- Mikrofasies dan diagenesis batugamping berdasarkan data petrografi pada Formasi Nakfunu di daerah Timor Tengah Selatan. J. Sumber Daya Geologi 23, 3, p. 143-157.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/87/81)*
*('Limestone microfacies and diagenesis based on petrographic data of the Nakfunu Formation in the area of South Central Timor'. Lower Cretaceous pelagic limestones from Kolbano foldbelt underwent cementation, replacement, silicification, recrystallization, dolomitization, compaction, fracturing and dissolution. Locally rich in radiolaria (also in HAGI-IAGI 2017 (Malang) convention))*

Maryanto, S., A.K. Permana & J. Wahyudiono (2018)- Aspek petrografi batugamping di daerah Timor Tengah Selatan. J. Geologi Sumberdaya Mineral 19, 2, p. 83-97.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/396/340)*
*('Aspects of the petrography of limestones in the South Central Timor Area'. Petrography of limestones from N and E of Soe: Triassic Aitutu Fm (rich in phylloid algae (= Halobia-type bivalves?; HvG)), E Cretaceous Nakfunu Fm (rich in radiolaria), Late Cretaceous Menu Fm (with planktonic foraminifera) and Paleogene Ofu Fm (with benthic foraminifera and terrigenous material))*

Masson, D., G.J. Milsom, A.J. Barber, N. Sikumbang & B. Dwiyanto (1991)- Recent tectonics around the island of Timor, eastern Indonesia. Marine Petroleum Geol. 8, 1, p. 35-49.
*(Holocene deformation around Timor from GLORIA sidescan sonar system and single-channel seismic data)*

McCartain, E. (2004)- A reconstructed stratigraphic succession for the Gondwana sequence of Timor-Leste, forming the type area of the Wailuli Formation. B.Sc. Thesis University of Western Australia, p. *(Unpublished)*
*(Abstract in PESA Newsletter 73, 2004, p. 29. Wai Luli Fm type area clastics range in age from Late Permian-M Jurassic; paleoenvironments inner-outer neritic (commonly with turbidites= deeper marine? JTvG))*

McCartain, E., J. Backhouse, D. Haig, B. Balme & M. Keep (2006)- Gondwana-related Late Permian palynoflora, foraminifers and lithofacies from the Wailuli Valley, Timor Leste. Neues Jahrbuch Geol. Palaont., Abhandl. 240, 1, p. 53-80.
*(Palynomorphs from Cribas Fm turbidites from Wailuli Valley, E Timor, are of latest Permian age and of Gondwanan affinity. Diverse Dulhuntyispora assemblage with 6 species, incl. D. dulhuntyi, D. parvithola, etc., also Didecitrelites eriacanus, etc.. Assemblage similar to Cape Hay Fm in Bonaparte Basin of NW Australia)*

Mei, S. & C.M. Henderson (2001)- Evolution of Permian conodont provincialism and its significance in global correlation and paleoclimate implication. Palaeogeogr. Palaeoclim. Palaeoecology 170, p. 237-260.

*(Early Permian Gondwana Cool Water Province with Vjalovognathus in Canning, Carnarvon and W Timor. Permian conodont provincialism not distinct until Kungurian)*

Meijer, H.J.M., S.K. Donovan & W. Renema (2009)- Major Dutch collections of Permian fossils from Timor amalgamated. J. Paleontology 83, 2, p. 313.
*(Short note reporting that large collections of macrofossils from Permian, etc., of Timor, originally kept in Amsterdam, Delft and Leiden, are now combined in Leiden Naturalis Museum)*

Milsom, J. & M.G. Audley-Charles (1986)- Post-collisional isostatic readjustment in the southern Banda Arc. In: M.P. Coward & C. Ries (eds.) Collision tectonics, Geol. Soc. London, Spec. Publ. 19, p. 353-364.
*(Timor area considerable departures from isostatic equilibrium suggested by gravity. In some cases isostatic anomalies accords well with observed vertical movement. In other areas, such as N Timor and inner (volcanic) arc, uplift where gravity data suggest there should be subsidence. Possible explanation is contribution to high gravity made by cold, dense subducted slab now sinking after rupture near continental margin. Ruptured sinking slab no longer exerts downward pull on overlying lithosphere, freed to rebound isostatically.)*

Milsom, J. & A. Richardson (1976)- Implications of the occurrence of large gravity gradients in N Timor. Geologie en Mijnbouw 55, p. 175-178.
*(online at: https://drive.google.com/open?id=0B7j8bPm9Cse0b3hDbTV1SUpySGs)*
*(Steep gravity gradient along N coast of Timor suggests dense rocks rise close to surface, and analogies can be drawn with large anomalies associated with ophiolitic thrusts in New Guinea and New Caledonia, where high gravity anomalies caused by concealed roots of exposed ultramafic masses. Timor may well be built up of series of thrust slices resting ultimately on continental basement)*

Minato, M. & M. Kato (1965)- Waagenophyllidae. J. Faculty Science Hokkaido University, Sapporo, ser. 4, 12, 3-4, p. 1-241.
*(online at: http://eprints.lib.hokudai.ac.jp/dspace/handle/2115/35941)*
*(Monograph on taxonomy and geographic distributions of Permian waagenophyllid colonial and solitary corals, widely distributed in tropical Tethyan (Cathaysian) region. Lonsdaleia frechi Volz 1904 from Bukit Bessi, Padang Highlands, W Sumatra, recombined as Polythecalis frechi. Waagenophyllids from M Permian of Timor: Lonsdaleiastraea vinassai, L. molengraaffi, Ipciphyllum timoricum (first described by Gerth 1921))*

Molengraaff, G.A.F. (1912)- De jongste bodembewegingen op het eiland Timor en hunne beteekenis voor de geologische geschiedenis van den O.I. Archipel. Verslagen Vergadering Wis-Natuurk. Afd. Kon. Akademie Wetenschappen, Amsterdam, Juni 1912, p.
*(Dutch version of paper below)*

Molengraaff, G.A.F. (1912)- On recent crustal movements on the Island of Timor and their bearing on geological history of the East Indian Archipelago. Proc. Kon. Akademie Wetenschappen, Amsterdam 15, p. 224-235.
*(online at: www.dwc.knaw.nl/DL/publications/PU00012969.pdf)*
*(After post-Eocene main folding event on Timor horsts and grabens formed, on which Mio-Pliocene Globigerina limestones were deposited. Plio-Pleistocene coral reefs on Timor now elevated up to 1283m above sea level, proving significant young uplift of Timor)*

Molengraaff, G.A.F. (1913)- Overschuivingen en overschuivingsbladen op de eilanden Timor en Letti. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 30, p. 273-274.
*('Thrusts and nappes on the islands of Timor and Leti'. Major post-Eocene and pre-Pliocene folding event on Timor)*

Molengraaff, G.A.F. (1914)- De Fatoes van Timor. Verslagen Geol. Sect., Geologisch Mijnbouwkundig Genootschap I, 1912, p. 117-119.
*(The 'fatus' (limestone cliffs) of Timor. Summary of 1912 presentation for Dutch geological society on isolated limestone hills of W Timor, locally named fatus. Composed of different rock types, most commonly Triassic*

*oolitic limestone, but also Permian crinoid limestone, serpentinite, Tertiary orbitoidal limestone or igneous rocks. Often rise from areas with different geology. One explanation may be intense folding of island, probably in 'young Miocene', with disharmonic response by more rigid and more thin-bedded, viscous rocks, followed by differential erosion. Major nappes may also be a factor)*

Molengraaff, G.A.F. (1915)- Dekbladenbouw in den Timor archipel. Verslagen Geol. Sect., Geologisch Mijnbouwkundig Genootschap 1, p. 140-141.
*('Nappe structure in the Timor archipelago'. Early paper on nappe tectonics on Timor.)*

Molengraaff, G. (1915-1922)- Nederlandsche Timor-Expeditie 1910-1912. Jaarboek Mijnwezen Nederlandsch Oost-Indie, volumes 1-3, p. 1-732.
*(Vol. II online at: https://archive.org/details/nederlandschetim00mole)*
*(Vol. II online at: https://archive.org/details/nederlandschetim02mole)*
*(Vol. III online at: https://archive.org/details/nederlandschetim03mole)*
*('Netherlands Timor Expedition 1910-1912'. Collection of papers previously published in 'Jaarboek van het Mijnwezen' published between 1915-1922 on Timor, Leti, Roti, Moa, etc.. Contributions by Brouwer on geology of Leti, Roti, etc., and paleontological papers by Gerth, Haniel, Broili, Krumbeck, etc.)*

Molengraaff, G.A.F. (with H.A. Brouwer) (1915)- De geologie van het eiland Letti, Geographische en geologische beschrijving. Jaarboek Mijnwezen Nederlandsch Oost-Indie 43 (1914), Verhandelingen 1, p. 1-87.
*(Text online at: http://openlibrary.org/books/OL24343736M/Nederlandsche_Timor-expeditie_1910-1912)*
*('Geographic and geological description of the island Letti'. Detailed description of geology of Leti, E of Timor, showing many similarities with Timor geology. Isoclinally folded, mainly N-dipping Permian clastic sediments with thin crinoid-fusulinid limestones become gradually more metamorphic to North (first documentation of post-Permian metamorphism in Indonesia). Overlain in North by ultrabasics and melange mixture of rock types, including reworked Upper Cretaceous pelagic limestone with Globotruncana aff. linneana in latest Oligocene- E Miocene limestone breccia. With studies of Permian brachiopods by Broili, Permian ammonites by Haniel and Permian fusulinid foraminifera by Schubert)*

Molengraaff, G.A.F. (1915)- Over mangaanknollen in Mesozoische diepzee-afzettingen van Borneo, Timor en Rotti, hun beteekenis en hun wijze van ontstaan. Verslagen Kon. Akademie Wetenschappen, Amsterdam, Wis- Natuurk. Afd., 23, p. 1058-1073.
*('On manganese nodules in Mesozoic deep-sea deposits of Borneo, Timor and Roti, their significance and mode of formation'. Dutch version of Molengraaff 1916, below)*

Molengraaff, G.A.F. (1916)- On the occurrence of nodules of manganese in Mesozoic deep-sea deposits from Borneo, Timor and Rotti, their significance and mode of formation. Proc. Kon. Akademie Wetenschappen, Amsterdam 18, p. 415-430.
*(online at: www.dwc.knaw.nl/DL/publications/PU00012518.pdf)*
*(Manganese nodules in Triassic and Jurassic deposits of C-E Kalimantan, Timor and Roti, often associated with radiolaria, interpreted as abyssal oceanic deposits, 'deposited in deepest parts of Mesozoic Tethys geosyncline')*

Molengraaff, G.A.F. (1917)- De Timorexpeditie en hare palaeontologische resultaten. Handelingen 16th Nederlandsch Natuur- Geneeskundig Congres, 's-Gravenhage 1917, p. 245-256.
*(online read only at: http://babel.hathitrust.org/cgi/pt?id=uc1.b3093405;view=1up;seq=885)*
*('The Timor Expedition and its paleontological results'. Summarizing results of expeditions by Molengraaff and Wanner 1911-1912 and Jonker in 1915. Collected well-preserved, rich, mainly shallow marine Permian faunas, particularly rich in crinoids and blastoids, and also ammonites. Also thin Triassic and Jurassic deep sea deposits on Timor and Roti with manganese nodules and radiolarians, formed in very deep water, very far from landmasses. Upper Triassic faunas remarkably similar to rocks from Alps and Himalyas)*

Molengraaff, G.A.F. (1920)- Mangaanknollen in Mesozoische diepzee-afzettingen van Nederlandsch Timor. Verslagen Kon. Akademie Wetenschappen, Amsterdam, Wis- Natuurk. Afd., 29, p. 677-692.

*('Manganese nodules in Mesozoic deep-sea deposits of Dutch Timor, etc.. Dutch version of Molengraaff (1921))*

Molengraaff, G.A.F. (1921)- On manganese nodules in Mesozoic deep-sea deposits of Dutch Timor with a preliminary communication on fossils of Cretaceous age in those deposits by L.F. de Beaufort. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 23, 7, p. 997-1012.
*(Online at: www.dwc.knaw.nl/DL/publications/PU00014760.pdf)*
*(Several meters of deep-marine red clays with manganese nodules sampled by Jonker in 1916 from Noil Tobee river, 4.5 km ENE of Niki-Niki. Red clays conformably overlie thin-bedded Late Triassic limestone with Halobia. Partly dissolved Elasmobranchii shark teeth similar to English Chalk species, suggesting Cretaceous age (not clear if contact is tectonic or represents Jurassic hiatus in condensed deep water series; JTvG))*

Morgan, R.F. (2015)- Three new species of *Deltoblastus* Fay from the Permian of Timor. PLoS One 10, 6, e0127727, p. 1-9.
*(online at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4465186/)*
*(Review of15 species of blastoid genus Deltoblastus, with introduction of 3 new species, based on material from Basleo, etc. (now in Waco and London museum collections))*

Muhammad, F., I G.B.E. Sucipta & M.G Sagara (2017)- Origin and tectonic emplacement of mylonitized peridotite in Hili Manu Area, Timor Leste. Proc. Joint Conv. HAGI-IAGI-IAFMI-IATMI (JCM 2017), Malang, 6p.
*(Hili Manu peridotite body in Timor Leste is spinel lherzolite peridotite with mylonitic structures. Geothermobarometry from exsolution lamellae of pyroxenes indicate peridotite formed at 1190°C and 8.5 kb (850 MPa). Rocks mylonitized at 964- 1092°C and 4.9-5.7 kb (490-570 MPa). Metamorphism of underlying Permian Aileu Fm increases toward base of peridotite; sole metamorphism during peridotite emplacement)*

Mulhadiono & B. Simbolon (1988)- Preliminary account of the petroleum potential of Timor Island. Proc. 17th Ann. Conv. Indon. Petroleum Assoc. (IAP), Jakarta, 1, p. 89-110.
*(Overview of Timor geology, accepting Asian origin of Mutis-Palelo, Maubisse and N Coast thrust complexes. Main deformation phase between Late Eocene- earliest Miocene. 21 wells drilled in E Timor, Metai 1 and Taci with minor oil tests. Various source formations present, but reservoir quality may be poor)*

Munasri (1998)- Early Cretaceous radiolarian biostratigraphy of the Nakfunu Formation, the Kolbano area, West Timor, Indonesia. Ph.D. Thesis, University of Tsukuba, Japan, No. 1869, p. *(Unpublished)*
*(Berriasian-Aptian cherts and mudstone from Kolbano area of SW Timor contain radiolarians from two different climates: southern high latitudes and tropics)*

Munasri & K. Sashida (1998)- Tethyan and non-Tethyan Early Cretaceous radiolarian fauna from West Timor, Indonesia. In: H. Darman & F.H. Sidi (eds.) Tectonics and sedimentation of Indonesia, FOSI-IAGI-ITB Regional Seminar to commemorate 50th anniversary of Van Bemmelen's Geology of Indonesia, Bandung 1999, p. 88-91.
*(Radiolaria in E Cretaceous Nakfunu Fm of Kolbano accretionary complex of southern W Timor indicate trend of increasing number of Tethyan species, reflecting N-ward motion of N Australian continental slope: (1) Berriasian- E Valanginian mainly non-Tethyan taxa of Parvicingula, Crytocapsa, etc. (Circum-Arctic cold-water faunas); (2-3) Late Valanginian- E Barremian both Tethyan and non-Tethyan taxa; (4) E Aptian Tethyan taxa only (Dictyomitra pseudoscalaris, Stichomitra spp., etc.))*

Munasri & K. Sashida (2018)- Tethyan and non-Tethyan Early Cretaceous radiolarian faunas from West Timor, Indonesia: paleogeographic and tectonic significance. Earth Evolution Sciences (University of Tsukuba) 12, p. 3-12.
*(Abundant and well-preserved E Cretaceous radiolaria in calcilutites and shales of Nakfunu Fm, Kolbano area, southern W Timor, in part of accretionary complex. Radiolarian faunas similar to ODP Leg 123- Site 785 from Argo Abyssal Plain. Four assemblages of Berriasian- E Aptian age, with trend from non-Tethyan to Tethyan affinities in progressively younger strata. Frequent and random repetition of radiolarian assemblages reflect imbrication of beds. Faunas derived from S paleolatitude origin, influenced by Circum-Antarctic current)*

Nakazawa, K. & Y. Bando (1968)- Lower and Middle Triassic ammonites from Portuguese Timor (Paleontological study of Portuguese Timor 4). Mem. Fac. Science, Kyoto University, Ser. 4, Geol. Mineralogy, 34, 2, p. 83-114.
*(online: http://repository.kulib.kyoto-u.ac.jp/dspace/bitstream/2433/186548/1/mfskugm%20034002_083.pdf)*
*(First report on E-M Triassic (U Scythian- Lw Anisian) ammonites from Timor Leste. from cephalopod limestones in 3 localities: (1) in N (W of Manatuto; area of mixed Triassic and Permian 'Fatu Limestones', SE of area of amphibolites/ serpentinite); (2) in S (N and SE of Pualaca= near Nogami 1963 Permian fusulinid locality; with M and Late Triassic 'Fatu limestones') and (3) in E (Tutuala; Late Triassic). Sixteen species incl. Dieneroceras dieneri, Anasibirites multiformis, Meekoceras spp., Procarnites, Leiophyllites timorensis, etc. With listings of associated conodonts)*

Nguyen, N., B. Duffy, J. Shulmeister & M. Quigley (2012)- Rapid Pliocene uplift of Timor. Geology 41, 2, p. 179-182.
*(Palynology of 34 samples of Pliocene turbidites-marls from type section of 200m thick Viqueque Fm of E Timor. From ~4.5- 3 Ma palynomorphs mainly from Australia and New Guinea (Casuarina, Eucalyptus, etc.), with increasing swamp and mangrove elements from emerging proto-Timor. After ~3.1 Ma pollen and charcoal track rapid uplift of Timor with progressive appearance of montane and dry, lee-side floristic elements. E-M Pliocene uplift rates of 0.5-0.6 mm/yr increased to 2-5 mm/yr in latest Pliocene)*

Nicoll, R.S. (1999)- Triassic conodont faunas from Australia and Timor. In: H. Yin & J. Tong (eds.) Proc. Int. Conf. Pangea and the Paleozoic- Mesozoic transition, Wuhan 1999, China Univ. Geoscience Press, p. 140-141. *(Abstract only)*
*(Conodonts at various horizons in Timor Triassic similar to Australia NW shelf margin)*

Nicoll, R.S. & C.B. Foster (1998)- Revised biostratigraphic (conodont-palynomorph) zonation of the Triassic of Western and northwestern Australia and Timor. In: P.G. & R.R. Purcell (eds.) The sedimentary basins of Western Australia 2. Proc. Petroleum Expl. Soc. Australia (PESA) Symposium, Perth, 2, p. 129-139.
*(Studies of relationships between conodont faunas and spore-pollen and dinocyst palynofloras from W Australian margin and Timor have revised calibration of Australian Triassic palynomorph zones and stage terminology. Wombat-Timor Trough (newly defined) is axis of sedimentation on NW Shelf in Triassic)*

Niermann, H.T. (1975)- Polycoeliidae aus dem Oberperm von Basleo auf Timor. Munstersche Forsch. Geol. und Palaont. 37, p. 131-225.
*(Taxonomic revision of Polycoeliidae family of solitary rugose corals from lower Upper Permian of Basleo, Timor, based on 490 specimens collected by Ehrat in 1927, and mainly building on work of Gerth (1921) and Koker (1924). 25 species, 13 new species, 10 new subspecies. No stratigraphy or locality information)*

Nieuwenkamp, W.G.J. (1919)- Bezoek aan eenige slijkvulkanen op Kambang en Semaoe (West-Timor). Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 36, p. 488-492.
*('Visit to two active mud volcanoes on Kambang and Semau, W Timor'. Over 150m high composite mud volcanoes. Nothing on rock inclusions)*

Niko, S., T. Nishida & K. Nakazawa (2000)- Orthoconic cephalopods from the Lower Permian Atahoc Formation in East Timor. Paleontological Research, Japan, 4, 2, p. 83-88.
*(online at: www.palaeo-soc-japan.jp/download/PR/PR4-2.pdf)*
*(Three species of orthoconic cephalopods described from Lower Permian Atahoc Fm in Cribas area, E Timor (Mooreoceras sp., Atahococeras timorense), signifying non-ammonoid cephalopod fauna at N margin of Gondwana near Sakmarian-Artinskian boundary)*

Nogami, Y. (1963)- Fusulinids from Portuguese Timor (Palaeontological study of Portuguese Timor 1). Mem. College of Science, Kyoto University, Series Geol. Min., B30, 2, p. 59-68.

*(Four Early Permian fusulinid species (incl. Schwagerina nakazawae n.sp., Codonofusiella weberi, Parafusulina) described from limestone lens in basic tuffs in Fatu Auveon near Pualaca in C East Timor and N of Hato-Builico in W part of E Timor. Samples collected by Nakazawa in 1961)*

Nogami, Y. (1968)- Trias-Conodonten von Timor, Malaysien und Japan (Palaeontological study of Portuguese Timor 5). Mem. Fac. Science, Kyoto University, Ser. Geol. Min. 34, 2, p. 115-136.
*('Triassic conodonts from Timor, Malaysia and Japan'. Seven conodont faunas recognized in Triassic of Malaysia, Timor and Japan. Conodonts from Timor from samples collected by Nakazawa of ammonoid-bearing limestone of Lacon River, Manatuto District, Timor Leste, mainly Middle Triassic age. Includes description of new species Gondolella timorensis (now assigned to Chiosella; JTvG), a worldwide marker species for Lower Anisian, base of M Triassic. Malaysian material from Kodiang Lst probably all Late Triassic in age (specimen of Pl. 8, fig. 8 assigned to late Carnian Epigondolella primitia by Mosher (1973))*

Nutzel, A. (2007)- Cephalopoden (Ammoniten, Nautiliden und *Aulacoceras*) aus der Trias von Timor (Indonesien). Freunde Bayerischen StaatsSammlungen Palaont. Hist. Geol., Munchen, Jahresbericht 2006 und Mitteilungen 35, p. 32-34.
*('Cephalopods (ammonites, nautilids and Aulacoceras) from the Triassic of Timor, Indonesia')*

Oliveira, G. (2011)- Cartografia e estrutura da regiao Este do anticlinal de Cribas. Implicacoes para a genese de hidrocarbonetos. M.Sc. Thesis, Evora University, Portugal, p. 1-94. *(Unpublished)*
*('Mapping and structure of the region East of the Cribas anticline; implications for hydrocarbon generation')*

Orchard, M.J. (1994)- Conodont biochronology around the Early-Middle Triassic boundary: new data from North America, Oman and Timor. Memoires de Geologie (Lausanne) 22, p. 105-114.
*(online at: www.unil.ch/ )*
*(Includes discussion of Triassic conodonts in matrix around ammonites from 'Hallstatt-facies' limestone block of Timor, from which Tozer (1994) described ammonites. Common Chiosella timorensis and fewer Gladiogondolella tethydis, suggest E Anisian (M Triassic) age, simillar to assemblages from Oman and Chios (Base C. timorensis (Nogami) appears to be reliable conodont marker for E-M Triassic boundary; JTvG))*

Ormeling, F.J. (1957)- The Timor problem: a geographical interpretation of an underdeveloped island. Wolters, Groningen, 284p.
*(General geographic study of Timor)*

Osberger, R. (1954)- Contribution to the geology of Timor. IV. Notes on Plio-Pleistocene corals of Timor. Indonesian J. Natural Science 110, p. 80-82.
*(On corals from uplifted Plio-Pleistocene reef terraces near Lalan Asu, collected by De Waard expedition. Material generally poorly preserved)*

Ota, T. & Y. Kaneko (2010)- Blueschists, eclogites, and subduction zone tectonics: insights from a review of Late Miocene blueschists and eclogites, and related young high-pressure metamorphic rocks. Gondwana Research 18, 1, p. 167-188.
*(Review of formation and exhumation of Late Miocene blueschist and eclogite belts, including Timor-Tanimbar blueschist belt and world's youngest coesite- bearing eclogite in PNG)*

Pakuckas, C. & G. von Arthaber (1928)- Nachtrag zur Mittel- und Obertriadischen Fauna der Ammonoidea trachyostraca C. Dieners aus Timor. In: H.A. Brouwer (ed.) 2e Nederlandsche Timor-Expeditie VI, Jaarboek Mijnwezen Nederlandsch-Indie 56 (1927), Verhandelingen 2, p. 143-218.
*(Addendum to Diener (1922) work on thousands of M- Late Triassic ammonites collected from loose blocks in W Timor by 1916 Jonker expedition. Anisian- Carnian and probable Rhaetian assemblages, most of them similar to 'Halstatter Facies' of Mediterranean Province)*

Panjaitan, S. & S. Hutubessy (1997)- Analisis tektonik berdasarkan paleomagnetik di daerah Timor-Timur. J. Geologi Sumberdaya Mineral, 7, 70, p. 19-27.

*('Tectonic analysis of East Timor area based on paleomagnetic data'. Declination/ inclination results from 'allochthonous' and 'parautochthonous' outcrops mainly along traverse S of Dili rather variable: (1) Permian Aileu Fm 6°/-31° and 126°/48° (interpreted as deposited at latitude 29°N), (2) Late Permian Cribas Fm 150°/ 50 (deposited at 30.7°N), (3) Permian- Triassic Maubisse Fm 220°/44° (deposited at 25.7°N), (4) Late Triassic Aitutu Fm 295°/-54°(deposited at 34.5°S) and (5) Jurassic Wailuli Fm 18°/-22° (deposited at 11.4°S). In Late Triassic Timor was still close to Australian continent, in Jurassic already started to make move to N)*

Panjaitan, S. & S. Hutubessy (2004)- Pembentukan formasi batuan di Pulau Timor ditinjau dari data paleomagnet dan gayaberat. J. Sumber Daya Geologi 14, 1 (145), p. 55-68.
*('Formation of Timor island rock formations as observed from magnetic and gravity data'. Contribution to Asian vs. Australian origin of Timor rock units: Permian Aileu Fm formed at paleolatitude 48º N, Cribas Fm at ~31º N, Maubisse Fm at 25º N, all far N of equator and at S edge of Asian continent. Plate moved S since Triassic to form thrust sheets in Timor Island. Triassic Aitutu Fm formed at ~34º S and Jurassic Wailuli Fm at ~11º S, both far S of equator and part of Australian continent. Collision between Allochthon and Para-Authochthon rocks seen on 150 mgal negative Bouguer anomaly, in which Australian continent plate with density of 3.0 gr/cm³ subducted and depressed under Banda Sea plate*)

Park, S.I., H.J. Koh, S.W.Kim, Y.H. Kihm (2014)- The occurrence and origin of a syn-collisional melange in Timor. Economic Environmental Geol. 47, 1, p. 1-15.
*(online at: http://ocean.kisti.re.kr/downfile/volume/kseeg/JOHGB2/2014/v47n1/JOHGB2_2014_v47n1_1.pdf)*
*(In Korean, with English abstract. Bobonaro melange syn-collisional melanges formed during collision between Australian continental margin and Banda arc. In Suai area melange matrix of unmetamorphosed red-green clay with scaly texture, with allochthonous blocks. Melange classified into 1) diapiric; 2) tectonic; and 3) broken formation. Melange intruded all pre-collisional units including lower Australian margin unit (Gondwana megasequence) and Banda arc unit. Interpreted to be mainly formed as diapiric melange originated from Gondwana megasequence)*

Park, S.I., S. Kwon & S.W. Kim (2014)- Evidence for the Jurassic arc volcanism of the Lolotoi complex, Timor: tectonic implications. J. Asian Earth Sci. 95, p. 254-265.
*(SHRIMP U-Pb zircon ages from two andesitic metavolcanic rocks in Lolotoi complex, Timor Leste, yield permissible range of M Jurassic extrusion from 177-174 Ma (~late E Jurassic; Toarcian). Inherited grains age cluster of 242 ± 4 Ma and oldest grain of 1848 Ma. Basaltic-andesitic metavolcanics products of prolonged oceanic crust and arc magmatism, respectively. Parts of Banda forearc basement are pieces of allochthonous oceanic basalts and Jurassic arc-related andesites accreted to Sundaland during closure of Mesotethys, and incorporated later into Great Indonesian Volcanic Arc system along SE margin of Sundaland (NB: suggests Lolotoi Metamorphics younger than 'Gondwana sequence' of Timor; JTvG))*

Partoyo, E., B. Hermanto & S. Bachri (1995)- Geological map of the Baucau Quadrangle, East Timor, 1:250,000. Geol. Res. Dev. Centre (GRDC), Bandung.
*(Geologic map of NE part of Timor Leste. 'Para-autochthonous' with E Permian Maubisse and Atahoc and Late Permian Cribas as oldest units, and 'Autochthonous' units. No 'Allochthonous'.)*

Peloschek, H.P. (1956)- Contributions to the geology of Timor. XI. Reports on magnetic observations and radioactive measurements in lndonesian Timor. Majalah llmu Alam Indonesia (Indonesian J. Natural Science) 112, p. 175-186.

Penecke, K.A. (1908)- Uber eine neue Korallengattung aus der Permformation von Timor. Jaarboek Mijnwezen Nederlandsch Oost-Indie 37, Wetenschappelijk Gedeelte, p. 657-659.
*('On a new coral genus from the Permian of Timor'. Description of new genus of solitary coral collected by Verbeek: Verbeekia permica n.gen., n.sp. from Ayer Mati, Basleo area. Later renamed Verbeekiella)*

Permana, A.K., A. Kusworo & A.H. Prastian (2014)- Characteristics of the Triassic source rocks of the Aitutu Formation in the (West) Timor Basin. Indonesian J. Geoscience 1, 3, p. 165-174.
*(online at: http://ijog.bgl.esdm.go.id/index.php/IJOG/article/view/198/184)*

*(Triassic marine fine-grained clastics and carbonates of W Timor considered to be most promising source rocks in basin. Geochemical and petrographic data from Aitutu Fm carbonate outcrops in Niki-Niki and other localities near Kolbano show TOC up to 9.2% and kerogen dominated by Type II with minor Type III. Organic matter mainly oil and gas prone. Thermal maturity from Tmax, TAI and Vitrinite Reflectance shows immature-early mature stage. Biomarkers indicate mixed source facies of algal debris and higher plant terrestrial origin)*

Permana, A.K., A. Kusworo & A.H. Prastian (2014)- Characteristics Triassic source rocks in the (West) Timor Basin. Proc. 43rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, PIT IAGI 2014-026, 6p.
*(Similar to Permana et al. 2014, above. Mainly study of two 22-27m thick outcrop sections of folded deeper marine limestones and shales of Triassic Aitutu Fm along Noil Fatu and Toeheum, Kolbano Area, SW Timor. With open marine bivalves Monotis salinaria (E Carnian-M Norian) and Halobia spp. Locally high TOC (up to 8.1%). Vitrinite reflectance of Noe Fatu section 0.67- 0.73% (early peak maturity for oil generation), Toeheum section 0.43- 0.57% (immature to early dry gas generation))*

Permana, A.K. & A.H. Prastian (2013)- Fasies kipas bawah laut bawah laut pada batuan berumur Perem-Trias daerah Kekneno, Cekungan Timor. J. Geologi Sumberdaya Mineral 14, 1 (199), p. 3-18.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/74/73)*
*('Submarine fan facies of the Permian-Triassic rocks in the Kekneno area, Timor basin'. Sedimentological study of Permian-Triassic turbiditic clastics in Kekneno area, Nenas, NW Timor. Permian Atahoc- Cribas Fms in slope submarine fan facies. Cribas Fm >300m thick, feldspathic litharenites with polycrystalline quartz, plagioclase and volcanic rock fragments. Triassic Niof Fm greywacke (400m) and Babulu Fm also with various submarine fan facies)*

Petroconsultants (1992)- Timor Island. Southeast Asia basin opportunities. Petroconsultants (Far East) Pte. Ltd. Singapore, Non-exclusive Report. *(Unpublished)*

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*('Quaternary reefal limestone facies in the Wera area and surroundings, Bima, Sumbawa'. One modern and 7 uplifted Pleistocene coral reef terraces up to 120m elevation along N coast of Sumbawa. Overlie Quaternary volcanics)*

Praptisih (1996)- Facies batugamping terumbu koral Kuarter di daerah Kupang dan sekitarnya, Timor. Proc. 25th Ann. Conv. Indon. Assoc. Geol. (IAGI), p. 233-241.
*(Facies of Quaternary coral reefal limestone in the area of Kupang and surroundings)*

Prasetyadi, C. (1995)- Structure and tectonic significance of the Aileu Formation, East Timor. Masters Thesis, West Virginia University, p. 1-144. *(Unpublished)*

Prasetyadi, C. & R.A. Harris (1996)- Structure and tectonic significance of the Aileu Formation, East Timor, Indonesia. Proc. 25th Conv. Indon. Assoc. Geol. (IAGI), Bandung, 3, p. 144-173.
*(online at: www.geology.byu.edu/wp-content/uploads/2010/06/1996-Aileu-Pras-Harris.pdf)*
*(Structural analysis of C Timor Aileu Fm, which is metamorphised sandstone, shale, limestone and intrusives. In S transitional to unmetamorphosed Permian- Jurassic Maubisse Fm. Metamorphic grade increases from sub-greenschist in S to amphibolite along N coast. At least 3 deformation phases: (D1) Mesozoic?- extensional, (D2) tight folding, tied to arc-continent collision, (3) youngest: compressional stack cut down to N by normal faults along N coast of Timor)*

Prastian, A.H., Y. Aribowo & A.K. Permana (2014)- Analisis fasies batuan Perm-Trias dan prospeksi batuan induk dan reservoir di cekungan Timor, Nusa Tenggara Timur. Proc. 43rd Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, PIT IAGI 2014-030, 17p.
*('Facies analysis of Permian-Triassic rocks and prospecting of source rock and reservoir in the Timor basin, East Nusa Tenggara'. Permian and Triassic clastics in Kekneno- Nenas area mainly of deeper marine fan facies. Black shale of Niof Fm with high vitrinite (65-87%) and >95% gas-prone kerogens. Sandstones generally poor reservoir quality (porosity 2-6%))*

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*(Platygyra coral from exhumed syn-orogenic marine sediments on Timor (Late Pliocene turbiditic upper part of Viqueque Fm in Cuha River N of Viqueque) dated with U-Pb techniques as 2.66 ± 0.14 Ma. Age supported by 87Sr/86Sr chemostratigraphy and foraminiferal biostratigraphy. Onset of turbiditic deposition with Banda Terrane-derived detritus mark Timor's emergence from beneath waters of Indonesian Seaway is within planktonic foram zone N20, timed at ca. 3.35-2.66 Ma)*

Ramos-Horta, J. & P. Vickers-Rich (2009)- O Mundo Perdido Timor-Leste. Monash University Science Center, Clayton, Melbourne, 32p.
*(online at: www.geosci.monash.edu.au/precsite/docs/educational/o-mundo-perdido-english.pdf)*
*('The Lost World of Timor-Leste'. Portuguese and English editions. Children's book on the geological history of Timor Leste)*

Reed, T.A., M.E.M. de Smet, B.H. Harahap & A. Sjapawi (1996)- Structural and depositional history of East Timor. Proc. 25th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 297-312.
*(Report on 1994 Mobil-GRDC fieldwork in E Timor. Propose mid-Eocene age for collision/ ophiolite obduction event of 'allochthonous' Banda terrane and Australian continent. Second pulse of thrusting and partial Australian Plate subduction latest Miocene- today)*

Renz, C. (1906)- Uber Halobien und Daonellen aus Griechenland nebst asiatischen Vergleichsstucken. Neues Jahrbuch Mineral. Geol. Palaont., 1906, 1, p. 27-40.
*('On Halobia and Daonella from Greece, with comparison of Asian specimens'. Includes revisions of Rothpletz (1892, 1894) identifications of Triassic bivalves, and descriptions of Pseudomonotis and Daonella from Roti (collected by Wichmann), and Daonella from Sumatra (collected by Volz 1899; assigned to D. styriaca). Monotis salinaria of Rothpletz should be assigned to Pseudomonotis ochotica var. densistriata)*

Renz, C. (1909)- Die Trias von Roti und Timor im Ostindischen Archipel. Centralblatt Mineralogie Geologie Palaont., 1909, p. 355-361.
*(www.biodiversitylibrary.org/item/192781#page/377/mode/1up)*
*('The Triassic of Roti and Timor in the East Indies archipelago'. U Triassic thin-bedded limestones on Roti island with common bivalves, incl. Monotis salinaria. Discussion on use of genus name Daonella vs. Halobia and Monotis. Halobia cassiana described by Rothpletz (1892) = Daonella styriaca. With illustrations of Daonella styriaca and D. wichmanni from Roti)*

Retgers, J.W. (1895)- Gesteenten van Timor en onderhoorigheden. In: Mikroskopisch onderzoek van gesteenten uit Nederlandsch Oost-Indie, Jaarboek Mijnwezen Nederlandsch-Indie 1895, Verhandelingen, p. 139-148.
*('Rocks from Timor and dependent areas'. Brief petrographic descriptions of rocks from Junilo District (serpentinite, andesite, diabase, gabbro, hornblende schist. Also similar rocks from other parts of W Timor. No locality maps, no plates)*

Riding, R. & S. Barkham (1999)- Temperate water *Shamovella* from the Lower Permian of West Timor, Indonesia. Alcheringa 23, p. 21-29.
*(Problematic sponge-like calcareous fossil generally called Tubiphytes is common in Permian- Triassic reefs. Here called Shamovella obscura and locally abundant in Late Sakmarian Hoeniti Mb of Maubisse Fm near Bisnain, eastern W Timor, associated with brachiopods of temperate water affinity)*

Riedel, W.R. (1953)- Mesozoic and late Tertiary Radiolaria of Rotti. J. Paleontology 27, 6, p. 805-813.
*(Re-examination of the radiolarian fauna described by Tan Sin Hok (1927) from calcareous sediment from Bebalain, Rotti Island. Fauna previously assigned probably Pliocene age, but contains reworked(?) Cretaceous forms (Spongosaturnalis, Stylosphaera, Tricolocapsa, Stichomitra etc.). Radiolaria from nearby locality probably of Pliocene- Pleistocene age))*

Ritsema, L. (1951)- Description de quelques Alveolines de Timor: resultat dôune elaboration de la methode des courbe dôindice de Reichel. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, B54, 2, p. 174-182.
*('Description of some alveolinids from Timor'. Eocene Alveolina limestones collected by Van West in Miomaffo region, W Timor, contain five species)*

Ritsema, A.R. (1956)- Gravity measurements on Timor Island. Indonesian J. Natural Science (Majalah Ilmu Alam untuk Indonesia) 112, 2, p. 171-174.
*(Highest positive gravity anomalies in area of young volcanic rocks on N coast. Strip of small negative values in Central basin probably related to Nikiniki fault. Good correspondence of anomalies with geologic units)*

Ritsema, A.R. (1956)- Two gravity profiles across Timor Island. Verhandelingen Kon. Nederl. Geologisch Mijnbouwkundig Genootschap, Geol. Serie 16 (Gedenkboek Brouwer), p. 380-385.
*(Two N-S gravity profiles across W Timor: Kupang- Buan and Ocussi- Kolbano, Surveyed in 1954. All Bouguer anomalies of Timor island are positive, with highest values near N coast. Lowest and possibly negative Bouguer anomaly in narrow strip around Nikiniki and Central Depression)*

Robba, E., S. Sartono, D. Violanti & E. Erba (1989)- Early Pleistocene gastropods from Timor (Indonesia). Memorie Scienze Geol., Padova, 41, p. 61-113.
*(Rich marine gastropod fauna (56 species) and foraminifera from E Pleistocene marl (Batuputih Fm) from Oe Sapi creek, Tinu, 1 km NE of Atambua town, W Timor, collected during 1954-1957 ITB expeditions. Lyellian percentage of living species 56%. Associated with rich marine foraminiferal fauna (85% planktonics, incl. Globorotalia tosaensis, but no G. truncatulinoides). Common Neogloboquadrina dutertrei and presence of Neogloboquadrina pachyderma suggesting upwelling of cold currents. Interpreted to be deposited in 150-250m of water, influenced by cold currents)*

Rocha, A. Tavares & M. de Lourdes Ubaldo (1964)- Foraminiferos do Terciario Superior e do Quaternario da provincia Portuguesa de Timor. Mem. Junta de Investigacoes do Ultramar 51, Lisboa, p. 1-180.
*('Foraminifera of the Late Tertiary and Quaternary of the Portuguese province of Timor'; in Portuguese)*

Rocha, A. Tavares & M. de Lourdes Ubaldo (1964)- Contribuicao para o estudo foraminiferos do Terciario superior de Timor. Garcia de Orta: Revista da Junta de Investigacoes do Ultramar 12, 1, p. 153-158.
*('Contribution the the study Late Tertiary foraminifera of Timor')*

Romariz, C. (1962)- Notas sobre rochas sedimentares Portuguesas. V. Um cherte do 'complexo argiloso' de Timor. In: Estudos Oferecidos em homenagem ao Prof. J. Carrington da Costa, Junta Investigacoes do Ultramar, Lisbon, p. 287-290.
*('Notes on Portuguese sedimentary rocks, V. On chert of the argillaceous complex of Timor')*

Romariz, C. & J. de Azeredo Leme (1967)- Subsidios para a petrografia timorense. Calcarios de fato. Garcia de Orta: Revista da Junta de Investigacoes do Ultramar 15, 1, p. 111-122.
*('Contributions to Timor petrography: Fatu limestones')*

Roniewicz, E. & G.D. Stanley (2009)- *Noriphyllia*, a new Tethyan Late Triassic coral genus (Scleractinia). Palaont. Zeitschrift, DOI 10.1007/s12542-009-0030-8, p. 467-478.
*(Noriphyllia new genus of solitary coral, with two new E Norian and one Carnian species. Widely distributed in E Norian reef facies of Tethys region and occurs in Carnian of Timor. Noriphyllia monatutoensis n.sp. type locality is Saututun, Manatuto, Timor Leste, in Carnian limestone (exotic boulders?) in Babulu Fm)*

Roniewicz, E., G.D. Stanley, F. Da Costa Monteiro & J.A. Grant-Mackie (2005)- Late Triassic (Carnian) corals from Timor-Leste (East Timor): their identity, setting and biogeography. Alcheringa 26, 2, p. 287-303.
*(Four coral taxa from Late Triassic limestone in Babulu Fm sst-shale sequence at Manatuto, E Timor N coast (incl. Paravolzei, Craspedophyllia, Margarosmilia confluens). Affinities to Carnian faunas from Italy. Previously, only Norian corals known from Timor Triassic. Carnian faunas help confirm paleogeographic affinities with W Tethys (NB: stratigraphically above Norian dinoflagellate Wanneria listeri (Da Costa Monteiro 2003 in Charlton et al. (2009), suggesting possible Norian age for these corals?; JTvG))*

Roosmawati, N. (2005)- Long-term surface uplift history of the active Banda Arc-continent collision: depth and age analysis of foraminifera from Rote and Savu Islands, Indonesia. M Sc. Thesis, Brigham Young University, p. 1-120.
*(online at: http://scholarsarchive.byu.edu/cgi/viewcontent.cgi?article=1558&context=etd.)*
*(Foraminifera documentation of Pliocene age and deep water facies of Batu Putih Fm marls on Rote and Savu)*

Roosmawati, N. & R. Harris (2009)- Surface uplift history of the incipient Banda arc-continent collision: geology and synorogenic foraminifera of Rote and Savu Islands, Indonesia. Tectonophysics 479, p. 95-110.
*(Synorogenic pelagic units of Rote and Savu show rapid uplift of Banda arc-continent collision in past 1.8 Myr. Synorogenic Batu Putih Fm unconformably over accreted units, aged N18- N22 (5.6- 1.0 Ma), deposited at depths of ~3000m and unconformably overlain by uplifted coral terraces. Highest coral terraces in Savu 300m above sea level; in Rote up to 200m. Collision of Australian margin with Banda Arc earlier in Timor, propagated W to Rote (initial stages of accretionary wedge emergence). Collision of Scott Plateau propagated SE from Sumba (2-3 Ma) to Savu (1.0-0.5 Ma), then to Rote (0.2 Ma). Average uplift of Batu Putih Fm pelagics in past 2 Myr in Rote and Savu ~1.5 and 2.3 mm/yr. Rise of islands is clogging Indo-Pacific seaway)*

Roosmawati, N., R.A. Harris, H. Nugroho et al. (2004)- Long-term surface uplift history of the active Banda arc-continent collision: depth and age analysis of foraminifera from Rote and Savu Islands, Indonesia. Abstract Geol. Soc. America(GSA) 2004 Denver Ann. Mtg., Paper No. 152-15.
*(Synorogenic deposits in W Rote outcrops are of Pliocene age (zone N21; 3.1-1.8 Ma) with paleowater depths deeper than 2500m. Banda arc-continent collision arrived in Rote after ~3 Ma, possibly later in Savu)*

Rose, G. (1994)- Late Triassic and Early Jurassic radiolarians from Timor, Eastern Indonesia. Ph.D. Thesis, University of London, p. 1-384. *(Unpublished)*
*(Rich Upper Carnian- Rhaetian radiolarian faunas from Aitutu and Wai Luli Fms in River Meto sections, central W Timor. Additional material collected from presumed Triassic on Buton, Leti, Moa, Babar, but no radiolarians recovered. Timor Triassic radiolarian assemblages differ from European Tethys, Philippines and Japanese assemblages. E Jurassic assemblages closer to Japan than other areas. Apparent Late Rhaetian- E Sinemurian time gap at Triassic-Jurassic boundary (Carter 2007: Rhaetian radiolarian faunas from W Timor with some cosmopolitan taxa, but others have stronger affinities with those in Japan and Philippines)*

Rosidi, H.M.D., S. Tjokosapoetro, S. Gafoer & K. Suwitodirdjo (1979)- Geologic map of the Kupang-Atambua Quadrangles, Timor, 1: 250,000. Geol. Res. Dev. Center, Bandung.
*(1:250,000 surface geology of westernmost Timor, and Roti and Savu islands; see also 2nd edition- 1996))*

Rothpletz, A. (1891)- The Permian, Triassic and Jurassic formations in the East Indian Archipelago (Timor and Rotti). American Naturalist 25, p. 959-962.
*(Early summary of 'new' Timor- Roti fossils, based on examination of Wichmann collection. Timor Late Paleozoic fossils here regarded as Permian in age, not Carboniferous as previously thought)*

Rothpletz, A. (1892)- Die Perm, Trias- und Jura-Formation auf Timor und Rotti im Indischen Archipel. Palaeontographica 39, 2, p. 57-106.
*(online at: https://www.biodiversitylibrary.org/item/103958#page/69/mode/1up)*
*('The Permian, Triassic and Jurassic formation on Timor and Roti in the Indies Archipelago'. Descriptions of many new Permian- Jurassic macrofossils from Indonesia, mainly collected by Wichmann 1888-1889. Permian-*

*Triassic material from mud Ayer Mati area, SE of Kupang, W Timor, includes Permian brachiopods (Spirifer spp., Productus spp., Spirigera, Lythonia (=Leptodus), Rhynchonella), bivalve Atomodesma, coral Zaphrentis, ammonites Arcestes and Cyclolobus persulcatus and crinoids. From Roti some Permian fossils in mud volcano material. Also white-red thin-bedded limestones with 'alpine' U Triassic Monotis salinaria and Halobia spp. Also in mud volcano material 'Tethyan' Early Jurassic ammonites Arietites spp. and Stephanoceras (Coeloceras) and M Jurassic Belemnites gerardi)*

Rothpletz, A. (1894)- Die Perm, Trias- und Jura-Formation auf Timor und Rotti im Indischen Archipel. Jaarboek Mijnwezen Nederlandsch Oost-Indie 23 (1894), Wetenschappelijk Gedeelte, p. 5-98.
*('The Permian, Triassic and Jurassic formation on Timor and Roti in the Indies Archipelago'. Reprint of Rothpletz (1892) Palaeontographica paper. Descriptions of many new Permian- Jurassic macrofossils from Indonesia)*

Rutten, L.M.R. (1927)- Geologie van Timor. In: L.M.R. Rutten (1927) Voordrachten over de geologie van Nederlandsch Indie, Wolters, Groningen, p. 679-704.
*(Review of geology of Timor in Rutten's classic lecture series)*

Sahudi, K. & R.N. Baik (1993)- Play concept of hydrocarbon exploration in East Timor. Proc. 22nd Ann. Conv. Indon. Assoc. Geol. (IAGI), Bandung 1993, 2, p. 913-924.
*(In Indonesian. Brief overview of E Timor hydrocarbon exploration and plays. Exploration in E Timor since 1908. By mid-1970's 21 wells drilled. Oil tested in Matai 1 (180 BOPD) and Cota Taci (1974, 200 BOPD). Two main plays: (1) pre-collision thrusted anticlines, with reservoirs in Permian- Jurassic rocks; (2) post-collision: Late Miocene Viqueque sandstones in rollover anticlines and downthrown blocks of listric faults)*

Sampurno & B. Brahmantyo (1991)- Geologi batuan marmer Gunung Fatufutik, Kabupaten Manatuto, Propinsi Timor Timur. Proc. 20th Ann. Conv. Indon. Assoc. Geol. (IAGI), p. 591-604.
*('Geology of marble rocks at Fatufutik Mountain, Manatuto District, Tmor Leste')*

Sani, K., M.I. Jacobson & R. Sigit (1995)- The thin-skinned thrust structures of Timor. Proc. 24th Ann. Conv. Indon. Petroleum Assoc., p. 277-293.
*(Amoseas fieldwork and Banli 1 well data. Kolbano foldbelt series of thrusts of Triassic-Tertiary Australian shelf sediment. Restorations suggest shortening of ~45 km (65%) mainly between 2.2- 1.6 Ma, after which main deformation jumped S to present-day Timor Trough. Total shortening, excluding shortening under Timor Trough, may be 208 km. Onset of collision probably ~3.7 Ma; subduction locked up ~1.6 Ma)*

Santy, L.D. & A.J. Widiatama (2017)- Perbandingan provenance Formasi Babulu dan Formasi Oebaat Pulau Sabu, NTT. Proc. Joint Conv. HAGI-IAGI-IAFMI-IATMI (JCM 2017), Malang, 5p.
*('Comparison of provenance of the Babulu and Oebaat Formations of Savu Island, NTT'. Sandstone petrography of (1) Late Triassic Babulu Fm (quartz 21-54%, feldspar 3-18%, and mainly metamorphic rock fragments 1-28%; recycled orogen) and earliest Cretaceous Oe Baat Fm (quartz 72-99%, feldspar 1-4%, rock fragments 0-5%; craton interior))*

Sartono, S. (1964)- Cretaceous foraminiferal fauna from the Kekneno tectonic unit of Bokon area in Timor, Indonesia.Proc. 22nd Int. Geol. Congress, New Delhi 1964, 8, Palaeontology and Stratigraphy, p. 407-416.

Sartono, S. (1975)- The age of Kekneno Formation in Timor, Indonesia. Geologi Indonesia 2, 2, p. 29-37.
*(Limestone samples from Bokon area, E of Ocussi in NE part of W Timor, from banded limestones and cherty shales in upper Kekneno Fm (= tectonically lowest 'para-autochthonous' unit; mainly Permo-Triassic clastics), with middle-upper Cretaceous planktonic forams (Globotruncana appeninica, Gumbelina, Ventilabrella). No evidence of Jurassic sediments here)*

Sartono, S. (1980)- The Ofu Series in West Timor (East Indonesia). Bull. Dept. Geol. Inst. Teknologi Bandung 1, p. 1-10.

Sartono, S. & T. Djubiantono (1982)- Pengembangan potensi airtanah cekugnan Kuarter Atambua, Timor Barat. Riset Inst. Tekn. Bandung (ITB) 1981-1982, p.
*('Potential development of groundwater in the Quaternary Atambua basin'. Recognized four main Pleistocene river terraces in Atambua area)*

Sartono, S. & M. Koesmono (1975)- Recognition of the geological units in Timor; a bimodal approach. Geologi Indonesia 2, 3, p. 29-34.
*(Proposal for another mixed lithostratigraphic- tectonic scheme for geologic units of Timor)*

Sartono, S., B. Suprapto, K. Poncomoyono & I. Hendrobusono (1992)- Kerangka tektonostratigrafi Timor, Indonesia Timur. Proc. 21st Ann. Conv. Indon. Assoc. Geol. (IAGI), Yogyakarta, 2, p. 547-563.
*('Tectonostratigraphic framework of Timor, East Indonesia'. Timor situated in accretionary zone. Tectonic melange wedges formed during Laramide (= end Cretaceous) tectonization. Olistostromes of late E Miocene form largest part of island (Bobanaro scaly clay in Timor Leste= Sonnebait tectonic unit in West). Eocene- E Miocene gravity tectonics important; normal sedimentary units from Late Miocene- Quaternary. Comparison tables of formation names and tectonic units in E and W Timor)*

Sashida, K. (2001)- Status of Paleozoic and Mesozoic radiolarian study in Thailand and Timor Island, Indonesia. In: A. Matsuoka (ed.). Paleoceanography of the Panthalassa-Tethys, Invitation to Global Field Science Topics in Paleontology, Paleontological Soc. Japan, 2, p. 25-30.

Sashida, K., S. Adachi, K. Ueno, Y. Kamata, & Munasri (1998)- Triassic radiolarian faunas from West Timor, Indonesia. Abstracts Interrad VIII Conference, Paris, Radiolaria 16, 1p. *(Abstract only)*
*(Allochthonous blocks of Aitutu Fm fine-grained radiolarian limestone in Bobonaro melange. Four different localities and radiolarian faunas: (A) Late Anisian, (B) Carnian, (C) Norian and (D) Rhaetian. All are Tethyan-Panthalassa faunas and suggest rel. warm water conditions in Triassic)*

Sashida, K., S. Adachi, K. Ueno & Munasri (1996)- Late Triassic radiolarians from Nefokoko, west Timor, Indonesia. H. Noda & K. Sashida (eds.) Professor H. Igo Commemorative volume on Geology and Paleontology of Japan and Southeast Asia, Gakujyutsu Tosho Insatsu, Tokyo, p. 225-234.
*(Siliceous bedded limestone block ('Aitutu Fm') embedded in Bobonaro melange in NW part of W Timor with radiolarians and conodonts interpreted as Carnian age)*

Sashida, K., Y. Kamata, S. Adachi & Munasri (1999)- Middle Triassic radiolarians from West Timor, Indonesia. J. Paleontology 73, 5, p. 765-786.
*(Block of probably allochthonous Aitutu Fm radiolarian calcilutite from Bobonaro melange 3 km W of Kefamenau contains abundant E Ladinian typical low-latitude Tethyan forms, similar to European Tethys. Aitutu Fm deposited in warm-water, oceanic environment, far from land area, in low latitude Tethyan realm)*

Sashida, K. & Munasri (1999)- Tethyan and non-Tethyan Early Cretaceous radiolarian faunas from the Nakfuna Formation, Kolbano Area, West Timor, palaeogeographic and tectonic implication. In: H. Darman & F.H. Sidi (eds.) Proc. Tectonics and sedimentation of Indonesia seminar, Bandung 1999, Indon. Sedim. Forum Spec. Publ. (Abstracts volume), 1, p. 88-91.

Sashida, K., Munasri, S. Adachi & Y. Kamata (1999)- Middle Jurassic radiolarian fauna from Rotti Island, Indonesia. J. Asian Earth Sci. 17, 4, p. 561-572.
*(Folded 'Wai Luli Fm' calcareous shale near Baa at NW coast of Roti with Late Bajocian- Early Bathonian low-latitude 'Tethyan' radiolarian assemblage of Tricolocapsa plicarum Zone. Believed to be deposited in deep ocean, far from land. In same areas also Late Triassic and Early Cretaceous thin-bedded limestones with radiolarians Assemblage of 15 species of 7 genera, dominated by Tricolocapsa spp., Stichocapsa spp., Archaeodictyomitra spp. and Cyrtocapsa. New species Tricolocapsa multispinosa and T. matsuokai)*

Sashida, K., Munasri, S. Adachi & K. Ueno (1996)- Early Cretaceous radiolarian faunas from the Nunleo area in southwest Timor, Indonesia. In: B. Ratanasthien & S.L. Rieb (eds.) Proc. Int. Symposium on Geology and Environment, Chiang Mai, Thailand, p. 223. *(Abstract only)*
*(online at: http://library.dmr.go.th/Document/Proceedings-Yearbooks/M_1/1996/ )*
*(Well-preserved E Cretaceous radiolaria assemblages in abyssal calcilutite of Nunleo area of Kolbano Complex, SW Timor: (1) late Berriasian- Valanginian, with non-Tethyan general Parvicingula, Eucyrtis, Eusyringium and Spongocapsula; (similar to NE Indian Ocean faunas); (2) Hauterivian- Barremian Dibolachras tytthopora assemblage, with Tethyan and non-Tethyan species)*

Sawyer, R.K., K. Sani & S. Brown (1993)- The stratigraphy and sedimentology of West Timor, Indonesia. Proc. 22nd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 533-574.
*(Amoseas W Timor fieldwork, stratigraphy overview. Three main packages in Permian-Neogene outcrops on West Timor: (1) E Permian- E Pliocene sediments deposited on Gondwana and Australian continental- oceanic crust (Kekneno and Kolbano Sequences), (2) Neogene syn- and post-orogenic sediments (Viqueque Sequence) and (3) Lower Cretaceous-Neogene volcanic arc and forearc basin sediments of Banda Terrane. Age of Oe Baat Fm glauconitic sandstone of Kekneno seriesof SW Timor revised to Tithonian- Berriasian (equivalent of Flamingo Gp of NW Shelf, Buya Fm of Sula, Woniwogi Fm of W Papua, etc.))*

Schneider, C.F.A. (1863)- Bijdrage tot de geologische kennis van Timor. Natuurkundig Tijdschrift Nederlandsch-Indie 25, p. 87-107.
*('Contribution to the geological knowledge of Timor'; in Dutch. One of first geological descriptions of Timor (Kupang area), by German physician Schneider. Young coral limestone terraces, oolitic limestones, manganese beds, dark clays green sandstone-marl with brachiopods (Spririfer, Orthis, Terebratula, etc.), believed to be of Jurassic age. Also near Bakoelnassi bright-colored marls and sandstones with Gervillea and Trigonia, crinoid limestones, Cretaceous chalk, basaltic diorite near Tabeno, etc. According to locals skeleton of giant fish was found near Ikafoti (= Ichthyosaurus?; JTvG). No maps or figures)*

Schubert, R. (1915)- Die Foraminiferen des jungeren Palaozoikums von Timor. Palaontologie von Timor, Schweizerbart, Stuttgart, 2, 3, p. 47-60.
*('The foraminifera of the younger Paleozoic of Timor'. First paper on Timor Permian fusulinids and smaller foraminifera from many localities, collected by Wanner, Molengraaff and Weber expeditions (no maps). (Thought to be Late Carboniferous age, but placed in Early Permian by later workers. Four species described. Parafusulina wanneri is type species of Monodiexodina wanneri; JTvG)*

Schubert, R. (1915)- Uber Foraminiferengesteine der Insel Letti. Jaarboek Mijnwezen Nederlandsch Oost-Indie 43 (1914), Verhandelingen 1, p. 169-187.
*('On the foraminifera-bearing rocks of the island of Leti'. Abundant, rel. large elongate Permian fusulinids in loose limestone blocks, described as Doliolina lepida var. lettensis (Thompson 1948: small fauna of verbeekinids described here from Leti is different from Timor faunas). Also Upper Cretaceous Globotruncana linneana and E Miocene Lepidocyclina and Heterostegina (= Spiroclypeus; JTvG))*

Shimizu, D. (1966)- Permian brachiopod fossils of Timor (Palaeontological study of Portuguese Timor 3). Memoirs College Science, Kyoto University, Ser. B, Geol. Min., 32, 4, p. 401-427.
*(17 brachiopod species from E Timor localities suggest Early Permian age. At some localities in part of autochthonous complex of reddish or purplish brown tuffaceous shale; in others associated with purplish tuffaceous, occasionally argillaceous limestones and shales (characterized as 'Bitauni fauna by Waterhouse (1973)= Artinskian?; JTvG))*

Sieverts, H. (1933)- *Jouannetia cumingi* (Sowerby) aus den Pliocan von Timor nebst Bemerkungen uber andere arten dieser Gattung. Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 71, p. 267-307.
*('Jouannetia cumingi from the Pliocene of Timor, with remarks on other species of this genus'. Detailed description of pholadid boring bivalve from Late Pliocene- Pleistocene raised coral reefs, now at 500-700m above sea level, in Basleo region of W Timor. This near-spherical shell species is known from Recent coral reefs of Indo-Pacific, drilling into coral bodies)*

Simons, A.L. (1939)- Geological investigations in N.E. Netherlands Timor. Ph.D. Thesis University of Amsterdam, p. 1-110. *(Unpublished)*
*(NE part of W Timor (S of Atapupu, W of Atambua) common serpentinites and associated amphibolite schists and undeformed Tertiary andesitic volcanics (incl. pillow lavas), overlain by Late Miocene and/or Pliocene 'Batu Putih' Globigerina marls with siliceous tuff interbeds near N coast. Permo-Triassic flysch, bathyal Mesozoic 'Sonnebait series' and massive Permian and Triassic 'Fatoe complex' limestones in S. Fig. 17 suggests serpentinites and diabase overlie Triassic Kekneno clastics, in turn overlain by Permo-Triassic Sonnebait and Fatoe limestones. Triassic sandstones rich in micas, tourmaline, zircon and garnet and derived from crystalline schists. Late Tertiary marly limestones with hornblende, augite, hyperstene, pointing to erosion of young volcanic deposits. Permian and Triassic in 3 different facies-tectonic types: Kekneno, Sonnebait and Fatoe. Folded pelagic Late Jurassic and Late Cretaceous sediments also present. Tectonic complexity and incomplete exposures prohibit stratigraphic colums or detailed cross-sections)*

Simons, A.L. (1940)- Geological investigations in N.E. Netherlands Timor. In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands 1937, 1, Noord Hollandsche Publ. Co., Amsterdam, p. 107-214.
*(Same as Simons (1939))*

Simamora, W.H. & M. Untung (1983)- Preliminary Bouguer anomaly gravity map of West Timor, 1:250,000. GRDC, Bandung.

Sinaga, S.H., R. Adiarsa, F. Alĉayubie, D. Aulia, I.A. Arindra, I.R. Sialagan & H. Tanjung (2011)- Geological observation of Soe, Kuanfatu, Kualin area and its implications for petroleum system of West Timor. Proc. 35th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 16p.
*(Outcrop observations on W Timor. Some samples analyzed for geochemistry. Highest TOC 0.75-1.0% in Triassic-Jurassic Aitutu and Wailuli Fms)*

Siwindono, T., B. Manumayoso, D. Priambodo & R.P. Yudantoro (1997)- Mesozoic exploration target in East Timor, Indonesia. 15th World Petroleum Congress, Beijing 1997, p. *(Abstract only*
*(Suai-Betano block in S part of Timor Leste. Permian- E Miocene generally in thrust structures, post-collision M Miocene-Pleistocene sediment deposited in suspended basin pond. Bobonaro Fm melange deposits in many areas of Suai-Betano block, with exotic blocks of Permian age. Some nappe structures present. Between 1914-1974 23 exploration wells drilled in Timor Basin. Cota Taci-1 tested 200 BO/D and Matal-1 180 BO/Dd from Bobonaro exotic blocks. Suailoro-1 oil show (also in Bobonaro exotic block?). Many oil seeps in Mesozoic reservoirs: Fatuberliu oil seep (Wailuli Fm sst) and Bemetane oil seep (Waibua Fm sst))*

Smith, J.P. (1927)- Permian ammonoids of Timor. In: H.A. Brouwer (ed.) 2e Nederlandsche Timor-Expeditie 1916, IV, Jaarboek Mijnwezen Nederlandsch-Indie 55 (1926), Verhandelingen 1, p. 1-58.
*(Ammonoid material from 1916 Jonker expedition to Timor. Richest Permian ammonoid fauna in world, in both species and abundance. Especially rich in Cyclolobidae and Medlicottiidae and rel. poor in Ceratitoidea. Successive Permian age faunas: (1) E Permian Somohole (common Marathonites, Gastrioceras, Paralegoceras, Pronorites), Bitauni (Perrinites, Agathiceras sundaicum, Paralegoceras spp.) and Basleo (with Waagenoceras, increase in Haloritidae); (2) Late Permian? Amarassi/ Ajer Mati fauna (still with Cyclolobus). Latest Permian faunas not seen in Timor)*

Sopaheluwakan, J. (1990)- Ophiolite obduction in the Mutis complex, Timor, eastern Indonesia. An example of inverted, isobaric, medium-high pressure metamorphism. Ph.D. Thesis Free University, Amsterdam, VU University Press, p. 1-226.
*(Mutis and Miomaffo metamorphic complexes have inverted metamorphic gradients and formed by obduction of hot, young ophiolite over oceanic rocks in Early Cretaceous. K-Ar age of 37 Ma corresponds to cooling below 300° C of terrane after mild reheating, up from depth of 5-6 km, suggestings major uplift in Late Eocene. This is then interpreted as Eocene collision onto Australian craton (possibly Sundaland margin event?; JTvG))*

Sopaheluwakan, J. (1991)- The Mutis metamorphic complex of Timor: a new view on the origin and its regional consequences. Proc. 20th Ann. Conv. Indon. Assoc. Geol. (IAGI), Jakarta, p. 301-315.
*(Mutis and Miomaffo complexes metamorphics in W Timor formed from MOR Basalt and continent-derived greywacke. Structurally overlain by peridotite, with inverted metamorphic gradient (granulite near base of peridotite through amphibolite to greenschist- blueschist at base of sequence. Interpeted as metamorphic sole below ophiolite, formed during intra-oceanic thrusting. Crustal extension terminated Mutis Complex deformation. K-Ar age of ~37 Ma of mica in metapelite reflects Late Eocene cooling/uplift)*

Sopaheluwakan, J., H. Helmers, S. Tjokrosapoetro & E. Surya Nila (1989)- Medium pressure metamorphism with inverted thermal gradient associated with ophiolite nappe emplacement in Timor. In: J.E. van Hinte et al. (eds.) Proc. Snellius II Symposium, Jakarta 1987, Netherlands J. Sea Research 24, p. 333-343.
*(Mutis and Miomaffo Massifs metamorphosed pelitic and basic rocks associated with serpentinized peridotites. Decrease in metamorphic grades below and away from peridotites, with Mutis Massif slightly higher-grade metamorphism than Miomaffo. P-T-D plots of Mutis samples yield T gradient of 300 °C/·km in 1 km thick metamorphite below basal peridotite. Invertedly zoned metamorphites and other indications suggest Mutis and Miomaffo Massifs represent metamorphic aureoles below ophiolite slab)*

Sorauf, J.E. (1978)- Original structure and composition of Permian rugose and Triassic scleractinian corals. Palaeontology 21, 2, p. 321-339.
*(Study of Permian solitary coral structure based on exceptionally well-preserved material in Wanner collection from Guadalupian of Basleo 23 locality, SW Timor (Polycoelia angusta, Timorophyllum wanneri, Lophophyllidium spinosum))*

Sorauf, J.E. (1983)- Primary biogenic structures and diagenetic history of *Timorophyllum wanneri*, Rugosa, Permian, Timor, Indonesia. Assoc. Australasian Pal. Mem. 1, p. 275-288.

Sorauf, J.E. (1984)- Upper Permian corals from Timor and diagenesis. Palaeontogr. Americana 54, p. 294-302.
*(Description of phraetic cements in well-preserved Permian rugosan fauna from Basleo, supposedly from blocks in 'Tertiary deep water wildflysch' (= 'Bobonaro melange')).*

Sorauf, J.E. (2004)- Permian corals of Timor (Rugosa and Tabulate): history of collection and study. Alcheringa 28, 1, p. 157-183.
*(History of collection and study of corals in Permian of Timor began in 1911 with Wanner, Molengraaff and Weber. Biostratigraphy of faunas uncertain, partly because of collection from tectonic melange sequence in Baun to Basleo region, and purchase of fossils from indigenous people. Permian corals from Timor need restudy from stratigraphic sequences in northern 'Fatu' belt of outcrops)*

Sousa Torres, A. & J. Pires Soares (1952)- Quelques contributions geologiques sur le Timor portugais. Report 18th Sess. Int. Geological Congress, Great Britain, 1948, 13, p. 238-239.
*('Some contributions to the geology of Portuguese Timor')*

Spencer, C.J., R.A. Harris & J.R. Major (2016)- Provenance of Permian-Triassic Gondwana Sequence units accreted to the Banda Arc in the Timor region: constraints from zircon U-Pb and Hf isotopes. Gondwana Research 38, p. 28-39.
*(online at: http://geology.byu.edu/Home/sites/default/files/2015_spencer_et_al_-_gr_-_timor_upbhf.pdf)*
*(Zircons from Permian-Triassic 'Gondwana sequence' of Timor yield age distributions with large age peaks at 230-400 Ma and 1750-1900 Ma, similar to zircon age spectra from NE Australia and similar to terranes of N Tibet and Malaysia. 1750-1900 Ma zircon peak also very common in other terranes in SE Asia. Hf analysis of zircon from Aileu Complex in Timor and Kisar shows bimodal distribution at ~300 Ma, probably from bimodal magmatic event, and ties to presence of interbedded Permian mafic and felsic rocks. Similar rock types and isotopic signatures also in Permian-Triassic igneous units throughout Cimmerian continental block. Permian–Triassic of Timor region fill syn-rift intra-cratonic basins that successfully rifted in Jurassic to form NW margin of Australia. This margin first entered Sunda Trench in Timor region at ~7-8 Ma, causing Permo-Triassic rocks to accrete to edge of Asian Plate and emerge in young Banda collision zone)*

Springer, F. (1918)- A new species of fossil *Pentacrinus* from the East Indies. In: Nederlandsche Timor-expeditie, II. Jaarboek Mijnwezen Nederlandsch Oost-Indie 45 (1916), Verhandelingen 1, p. 59-64.
*(New crinoid species Pentacrinus rotiensis from Jurassic of Roti, collected by Brouwer in 1911 from grey shale-marl-limestone succession at Toempa Sili, NW of Bebalain)*

Springer, F. (1926)- Unusual forms of fossil crinoids. Proc. United States Nat. Museum 67, 5, p. 1-137.
*(online at: https://repository.si.edu/handle/10088/15695)*
*(Includes discussions of Timor's diverse crinoid faunas with 189 named species by Wanner (1924). Many of the species abundant on Timor not known elsewhere. Most crinoid fossils broken up. Timor crinoids with remarkably reduced arms. Timorocrinus, the most prominent crinoid of Timor with 11 species, now included in Familiy Poteriocrinidae)*

Sprinkle, J. & J.A. Waters (2013)- New ridged, conical, fissiculate blastoid from the Permian of Timor. J. Paleontology 87, 6, p. 1071-1076.
*(Recent collections in Permian of N slope of Sonmahole (Somohole) Mountain, 3.5 km NE of Manufui, NE part of W Timor, produced first new genus of blastoid described from Timor in 70 years. Corrugatoblastus savilli n.gen., n.sp, is ridged and furrowed, conical, fissiculate blastoid with unusual thecal morphology mimicking small, solitary, rugose coral. Placed in Family Codasteridae)*

Standley, C.E. (2007)- Banda forearc metamorphic rocks accreted to the Australian continental margin: detailed analysis of the Lolotoi Complex of East Timor. M.Sc. Thesis, Brigham Young University, Utah, p. 1-137.
*(online at: http://scholarsarchive.byu.edu/cgi/viewcontent.cgi?article=2303&context=etd)*

Standley, C.E. & R.A. Harris (2006)- Banda forearc metamorphic rocks accreted to the Australian continental margin in Timor: detailed analysis of the Lolotoi Complex of East Timor. EOS Transactions AGU, 87, 52, Fall Mtg. Suppl. *(Abstract only)*
*(E Timor Lolotoi Complex part of group of thin metamorphic klippe, detached from Banda forearc and accreted to NW Australian margin during Late Miocene-Present arc-continent collision. Metamorphic protolith compositions similar to overlying unmetamorphosed tholeiitic basalt and andesite with oceanic arc affinities, and turbidites conglomerates and limestone (=also same as underlying rock?; JTvG). Dominant structure low-angle folding/thrusting to SE. Metamorphic terrain in thrust contact with underlying Gondwana sequence rocks. Mostly unmetamorphosed volcanic and sedimentary cover units found locally in fault contact on edges of the klippen. Ar/Ar ages from amphibolite in W Timor yield ages of 34-39 Ma, interpreted as metamorphism age. Lolotoi Complex part of eastern Great Indonesian Arc, which collapsed in Eocene, incorporated into Banda Arc in Miocene, and accreted to Australian margin in Pliocene- Present)*

Standley, C.E. & R.A. Harris (2009)- Tectonic evolution of forearc nappes of the active Banda arc-continent collision: origin, age, metamorphic history and structure of the Lolotoi Complex, East Timor. Tectonophysics 479, 1-2, p. 66-94.
*(Lolotoi metamorphic complex of E Timor part of Banda forearc, metamorphosed and exhumed in Eocene and accreted to NW Australian continental margin in Late Miocene-Present. Greenschist, graphitic phyllite, quartz-mica schist, amphibolite and pelitic schist dominant metamorphics. Protoliths tholeiitic basalt and basaltic andesite with mixed MORB-oceanic arc affinities. Metapelite schist mostly metasedimentary units with volcanic arc provenance. Peak metamorphism at ~45.4 Ma indicated by Lu-Hf analyses of garnet. Detrital zircon U/Pb age spikes at 663, 120 and 87 Ma, typical of Great Indonesian Arc, distinct from Australian affinity units and indicating deposition and metamorphism after 87 Ma. Deformation phases: 1-4 pre-Oligocene, 5 and 6 related to latest Miocene- Pliocene nappe emplacement deformation. Lolotoi Complex in thrust contact with underlying Gondwana Sequence rocks. 'Asian' volcanic and sedimentary cover units mostly in normal fault contact with metamorphic rocks. Lolotoi Complex of Timor Leste correlative with Mutis Complex of W Timor, both part of Banda Terrane and dispersed fragments of E Great Indonesian Arc)*

Stolley, E. (1929)- Uber Ostindische Jura-Belemniten. Palaontologie von Timor, Schweizerbart, Stuttgart, 16, 29, p. 91-213.

*('On East Indies Jurassic belemnites'. Belemnites from Molengraaff, Jonker and Weber collections from Timor and Roti, with comparisons to belemnites from Misool, Sula Islands, Seram and Yamdena/ Tanimbar. Includes reports of Belemnopsis aucklandica from Timor (Ofu) and Roti (re-assigned to Belemnopsis uhligi-jonkeri group by Stevens, 1964; B. aucklandica from Yamdena, re-described as Belemnopsis stolleyi by Stevens, 1964)*

Suardy, A., Mulhadiono & F. Hehuwat (1987)- Application of remote sensing for hydrocarbon exploration in Timor island, Indonesia. Proc. ACRS, Jakarta, 17, p. 1-15.

Sunarjanto, D. & M.B. Wismaya (1994)- Potensi sumberdaya mineral dan energi di Timor Timur. Proc. 23rd Ann. Conv. Indon. Assoc. Geol. (IAGI), 2, Jakarta, p. 1118-1127.
*(Potential for mining of minerals and energy in East Timor'. Brief review)*

Suwitodirdjo, K. & S. Tjokrosapoetro (1975)- Geologic map of the Atambua Quadrangle, Timor, 1: 250,000. Geol. Res. Dev. Center, Bandung.
*(See also second edition, 1996. Geologic map of eastern part of West Timor)*

Swantry, N. (1989)- Geologi dan struktur geologi daerah Oeolo dan sekitarnya, Kecamatan Miomafo Barat, Kabupaten Timor Tengah Utara, NTT. Ph.D. Thesis, Inst. Technology Bandung (ITB), p. 1-253.
*('Geology and geologic structure in the Oeolo and surrounding areas, W Miomafo, North central Timor')*

Sy, E. (1958)- Die Gattung *Stromatoporidium* Vinassa de Regny aus der Obertrias der Insel Timor (Hydrozoa). Anzeiger Akademie Wissenschaften, Math.-Naturw. Kl., October 1958, p. 163-168.
*('The genus Stromatoporidium Vinassa de Regny from the Upper Triassic of Timor island (Hydrozoa)')*

Tan Sin Hok (1926)- On a young Tertiary limestone on the isle of Rotti with coccoliths, calci and manganese peroxide spherulites. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 29, 8, p. 1095-1105.
*(online at: www.dwc.knaw.nl/DL/publications/PU00015375.pdf)*
*(Early description of Late Tertiary calcareous nannofossils and radiolaria in pelagic limestone with radiolaria and small manganese nodules from S part of Roti island, collected by Brouwer (but radiolaria-manganese limstones probably Cretaceous; Riedel 1953))*

Tappenbeck, D. (1939)- Geologie des Mollogebirges und einiger benachbarter Gebiete (Niederlandisch Timor). Ph.D. Thesis University of Amsterdam, p. 1-105.
*(also in: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands 1940, 1, Noord Hollandsche Publ., Amsterdam, p. 1-105. Good documentation and map of 'Banda terrane' stratigraphy in Mollo mountains area. Pre-Upper Cretaceous crystalline schists mainly in greenschist facies. always heavily folded, brecciated in higher parts. Overlying Palelo series Cretaceous 'flysch' (with basal conglomerate with schist fragments andesitic volcanics; sandstones are greywackes with common volcanic detritus) and Eocene Nummulites and Pellatispira limestones. NW of Mollo metamorphic massif Permian-Triassic Kekneno series in flysch facies, probably sourced from metamorphic terrane. In SE part of Mollo Mts isoclinally folded 'Sonnebait Series' Mesozoic in bathyal facies, incl. U Cretaceous pelagic Globotruncana limestone and marls. Also Triasic 'Fatu Limestones', etc.)*

Tappenbeck, D. (1940)- Geologie des Mollogebirges und einiger benachbarter Gebiete (Niederlandisch Timor). In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands 1940, 1, Noord Hollandsche Publ., Amsterdam, p. 1-105.
*(Same as Tappenbeck, 1939)*

Tate, G. (2014)- Structural deformation, exhumation and uplift of the Timor fold-thrust belt. Ph.D. Thesis, Princeton University, p. 1-251.
*(online at: http://dataspace.princeton.edu/jspui/handle/88435/dsp01bk128d120)*
*(Thermochronology and micropaleontology reveal extreme heterogeneity in uplift and exhumation across Timor fold-thrust belt. Before synorogenic basins experienced uplift from >1 km below sea level at 3.4-3.0 Ma, other areas a few 10's of km away were emergent and exhuming rapidly. Balanced cross-sections document at*

*least 326-362 km of shortening of Timor since at least 7.3-7.8 Ma, and 215-229 km of buoyant Australian continental margin subducted below Banda forearc)*

Tate, G., N. McQuarrie, R.R. Bakker, D.J.J.van Hinsbergen & R.A. Harris (2010)- Active arc-continent accretion in Timor-Leste: new structural mapping and quantification of continental subduction. AGU 2010 Fall Meeting, San Francisco, Abstract T51A1996T, 1p. *(Abstract only)*
*(New mapping in Timor-Leste provided view of structural repetition of 'Australian' continental sedimentary units below overriding Banda Arc material. Transect Laclo-Barique exposes deep erosional level, showing 3 regional NNE-striking thrust faults with ~3 km spacing, repeating Aitutu-Cribas stratigraphy. Jurassic Wailuli shales and Bobonaro melange act as upper decollement between this duplex and Lolotoi metamorphic basement of Banda Arc. New balanced structural cross-section produces minimum shortening of 320km)*

Tate, G.W., N. McQuarrie, D.J.J. Hinsbergen, R.R. Bakker, R. Harris & H. Jiang (2015)- Australia going down under: quantifying continental subduction during arc-continent accretion in Timor-Leste. Geosphere 11, 6, p. 1860-1883.
*(online at: http://www.pitt.edu/~nmcq/Tate_etal_2015_geosphere.pdf)*
*(Timor island is uplifted accretionary complex of collision of Banda arc with Australian continental margin. Duplexing of 2-km-thick Australian continental strata built majority of structural elevation of Timor orogen. Balanced cross sections suggest 326-362 km of shortening across Timor and 215-229 km of subduction of continental lithosphere below Banda forearc, showing considerable amounts of continental lithosphere can be subducted while accreting only thin section of uppermost crust. Continental subduction may have been favorable because of fast subduction rates and old oceanic crust at Australian margin)*

#Tate, G.W., N. McQuarrie, D.J.J. Hinsbergen, R.R. Bakker, R. Harris, S. Willett, P.W. Reiners, M.G. Fellin, M. Ganerod & J.W. Zachariasse (2014)- Resolving spatial heterogeneities in exhumation and surface uplift in Timor-Leste: constraints on deformation processes in young orogens. Tectonics 33, 6, p. 1089-1112.
*(online at: http://onlinelibrary.wiley.com/doi/10.1002/2013TC003436/epdf)*
*(In Timor-Leste exhumed metamorphic rocks and piggyback deepwater synorogenic basins only 10's of km apart. Foraminifera in two deepwater synorogenic basins suggest basin uplift from depths of 1-2 km to 350-1000m between 3.35 and 1.88 Ma. Thermochronologic sampling in mountains between these basins: (1) reset age of ~7.13 Ma in Aileu high-grade belt suggests ~9-16 km of exhumation since that time; (2) zircon (U-Th)/He samples reset ages in Aileu Complex 4.4- 1.5 Ma, suggesting exhumation rates of 1-3 mm/yr with 2.7-7.8 km of exhumation since these ages; (3) Apatite (U-Th)/He ages in Gondwana Sequence 5.5- 1.4 Ma, suggesting 1-2 km of exhumation. Distinct increase in amount of exhumation in E Timor, from ~1-2 km in south to 3-6 km in North. Variability in surface uplift and exhumation possibly caused by ongoing subsurface duplexing driven by subduction and underplating of Australian continental crust)*

Tate, G.W., N. McQuarrie, H. Tiranda, D.J.J. Hinsbergen, R. Harris, W.J. Zachariasse, M.G. Fellin, P.W. Reiners & S.D. Willet (2017)- Reconciling regional continuity with local variability in structure, uplift and exhumation of the Timor orogen. Gondwana Research 49, p. 364-386.
*(New constraints on history of uplift, exhumation and shortening of W Timor. Foreland thrust stack of Jurassic-Miocene Australian margin strata and hinterland antiformal stack of Permo-Triassic Australian continental units duplexed below Banda Arc lithosphere. Piggyback Central Basin with deepwater synorogenic deposition from 5.57-5.53 Ma, uplift from lower-m bathyal depths at 3.35-2.58 Ma, and uplift from m-u bathyal at 2.58-1.30 Ma. Hinterland Permo-Triassic with apatite (U-Th)/He ages of 0.33-2.76 Ma, apatite FT ages of 2.19-3.53 Ma. Youngest or most reset in center of antiformal stack. Minimum of 300km of shortening including 210km of Australian continental subduction below Banda forearc. Timor-Leste similar timing of collision, etc.)*

Tatzreiter, F. (1980)- Neue trachyostrake Ammonoideen aus dem Nor (Alaun 2) der Tethys. Verhandlungen Geol. Bundesanstalt Wien 1980, 2, p. 123-159.
*(online at: www.geologie.ac.at/filestore/download/VH1980_123_A.pdf)*
*('New trachyostrake ammonoids from the Norian of the Tethys'. New Late Triassic (columbianus Zone) ammonites from exotic, pink blocks of 'Hallstatt Limestone' from Bihati River Baun, SE of Kupang, W Timor)*

Tatzreiter, F. (1981)- Ammonitenfauna und Stratigraphie im hoheren Nor (Alaun, Trias) der Tethys aufgrund neuer Untersuchungen in Timor. Denkschrift Akademie Wissenschaften, Math.-Naturw. Kl. 121, p. 1-142.
*(online at: www.landesmuseum.at/pdf_frei_remote/DAKW_121_0001-0142.pdf)*
*('Ammonite fauna and stratigraphy of the upper Norian (Alaun, Triassic) of the Tethys, based on new investigations in Timor'. Revision of abundant Norian ammonoids from blocks of condensed, pelagic U Triassic limestone in Bobonaro olistostrome at Bihati River, Baun, SW Timor. Common genera Arcestes, Rhacophyllites, Cladiscites, etc.. Columbianus zone 1m thick. M Norian fauna 90 species, 29 genera. Two subzones: Himavites hogarti (Alaun2) and Halorites macer (Alaun 3). Looks like typical 'Hallstatt facies' of European Alps; probably seamount deposit)*

Tatzreiter, F.R. (1983)- Die trachyostraken Ammonoideen der *Himavatites columbianus*-zone (hoheres Mittelnor) von Timor (Indonesien). Doct. Thesis, University of Wien, p. *(Unpublished)*
*('The trachyostrace ammonoids of the Himavites columbianus Zone (upper M Norian) from Timor, Indonesia')*

Teixeira, C. (1952)- Notas sobra la geologia e la tectonica de Timor. Estudios Coloniais, Revista Escola Sup. Colonial, Lisbon, 3, p. 85-154.
*('Notes on the geology and tectonics of Timor'. On Portuguese Timor; in Portuguese)*

Tesch, P. (1916)- Jungtertiare und quartare Mollusken von Timor- I. In: J. Wanner (ed.) Palaeontologie von Timor 5, Abhandl. 9, Schweizerbart, Stuttgart, p. 1-70.
*('Late Tertiary and Quaternary molluscs from Timor- part 1'. Mainly taxonomic descriptions of molluscs collected by Wanner, Molengraaf 1909, 1911 expeditions. Faunas dominated by gastropods, 113 species, 17 new. With table listing localities; no map)*

Tesch, P. (1920)- Jungtertiare und quartare Mollusken von Timor-II. In: J. Wanner (ed.) Palaeontologie von Timor 8, 14, p. 41-121.
*('Late Tertiary and Quaternary molluscs from Timor- part 2'. Continuation of above monograph, species 114-233. In stratigraphic conclusions samples grouped in 3 categories: Late Miocene?-Early Pliocene, Late Pliocene- Early Pleistocene and Pleistocene)*

Tesch, P. (1923)- Trilobiten aus der Dyas von Timor und Letti. Palaeontologie von Timor 12, 21, p. 123-132.
*(Trilobites from the Permian of Timor and Leti'. Phillipsia sp. and Neoproetus indicus n.sp., collected by Wanner, Molengraaff, Jonker et al. Trilobites relatively rare and poorly preserved in Timor Permian)*

Tharalson, D.B. (1984)- Revision of the Early Permian ammonoid family Perrinitidae. J. Paleontology. 58, 3, p. 804-833.
*(Includes descriptions of Timor Permian perrinitid ammonoids. Species described by De Roever from Timor as Perrinites waageni was renamed Properrinites deroeveri by Gerth (1950) here called Properrinites cumminsi (U Sakmarian). Also description of Artinskian Paraperrinites subcumminsi (Haniel) (originally Cyclolobus subcumminsi) from Bitauni)*

'T Hoen, C.W.A.P. & L.J.C. van Es (1928)- De opsporingen naar delfstoffen op het eiland Timor. Jaarboek Mijnwezen Nederlandsch-Indie 54 (1925), Verhandelingen 2, p. 1-80.
*(Mineral exploration of W Timor with negative results, except for some subeconomic copper deposits associated with serpentinites. With chapter on mud volcanoes, present across most of W Timor but particularly common in areas of Triassic flysch. Some cones up to 90m high and some with flammable gas seepage. Clasts in mud volcanoes include virtually all Timor formations, incl. Permian, Triassic, Jurassic and crystalline schists. Includes 1:250,000 geological overview map of W Timor by Van Es)*

Thompson, M.L. (1949)- The Permian fusulinids of Timor. J. Paleontology 23, 2, p. 182-192.
*(Fusulinid limestones collected by Brouwer expedition in 1937 in W Timor contain five species of fusulinids, incl. Schwagerina brouweri n. sp. All appear to indicate Early Permian, Leonardian or older age. Fusulinids of Timor not similar to widespread complex fusulinid faunas in other parts of E Hemisphere)*

Tichy, G. (1979)- Gastropoden aus den Triassischen Hallstatterkalk-Blocken von West-Timor (Indonesien). Beitr. Palaontologie Osterreich. 6, p. 119-133.
*(online at: www.zobodat.at/pdf/Beitr-Palaeontologie_6_0119-0133.pdf)*
*('Triassic Gastropods from exotic Halstatt limestone blocks of West Timor'. SW Timor Bihati River limestones with abundant ammonites and rare gastropods. Gastropods interpreted as deep water, of M-U Norian and Carnian ages. Incl. Pleurotamaria, Epulotrochus strobiliformis, Naticopsis, Hologyra, Neritopsis, Natica klipsteini and Allocosmia. Species identical to Hallstat Limestone in Austria)*

Tjia, H.D. (1961)- *Anatomites brochiiformis* Welter var. *rotundata*. Proc. Inst. Teknologi Bandung 1, 1, p. 5-23.
*(Brief description of Carnian ammonite from Triassic cephalopod limestone of Basleo, ~5km NE of Niki-Niki)*

Tjokrosapoetro, S. (1978)- Holocene tectonics on Timor Island, Indonesia. Bull. Geol. Survey Indonesia 4, 1, p. 49-63.
*(Active Holocene tectonism. Uplift at W end of island 1 mm/yr, higher in central part. >15 active mud volcano fields mapped in West Timor, mainly associated with young Central Basin or Kolbano Complex accretionary prism. Some mud volcanoes produce saline water, others have flammable gas)*

Tjokrosapoetro, S. (1983)- Late volcanic activity in Timor Island. Geol. Res. Dev. Centre (GRDC), Bandung, 10p.

Tjokrosapoetro, S. (1993)- Indication of initial stage of volcanic activity on Timor. Bull. Marine Geol. Inst. Indonesia 8, 2, p. 23-44.
*(Hot sulphuric smoke near Ajobaki (2 km NW of Kapan, 30 km N of Soe) in January 1983 and fumaroles and sulphuric hot springs may suggest early stage of volcanic activity. Timor is part of non-volcanic Outer Banda Arc, with last volcanic activity of inner Banda Volcanic Arc in Late Miocene (5.9-6.2 Ma). Eight million years from now Timor will probably be active volcanic island, due to subduction N of Wetar since 3 Ma)*

Tjokrosapoetro, S. & H.D. Tjia (1978)- Gejala-gejala tektonik Kwarter di Timor. Geologi Indonesia 5, 1, p. 11-26.
*('Quaternary tectonic activity on Timor')*

Tobing, S.L. (1989)- The geology of East Timor. M. Phil. Thesis, London University, p. 1-129. *(Unpublished)*
*(Mainly revised geologic map of E Timor, based on photogeologic studies)*

Torre de Assuncao, C. (1956)- Notas da petrografia timorense. Garcia de Orta 4, 2, p. 265-278.
*('Notes on the petrography of Timor'. In Portuguese)*

Tozer, E.T. (1994)- Significance of Triassic stage boundaries defined in North America. In: J. Guex & A. Baud (eds.) Recent developments on Triassic stratigraphy. Memoires de Geologie (Lausanne) 22, p. 155-170.
*(online at: www.unil.ch/ )*
*(Includes record and description of M Triassic (E Anisian) ammonites Keyserlingites angustecostatus, Paracrochordiceras welteri n.sp. and Leiophyllites from block of 'Hallstatt Limestone' facies in olistostrome on Timor(Fatoe Nefakoko near Soeli, collected by Molengraaff Timor Expedition 1911, now in Delft University collection) (first described by Welter 1915). Associated with conodonts Chiosella timorensis and Gladiogondolella tethydis (Orchard 1994))*

Ueno, K. (2006)- The Permian antitropical fusulinoidean genus *Monodiexodina*: distribution, taxonomy, paleobiogeography and paleoecology. J. Asian Earth Sci. 26, p. 380-404.
*(Review of 'subtropical', late E Permian fusulinid genus Monodiexodina from 33 areas, incl. several Timor occurrences, all in middle part of Maubisse Fm. Type species of Monodiexodina is Schwagerina wanneri Schubert 1915 first described from Timor. Monodiexodina-bearing areas can be restored to either N or S middle latitudes, suggesting genus is paleobiogeographically anti-tropical taxon. Generally found in monotypic, crowded manner in sandy sediments with uni-directionally aligned shells. Long-ranging 'mid-Permian', Artinskian- E Midian (=Capitanian))*

UN ESCAP (2003)- Geology and mineral resources of Timor-Leste. Atlas of Mineral Resources of the ESCAP region 17, United Nations, p. 1-143.

UN ESCAP (2003)- Geology of Timor-Leste. In: Atlas of Mineral Resources of the ESCAP region 17, United Nations, p. 11-27.
*(online at: www.unescap.org/esd/water/publications/mineral/amrs/vol17/)*
*(Rather general East Timor geology overview)*

Untung, M., Sudarwono & T. Padmawijaya (1991)- Gravity anomalies of Timor Island, Indonesia and the Australian continental margin. Proc. Ann. Conv. Indon. Assoc. Geoph. (HAGI), p.

Utoyo, H. & S. Permanadewi (1994)- Perbandingan pentarikhan K-Ar pada hornblende dan biotit dalam batuan malihan Formasi Aileu, Timor Timur. J. Geologi Sumberdaya Mineral 4, 32, p. 13-18.
*(' Comparison of K-Ar dating results in hornblende and biotite from Aileu Fm metamorphic rocks, E Timor'. Radiometric dating of samples from Aileu Fm along coast E of Dili, E Timor. Age of peak metamorphism based on hornblende from amphibolite (3 samples) is 7.7 Ma. Age of biotite from biotite schist is 5.7 Ma, reflecting time of cooling)*

Van Andel, T. (1948)- Some remarks on *Nummulites javanus* Verb. and *Nummulites perforatus* de Montf. Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 51, 8, p. 1013-1023.
*(online at: www.dwc.knaw.nl/DL/publications/PU00018566.pdf)*
*(Study of Nummulites perforatus from Mollo, W Timor, collected by Tappenbeck. Nummulites javanus (Verbeek) considered to be younger synonym of N. perforatus)*

Van den Boogaard, M. (1987)- Lower Permian conodonts from western Timor (Indonesia). Proc. Kon. Nederl. Akademie Wetenschappen, ser B, 90, 1, p. 15-39.
*(Lower Permian conodonts from samples collected by Jonker expedition near Bitauni in 1916 and SW Mutis region by De Roever in 1937. Important constituent of fauna is Vjalovognathus shindyensis)*

Van Es, L.J.C. (1921)- Inlandsche koperertsontginningen op Timor. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap 38, p. 808-810.
*('Copper ore exploitation by natives on Timor'. Small occurrences of copper (native copper, cuprite) from red and grey shales and Cretaceous limestone in area of Noil Toko, several localities of Amanubang and in N Belu)*

Van Eykeren, H. (1942)- *Microblastus* gen. nov. und einige andere neue permische Blastoideen von Timor. Neues Jahrbuch Mineral. Geol. Pal., Beilage-Band. 86B, p. 282-298.
*('Microblastus new genus and other new Permian blastoids from Timor'. In German. New species of blastoids from the Brouwer/ University of Amsterdam Timor collection)*

Van Gorsel, J.T. (2012)- Ophiolite obduction on Leti Island, as described by Molengraaff and Brouwer (1915): implications for age and genesis of metamorphic complexes in the Outer Banda Arc, Eastern Indonesia. Berita Sedimentologi 24, p. 24-38.
*(online at: www.iagi.or.id/fosi/files/2012/07/FOSI_BeritaSedimentologi_BS-24_July2012_S1.pdf)*
*(Descriptions of geology of Leti Island, NE of Timor by Molengraaff et al. (1915) suggest 'ophiolite obduction', (metamorphism of continental crustal material below ultrabasic mantle material in subduction zone). Folded E-M Permian sediments and basic volcanics in S of island gradually increase in metamorphic grade towards serpentinite massif in N. Serpentinite massif is overlain by Latest Oligocene shallow marine limestone with reworked serpentinite and metamorphics, suggesting metamorphism/ophiolite obduction on Leti island took place in post-Early Permian (therefore not Australian continental crust basement) but before latest Oligocene (i.e. too old to be connected with Late Neogene Banda arc- NW Australian continent collision). Metamorphic complexes on Timor and other islands of Outer Banda Arc may all have similar origin, possibly representing single, extensive Cretaceous-age collisional/ subduction zone, formed along Sundaland margin)*

Van Marle, L.J. (1991)- Late Cenozoic palaeobathymetry and geohistory analysis of Central West Timor, Eastern Indonesia. Marine Petroleum Geol. 8, 1, p. 22-34.
*(W Timor Central Basin with ~550m or more Mid-Pliocene- E Pleistocene deep marine clastics over E Pliocene pelagic calcilutites ('Batu Putih Fm'). E Pliocene paleo water depth probably ~2000m. Two uplift episodes(1) 2.4- 1.6 Ma, corresponding to arrival of Australian continental slope in subduction system; (2) larger uplift between 250 ka- today, reflects arrival of Australian continental shelf at Outer Banda Arc thrust belt)*

Van Voorthuysen, J.H. (1940)- Geologische Untersuchungen im Distrikt Amfoan (Nordwest Timor). In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands 1937, 2, Noord Hollandsche Publ. Co., Amsterdam, p. 345-367.
*('Geological investigations in the Amfoan District, NW Timor'. Reports a.o. common dark grey Eocene limestone with Nummulites, unconformable on crystalline schists of Mosu and Nefoneu (incl. Eocene conglomerate with rounded schist and volcanic clasts), closely associated with widespread Eocene andesitic volcanics. Also blocks of Lower Miocene reefal limestone with Spiroclypeus and Miogypsina, always found in proximity to crystalline schists, and with clasts of schists and volcanics)*

Van West, F.P. (1941)- Geological investigations in the Miomaffo Region, Netherlands Timor. Ph.D. Thesis University of Amsterdam, p. 1-130. *(Unpublished)*
*(Miomaffo Massif of W Timor structurally complex area, with 3 tectonic units: (1) 'Schist-Palelo Complex' of amphibolite-dominated metamorphics associated with ultrabasic lherzolites, serpentinites, gabbros, etc., overlain by Cretaceous 'Lower Palelo' radiolarian cherts, U Cretaceous U Palelo greywackes-volcanoclastics with pebbles of schists and serpentinite, E-M Eocene Alveolina-Nummulites limestones associated with volcanics, Late Eocene Pellatispira limestones without volcanics, unconformably overlain by E Miocene limestones with Spiroclypeus and Miogypsina (with basal conglomerate with metamorphics, etc.), Globigerina limestone and increasing volcanic rocks upsection (Schist-'Palelo' stratigraphy resembles that of SE Kalimantan, SW Sulawesi, Sumba); (2) 'Fatu Complex' U Triassic reefal-oolitic limestones, some rich in Norian brachiopod Misolia aspera (with conglomeratic beds with igneous rocks); (3) 'Sonnebait Series' Cretaceous pelagic Globotruncana limestones and radiolarian cherts. Young Tertiary Globigerina limestones and tuffs unconformable over all older formations. Large overhrusts formed in pre-Miocene time, with mountain-building forces peaking in Oligocene, but fault deformation continuing to recent time)*

Van West, F.P. (1941)- Geological investigations in the Miomaffo Region, Netherlands Timor. In: H.A. Brouwer (ed.) Geological expedition of the University of Amsterdam to the Lesser Sunda Islands in the easternpart of the Netherlands East Indies 1937, III, p. 1-131.
*(Same as Van West (1941) above)*

Villeneuve, M., H. Bellon, R. Martini, A. Harsolumakso & J.J. Cornee (2013)- West Timor: a key for the eastern Indonesian geodynamic evolution. Bull. Soc. Geologique France 184, 6, p. 569-582.
*(W Timor not simple accretionary prism, but five superimposed structural units. Present-day structure result of three main tectonic events in Late Oligocene, Late E Pliocene and Late Pliocene-E Pleistocene.Geodynamic evolution: (1) block detached from Gondwana (unit 2) and drifted to Asiatic margin until Late Oligocene when it collided with Asiatic active margin (unit 3); (2) New block formed by units 2 and 3 drifted S in Miocene- E Pliocene until collision with Australian margin in Late E Pliocene; (3) Australian and Timor blocks moved together to NNE in Late Pliocene until collision with Banda fore-arc (unit 4; (5) In Pleistocene Timor island capped by 'autochthon' (unit 5) and (5) Quaternary? N thrusting of Banda volcanic arc over S Banda basin. Timor key area for building this geodynamical scenario of Indonesia)*

Villeneuve, M., J.J. Cornee, A. Harsolumakso, R. Martini & L. Zaninetti (2005)- Revision stratigraphique de l'Ile de Timor (Indonesie orientale). Eclogae Geol. Helvetiae 98, 2, p. 297-310.
*(online at: https://www.e-periodica.ch/digbib/view?pid=egh-001:2005:98#316)*
*('Stratigraphic revision of Timor island'; in French. Many stratigraphic scales proposed for Timor due to tectonic complexity and facies variability. Timor comprises 6 units, linked to episodes of geological history. Evolution starts with Jurassic break-up of block from Gondwana (para-allochthonous unit), followed by Oligo-Miocene collision with Asian volcanic arc (allochthonous and sub-autochthonous units). By Late Miocene this*

*assemblage of blocks separated from Asia during S Banda Sea opening (sub-autochthonous unit), then collided with N Australian margin in M Pliocene (Australian platform and Kolbano Group). Since then Timor Island part of Australian N margin).*

Villeneuve, M., J.J. Cornee, R. Martini & L. Zaninetti (2004)- Nouvelle hypothese sur l'origine des formations geologiques de l'ile de Timor (Sud-Est Asiatique). Comptes Rendus Geoscience 336, 16, p. 1511-1520.
*(Stratigraphy/ tectonics suggest Timor and S Sulawesi part of same continental block. Main deformation on Timor and Sulawesi is Oligocene. Timor separated in Late Miocene during opening of S Banda Basin and became part of Late Miocene arc that collided with Australia at end of E Pliocene, 3.5 Ma)*

Villeneuve, M., A.H. Harsolumakso, J.J. Cornee & H. Bellon (1999)- Structure of West Timor (East Indonesia) along a north-south cross section. Geologie Mediterraneenne 26, p. 127-142.
*(Structural transect of C part of W Timor suggests tow main tectonic events: (1) Oligocene thrusting of allochton units over Australian continental margin; (2) E Pliocene collision between Banda island arc and previous Timor forerc units, and responsible for present imbricated structures. Two extensional periods: Late Oligocene or earliest Miocena and Late Pliocene)*

Vinassa de Regny, P. (1915)- Triadische Algen, Spongien, Anthozoen und Bryozoen aus Timor. Palaontologie von Timor, Schweizerbart, Stuttgart, 4, 8, p. 75-118.
*(Late Triassic algae (Solenopora), sponges (Molengraaffia regularis, Steinmannia), corals (incl. species of Thecosmilia, Isastraea, Montlivaltia), pachyporidae (Lovcenipora), calcareous algae (Solenopora triasina = Parachaetes according to Flugel 1975), stromatoporidae (Stromatoporidium) and bryozoa, mainly from reefal 'Fatu Limestones' from westernmost Timor and Pualaca area, E Timor (Nine coral species in common with alpine Zlambachschichten; Diener 1916 (=Rhaetian; JTvG))*

Vita-Finzi, C. & S. Hidayat (1991)- Holocene uplift in West Timor. J. Southeast Asian Earth Sci. 6, 3-4, p. 387-393.
*(Holocene uplift rates <0.3mm/yr, i.e. much lower than Late Pliocene rates, suggesting rapid, but short-lived uplift of Timor in Late Pliocene)*

Von Arthaber, G. (1926)- Ammonoidea leiostraca aus der oberen Trias von Timor. Jaarboek Mijnwezen Nederlandsch-Indie 55 (1926), Verhandelingen 2, p. 1-173.
*('Leiostraca ammonites from the Upper Triassic of Timor'.110 species of Carnian- Norian ammonites described from Timor (66% endemic, 57 species in common with Mediterranean/ Tethys bioprovince). Mainly collected by Jonker 1916 expedition)*

Von Bulow, E. (1915)- Orthoceren und Belemnitiden der Trias von Timor. In: J. Wanner (ed.) Palaontologie von Timor 4, 7, Schweizerbart, Stuttgart, p. 1-72.
*('Orthocerids and belemnites from the Triassic of Timor'. Mainly on taxonomy of straight nautiloids (Orthoceras spp.) and belemnites (Carnian-Norian Aulacoceras, Atractites spp. and Dictyoconites spp.) from Molengraaff, Wanner 1909-1911 expeditions. Triassic belemnites known from Timor, Savu and Roti. Carnian-Norian belemnites in bright limestones, commonly with manganese coating)*

Von Huene, E. (1935)- Mosasaurier-Zahne von Timor. Zentralblatt Mineral. Geol. Palaont., B, 10, p. 412-416.
*('Mosasaurus teeth from Timor'. U Cretaceous Mosasaurus teeth Globidens? timorensis n.sp. from red clays above Triassic Halobia Limestone in Noil Tobe near Nikiniki (collected by Wanner) and Oe Batok II near Baoen (Baung, SW Timor (from Jonker 1916 Expedition collection Delft; not sure if correct; Oe Batok II is ~2m large block of Triassic cephalopod/ heterastrid limestone). Both from 'Niki Niki- Baung zone' of Wanner (1913). The only known Mosasaurus teeth from Indonesia)*

Von Huene, E. (1936)- Ichthyosaurierreste aus Timor. Zentralblatt Mineral. Geol. Palaont., B 8, p. 327-334.
*('Ichthyosaur remains from Timor'. Description of ichthyosaur marine reptile remains from E-M Triassic of Noil Bunu, W Timor (possibly Cymbospondylus; Sander & Mazin 1993))*

Von Huene, F. (1931)- Ichthyosaurier von Seran und Timor. Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 66, B, p. 211-214.
*(Triassic or Jurassic Ichthyosaurus vertebrae from Bula, E Seram, and Basleo, W Timor)*

Von Koenigswald, G.H.R. (1967)- An Upper Eocene mammal of the family Anthracotheriidae from the island of Timor. Proc. Kon. Nederl. Akademie Wetenschappen B70, 5, p. 529-533.
*(Description of Eocene Hippopotamus-like skull fragment and upper molar from W of Laharus, W Timor, named Anthracothema verhoeveni n. sp.. Genus also known from Eocene of Birma, S China and W Borneo and is first indication of Eocene mammalian fauna in E Indonesia. (Belongs in genus Anthracotherium; Ducrocq 1996). It is of Asian affinity, not Australian, suggesting proximity of this part of Timor to SE Asia/Sundaland in Eocene)*

Von Schouppe, A. & P. Stacul (1955)- Die Genera *Verbeekiella* Penecke, *Timorphyllum* Gerth, *Wannerophyllum* n. gen., *Lophophyllidium* Grabau aus dem Perm von Timor. Palaeontographica Suppl. IV, Beitr. Geologie Niederlandisch-Indien 5, 3, p. 95-196.
*(Descriptions of Permian solitary corals, mainly from Basleo area, W Timor, from where 12,000 specimens were collected in 1927. Distinguished 17 species, 10 of which new (Assemblages now generally regarded as M Permian, deeper water and cooler climate 'Cyathaxonia faunas' or 'Lytvolasma faunas'; JTvG))*

Von Schouppe, A. & P. Stacul (1959)- Saulchenlose Pterocorallia aus dem Perm von Indonesisch Timor (mit Ausnahme der Polycoelidae). Eine morphogenetische und taxonomische Untersuchung. Palaeontographica Suppl. IV, Beitr. Geologie Niederlandisch-Indien 5, 4, p. 197-359.
*(Paleontological descriptions of Timor Permian solitary corals)*

Wahyudiono, J., I. Safri, A. Sudradjat & H. Panggabean (2016)- Geokimi batuan gunungapi di Pulau Timor bagian Barat dan implikasi tektonikya. J. Geologi Sumberdaya Mineral 17, 4, p. 241-252.
*(online at: http://jgsm.geologi.esdm.go.id/index.php/JGSM/article/view/24/21)*
*('Geochemistry of the volcanic rocks of West Timor and its tectonic implications'. Geochemistry of basaltic rocks from Fatu River (interfinger with Permian Maubisse Fm limestone) suggests Oceanic Island Basalt. Oligo-Miocene metabasalt from Mutis Complex calk-alkaline, island arc volcanics. Metan River and Atauro Island (Banda Arc) subalkaline/ tholeitic volcanics)*

Wang, H.C. (1947)- Notes on some Permian rugose corals from Timor. Geol. Magazine 84, 6, p. 334-344.
*(Description of Permian solitary corals from 4 W Timor localities (Soempek, Neoepantoekak, Toenioen Eno, Basleo) in collection of British Museum of Natural History (Lytvolasma, Amplexicarina, Timorphyllum, Lophophyllidium, Verbeekiella, etc.) Excellent preservation. Mainly review of works of Gerth, Koker, Schindewolf)*

Wanner, C. (1922)- Die Gastropoden und Lamellibranchiaten der Dyas von Timor. In: J. Wanner (ed.) Palaeontologie von Timor, Stuttgart, 11, 18, p. 1-82.
*('The gastropods and bivalves from the Permian of Timor'. Description of Permian bivalve material collected by Wanner and Molengraaff in 1909-1911, mainly from Basleo area. High diversity faunas (61 gastropod, 25 bivalve species), but low abundance compared to other fossil groups. Timor richest in Capulids of all known Permian faunas. Includes presence of Atomodesma spp. from various localities (genus often regarded as cold-water 'Gondwanan'; JTvG))*

Wanner, C. (1940)- Neue Permische Lamellibranchiaten von Timor. In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands 1937, 2, Noord Hollandsche Publ. Co., Amsterdam, p. 369-395.
*('New Permian bivalves from Timor'. Addendum to 1922 paper, based on new material collected by Ehrat in 1927 and Brouwer/ De Roever 1937 expedition, mainly from Basleo area, W Timor. Incl. Atomodesma in flysch W of Kasleo in Kekneno area)*

Wanner, C. (1942)- Neue Beitrage zur Gastropoden fauna des Perm von Timor. In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands, etc., 1937, 4, Noord Hollandsche Publ. Co., Amsterdam, p. 137-203.
*(Permian gastropods from Timor 70 species, one of richest in world. Almost all new species, only 3 species known from elsewhere (Pakistan, Sicily, China))*

Wanner, J. (1907)- Triaspetrefakten der Molukken und des Timorarchipels. Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 24, p. 159-220.
*('Triassic fossils from the Moluccas and Timor Archipelago'. Late Triassic molluscs, corals, ammonites faunas from Misool, Seram and Timor-Roti-Savu (generally deeper water facies, but potentially similar 'alpine' character with mainly Halobia, Daonella, but also 'Pacific' mollusc Pseudomonotis ochotica). Timor/Roti/ Savu Triassic reminiscent of N Sumatra Upper Triassic described by Volz, 1899. First author to recognize Alpine/ Tethyan affinities of the Late Triassic bivalves and ammonites of Seram and Timor)*

Wanner, J. (1910)- Uber eine merkwurdige Echinodermenform aus dem Perm von Timor. Zeitschrift Induktive Abstammungs Vererbungslehre 4, p. 123-142.
*('On a remarkable echinoderm from the Permian of Timor'. Detailed description of anatomy of Permian blastoids Timorechinus spp. from E of Nikiniki and comparison to Schizoblastus permicus)*

Wanner, J. (1911)- Triascephalopoden von Timor und Rotti. Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 32, p. 177-196.
*('Triassic cephalopods from Timor and Roti'. Early paper on Upper Triassic ammonites (Meekoceras indoaustralicum n.sp., M. timorensis n.sp., Flemingites timorensis n.sp., Cladiscites) and ribbed belemnite Aulacoceras (A. timorense n.sp.))*

Wanner, J. (1912)- *Timorocrinus* nov. gen. aus dem Perm von Timor. Zentralblatt Mineral. Geol. Palaont. 19, p. 599-605.
*('Timorocrinus new genus from the Permian of Timor'. New genus name for Timorechinus miriabilis from Molengraaff collection. No locality information, presumably Basleo)*

Wanner, J. (1913)- Geologie von West Timor. Geol. Rundschau 4, 2, p. 136-150.
*(online at: https://www.digizeitschriften.de/dms/img/?PID=GDZPPN000450677)*
*(First overview of geology and stratigraphy of western part of West Timor, based on Wanner, Welter and Haniel 1909 fieldwork. Probably first paper to suggest large-scale, Alpine-type overthrusting on Timor (Molengraaff idea around same time))*

Wanner, J. (ed.) (1914-1929)- Palaontologie von Timor. Schweizerbart Verlag, Stuttgart, 16 vols.
*('Paleontology of Timor'. Series of beautifully illustrated paleontological monographs on Timor fossils by German paleontologists, published over 15 year period. Some issues still available from original publisher)*

Wanner, J. (1916)- Die permischen Echinodermen von Timor I. In: J. Wanner (ed.) Palaontologie von Timor 6, 11, Schweizerbart, Stuttgart, p. 1-329.
*('The Permian echinoderms from Timor-1'. Major monograph on crinoids of Timor, collected in 1909 and 1911. Total 123 species (105 new) of 44 genera (28 new))*

Wanner, J. (1920)- Ueber armlose Krinoiden aus dem jungeren Palaeozoikum. Verhandelingen Geologisch-Mijnbouwkundig Genootschap Nederland Kol., Geol. Serie 5, 2, p. 21-36.
*('On arm-less crinoids from the Late Paleozoic'. Among rich Permian crinoid assemblages of Timor are 'armless' forms like Indocrinus, Sundacrinus, Embryocrinus, Hypocrinus, etc.. Also one-armed species Monobrachiocrinusgranulatus n.sp.))*

Wanner, J. (1920)- Ueber einige palaeozoische Seeigelstacheln (*Timorocidaris* gen. nov. und *Bolboporites* Pander). Proc. Kon. Nederl. Akademie Wetenschappen, Amsterdam, 22, 7-8, p. 696-712.
*(online at: www.dwc.knaw.nl/DL/publications/PU00012020.pdf)*

*('On some Paleozoic sea urchin spines (Timorocidaris gen. nov. and Bolboporites Pander)'. In German. Timorocidaris material from Permian of Basleo, Timor)*

Wanner, J. (1923)- Die permischen Krinoiden von Timor. In: H.A. Brouwer (ed.) 2e Nederlandsche Timor-Expeditie 1916, II, Jaarboek Mijnwezen Nederlandsch Oost-Indie 50 (1921), Verhandelingen 3, p. 1-348.
*('The Permian crinoids of Timor'. Second of Wanner's major monographs on Timor crinoids. Number of species increased to 239 in 75 genera. Half of all crinoid species are poteriocrinids, with dominant genera Timorocrinus, Ceriocrinus, Parabursacrinus, etc. Most Timor crinoids are from reddish marls and red brown tuffs and interbedded limestones (=Maubisse Fm), with richest occurrences in M Permian of Basleo area near Niki-Niki. Different assemblages in Amarassi region of SW Timor suggesting slightly younger age)*

Wanner, J. (1924)- Die permischen Echinodermen von Timor-II. Palaeontologie von Timor 14, 23, p. 1-81.
*('The Permian echinoderms of Timor- II'. Monograph of Permian blastoids)*

Wanner, J. (1924)- Die permischen Blastoiden von Timor. Jaarboek Mijnwezen Nederlandsch Oost-Indie 51 (1922), Verhandelingen 1, p. 163-233.
*('The Permian blastoids of Timor'. Timor Permian blastoid faunas richest in world, both in species and numbers, with many species unknown elsewhere. Many localities, probably representing different stages of Permian. Character of faunas more European (Tethys) than American (NB: taxonomy of blastoids revised by Breimer & Macurda (1972); JTvG))*

Wanner, J. (1926)- Die marine Permfauna von Timor. Geol. Rundschau 17a, Sonderband (Steinmann Festschrift), p. 20-48.
*('The marine Permian fauna of Timor'. Timor Permian faunas richest of all known marine Permian faunas (~600 species) and of Tethyan affinity. Crinoids (191 species) and blastoids (32 species) particularly common. Corals dominated by solitary taxa (Timorphyllum, Verbeekiella), with rel. rare colonial taxa (Lonsdaleia, Zaphrentis, Polycoelia, Amplexus, Pachypora). Ammonites (37 species, incl. Agathiceras, Paralegoceras, Popanoceras) and brachiopods (49 species, incl. Productus, Spirigera, Retzia, Chonetes, Camarophoria, Lyttonia) mostly genera already known from elsewhere. Gastropods 60 species, bivalves 20 species, incl. Atomodesma. Four species of fusulinids, but no complicated types. Most of Permian faunas from red-brown crinoid limestones interbedded with diabase volcanic. No signs of Permian glaciations in faunas or sediments)*

Wanner, J. (1929)- Neue Beitrage zur Kenntnis der Permischen Echinodermen von Timor. I. *Allagecrinus*, II. *Hypocrinites*. Dienst Mijnbouw Nederlandsch-Indie, Wetenschappelijke Mededeelingen 11, p. 1-116.
*('New contributions to the knowledge of Permian echinoderms from Timor, I. Allagecrinus and II. Hypocrinites'. New crinoid species, mainly based on material from Basleo. First of long series; in German)*

Wanner, J. (1930)- Neue Beitrage zur Kenntnis der Permischen Echinodermen von Timor, III. Hypocrininae, *Paracatillocrinus* und *Allagecrinus*. Dienst Mijnbouw Nederlandsch-Indie, Wetenschappelijke Mededeelingen 13, p. 1-31.
*('New contributions to the knowledge of Permian echinoderms of Timor 3- Hypocrininae, Paracatillocrinus and Allagecrinus'. New crinoid species from Ehrat collection from Basleo and Niki-Niki)*

Wanner, J. (1930)- Neue Beitrage zur Kenntnis der Permischen Echinodermen Von Timor, IV. Flexibilia. Dienst Mijnbouw Nederlandsch-Indie, Bandung, Wetenschappelijke Mededeelingen 14, p. 1-61.
*('New contributions to the knowledge of Permian echinoderms of Timor 4- Flexibilia'. New 'flexibilia'-group crinoid descriptions and species. In German)*

Wanner, J. (1931)- Das Alter der permischen Basleo-Schichten von Timor. Zentralblatt Mineral. Geol. Palaont., B, p. 539-549.
*('The age of the Permian Basleo beds of Timor'. Basleo beds believed to be Upper Permian (later authors more commonly view Basleo fauna as ~Mid Permian; JTvG). With map of fossil localities)*

Wanner, J. (1931)- Neue Beitrage zur Kenntnis der permischen Echinodermen von Timor, V. Poteriocrinidae, Pt. 1, VI. Blastoidea. Dienst Mijnbouw Nederlandsch-Indie, Wetenschappelijke Mededeelingen 16, p. 1-77.
*('New contributions to the knowledge of Permian echinoderms of Timor 5- Poteriocrinidae part 1')*

Wanner, J. (1931)- Neue Beitrage zur Kenntnis der Permischen Echinodermen von Timor. VII. Die Anomalien der Schizoblasten. Dienst Mijnbouw Nederlandsch-Indie, Wetenschappelijke Mededeelingen 20, p. 5-37.
*('New contributions to the knowledge of the Permian echinoderms of Timor- VII. The anomalies of the Schizoblasts')*

Wanner, J. (1932)- Zur Kenntnis der permischen Ammonoideen-fauna von Timor. Beitrage Palaeontologie des Ostindischen Archipels III, Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 67, B, p. 257-278.
*('On the knowledge of the Permian ammonoid fauna from Timor. Descriptions of Permian ammonites from Basleo, W Timor, collected by Ehrat, Molengraaff, etc. No stratigraphy, biogeography)*

Wanner, J. (1932)- Anisische Monophylliten von Timor. Beitrage Palaeontologie des ostindischen Archipels IV, Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 67, B, p. 279-286.
*('Anisian Monophyllites from Timor'. New species of M Triassic ammonite Monophyllites from Oe Masih, Basleo area, from Ehrat collection)*

Wanner, J. (1937)- Neue Beitrage zur Kenntniss der permischen Echinodermen von Timor VIII- XIII. Palaeontographica, Suppl. IV, Beitr. Geologie Niederl.-Indien IV, 2, p. 57-212.
*('New contributions to the knowledge of Permian echinoderms of Timor 8-13'. Systematic descriptions of 19 new genera and 43 new species of crinoids)*

Wanner, J. (1940)- Neue Beitrage zur Kenntnis der permischen Echinodermen von Timor XIV. Poteriocrinidae, 3 Teil. Palaeontographica, Suppl. 4, Beitr. zur Geologie Niederl.-Indien IV, 3, p. 213-242.
(*'New contributions to the knowledge of Permian echinoderms of Timor 14'. More systematic descriptions of new species of crinoids)*

Wanner, J. (1940)- Neue Blastoideen aus dem Perm von Timor, mit einem Beitrag zur Systematik der Blastoiden. In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands, etc., 1937, 1, Noord Hollandsche Publ. Co., Amsterdam, p. 215-277.
*('New blastoids from the Permian of Timor, with a contribution to the systematics of the blastoids'. New Permian blastoid species, mainly from De Marez Oyens and Brouwer 1937 collections from Basleo, W Timor. Basleo area contains commeon microblastoids and microcrinoids. Of the 13 Permian blastoid genera known from Timor only two or three (Schizoblastus, Orbitremites) also occur outside Timor (But: Timoroblastus and Deltoblastus also in North Oman; Webster 2007; JTvG)*

Wanner, J. (1940)- Neue Permische Lamellibranchiaten von Timor. In: H.A. Brouwer (ed.) Geological Expedition of the University of Amsterdam to the Lesser Sunda Islands, etc., 1937, 2, Noord Hollandsche Publ. Co., Amsterdam, p. 370-395.
*(Permian bivalves collected by Ehrat in 1927 and Brouwer1937 expedition. Most from Basleo area, and are species of Atomodesma, already known from earlier Timor papers)*

Wanner, J. (1941)- Neue Beitrage zur Kenntnis der permischen Echinodermen von Timor XV. Echinoidea. Palaeontographica, Suppl. 4, Beitr. Geologie Niederl.-Indien IV, 5, p. 295-314.
*('New contributions to the knowledge of the Permian echinoderms of Timor 15- echinoids')*

Wanner, J. (1941)- Neue Beitrage zur Kenntnis der permischen Echinodermen von Timor XVI. Poteriocrinidae 4 Teil. Palaeontographica, Suppl. 4, Beitr. Geologie Niederl.-Indien V, 1, p. 297-314.
*('New contributions to the knowledge of the Permian echinoderms of Timor 16- Poteriocrinidae part 4')*

Wanner, J. (1942)- Beitrage zur Palaontologie des Ostindischen Archipels XIX, Die Crinoidengattung *Paradoxocrinus* aus dem Perm von Timor. Zentralblatt Mineral. Geol. Palaont., B, 7, p. 201-214.

*('Contributions to the paleontology of the East Indies Archipelago 19- The crinoid genus Paradoxocrinus from the Permian of Timor'. In German)*

Wanner, J. (1951)- Uber die Crinoidengattung *Timorocidaris*. Neues Jahrbuch Geol. Palaont., Monatshefte 1950, 12, p. 360-370.
*('On the crinoid genus Timorocidaris')*

Wanner, J. (with F. Weber) (1956)- Zur Stratigraphie vom Portuguesisch Timor. Zeitschrift Deutsche Geol. Ges. 108, p. 109-140.
*('On the stratigraphy of Portuguese Timor'. Comprehensive discussion of Permian and Triassic facies in 'pseudoautochthonous'(flysch facies) and in nappe complexes (limestones, basic volcanics) of Timor Leste. Jurassic marine marls and limestones (with Buchia malayomaorica in nappe complex?).)*

Wanner, J. & H. Sieverts (1935)- Zur Kenntnis der permischen Brachiopoden von Timor. 1. Lyttoniidae und ihre biologische und stammesgeschichtliche Bedeutung. Beitrage Palaeontologie des ostindischen Archipels 12, Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 74, B, p. 201-281.
*('On the knowledge of the Permian brachiopods of Timor: 1. Lyttoniidae and their biological and evolutionary significance'. Descriptions of Lyttoniidae (incl. Leptodus, Oldhaminella, Poikilosakos) from Permian of Timor (mainly Basleo), and reconstruction of lifestyle (mostly attached to other fossils, like crinoid stems, etc.). With Lyttonia catenata n.sp., Paralyttonia transiens n.gen., n.sp., P. permica n.sp, Paralyttonia girtyi, etc.))*

Ware, P. & L.O. Ichram (1997)- The role of mud volcanoes in petroleum systems: examples from Timor, the South Caspian and the Caribbean. In: J.V.C. Howes & R.A. Noble (eds.) Proc. Int. Conf. Petroleum systems of SE Asia and Australasia, Indon. Petroleum Assoc. (IPA), Jakarta, p. 955-970.
*(Main mud volcano fields on Timor-Roti associated with Bobonaro Complex which consists of matrix of extruded scaly clays derived from Kekneno Series. Mud volcanoes common in front of thrust zones)*

Warwick, D.J. (1970)- The Mesozoic geology of the area between the Ira Bere and Namalutun Rivers, Portuguese Timor. Timor Oil Ltd. Report, 11p.
*(Brief report on S coast of East Timor mapping; some photos, but no maps in report ?)*

Waters, J.A. (1990)- The palaeobiogeography of the Blastoidea (Echinodermata). In: W.S. McKerrrow & C.R. Scotese (eds.) Palaeozoic palaeogeography and biogeography, Geol. Soc., London, Mem. 12, p. 339-352.
*(Permian blastoids widespread but most diverse in SE Asia and Australia. Timor faunas Sakmarian-Asselian and Kazanian, and most diverse and abundant. Paleoecology and stratigraphy poorly understood. Some common species between Timor and Australia, but others conspicuously absent: Angioblastus, Deltoblastus not in Australia; Australoblastus not in Timor. Reasons for local endemism unclear. Kazanian Timor fauna is last successful blastoid community before going extinct)*

Webster, G.D. (1998)- Distortion in the stratigraphy and biostratigraphy of Timor; a historical review with an analysis of the crinoid and blastoid faunas. In: G.R. Shi, N.W. Archbold & M. Grover (eds.) Strzelecki Int. Symp. Permian of Eastern Tethys: biostratigraphy, palaeogeography and resources. Proc. Royal Soc. Victoria. 110, 1-2, p. 45-72.
*(Rich Permian Timor fossils poorly constrained stratigraphically. Two-thirds of Timor crinoid and blastoid genera unknown outside Timor)*

Webster, G.D. (1998)- Palaeobiogeography of Tethys Permian crinoids. In: G.R. Shi, N.W. Archbold & M. Grover (eds.) Strzelecki Int. Symposium on Permian of Eastern Tethys: biostratigraphy, palaeogeography and resources, Proc. Royal Soc. Victoria 110, 1-2, p. 289-308.
*(No Permian crinoid fauna in world as diverse and abundant as Timor. Five horizons between Sakmarian-Wuchiapingian. Australian faunas generally considered as cooler water faunas, >35°S. Timor warm-water shelf. In Artinskian greater similarity beween W Australia and Timor than between W and E Australia)*

Webster, G.D. (2012)- A canted-cup Permian crinoid *Exotikocrinus* n. gen. (Crinoidea, Dichocrinidae) from Timor with comments on canted or inclined radial summits. Palaeoworld 21, p. 64-68.
*(New canted-cup crinoid from W Timor described as Exotikocrinus dochmos n.gen. and n.sp.)*

Webster, G.D. & S.K. Donovan (2012)- Revision of two species of ?*Ulocrinus* and a new pelecocrinid crinoid from West Timor. Palaeoworld 21, 2, p. 108-115.
*(Two cladid crinoid species of ?Ulocrinus described by Wanner (1924, 1937) reinterpreted as cladid crinoid and renamed as Katerocrinus indicus n. gen., n. comb. and Dochmocrinus conoideus n. gen., n. comb.)*

Webster, G.D. & S.K. Donovan (2012)- Before the extinction- Permian platyceratid gastropods attached to platycrinitid crinoids and an abnormal four-rayed *Platycrinites* s.s. *wachsmuthi* (Wanner) from West Timor. Palaeoworld 21, 3-4, p. 153-159.
*(Examples of gastropods attached to Permian platycrinitid camerate crinoids from W Timor)*

Webster, G.D. & S.K. Donovan (2015)- Review and revision of the West Timor Permian *Graphiocrinus* species of Johannes Wanner. Palaeoworld 24, p. 497-522.
*(26 species of crinoid Graphiocrinus described from Permian of Timor by Wanner (1916-1949), but 12 belong to other genera, many others considered indeterminate members of several families. New taxa introduced)*

Weiler, W. (1932)- Ueber Fischreste aus der Kreide von Timor. Neues Jahrbuch Mineral. Geol. Palaont., Beilage Band 67, p. 287-304.
*('On fish remains from the Cretaceous of Timor'. Shark teeth, believed to be of Late Cretaceous age from red clays above Triassic Halobia Limestone in Noil Tobee, collected by Ehrat. Incl. Strophodus, Lamna, Scapanorhynchus raphiodon, Odontapsis, etc.. Branson 1937 suggested possible Permian elements(?))*

Wells, N. (2005)- Redefining the Lolotoi Formation, Timor-Leste. PESA News, 12/2004, p. 36 *(Abstract only; Geology in Timor Symposium)*
*(Greenschist-epidote facies metamorphism in E Timor Lolotoi Fm. Mafic precursor basalts oceanic crust? Three stages of ductile deformation and three types of brittle deformation. Fault trends 100º, 050º and N-S. Basal contact of Lolotoi Fm is >100m fault gouge with underlying Eocene units. Ductile shear zone separates Lolotoi Fm from overlying Cablac Fm. Lolotoi Fm significantly deformed prior to juxtaposition with Cablac Fm. Slivers of Lolotoi Fm involved in ductile shear zone and intercalated with base Cablac Fm suggest these two units were structurally juxtaposed. Lolotoi Fm and Aileu Fm not similar, but Mutis Complex of W Timor broadly similar)*

Welter, O.A. (1914)- Die Obertriadischen Ammoniten und Nautiliden von Timor. In: J. Wanner (ed.) Palaeontologie von Timor, Schweizerbart, Stuttgart, 1, 1, p. 1-258.
*('The Upper Triasic ammonites and nautiloids from Timor'. Monograph of ammonites collected by Molengraaff 1910-1912, Wanner 1911 and Weber 1911 W Timor expeditions. Rich assemblages with 205 Carnian-Norian species, mainly from blocks of 'Halstatter Facies' red limestone (~2m thick fossil accumulation without terrigenous sediment) from S half of W Timor. Incl. Sirenites malayicus n.sp. Some ammonites with black manganese staining. Remarkable similarities to Mediterranean and Himalayan ammonites. In N of Timor age-equivalent Norian 'Fatu' coral limestones (Both these U Triassic carbonate facies considered part of 'allochthonous' nappe complex by Wanner 1956 and others; JTvG))*

Welter, O.A. (1915)- Die Ammoniten und Nautiliden der Ladinischen und Anisischen Trias von Timor. In: J. Wanner (ed.) Palaontologie von Timor 5, 10, Schweizerbart, Stuttgart, p. 71-136.
*('The ammonites and nautiloids from the Ladinian and Anisian Triassic of Timor'. Rich assemblage of Middle Triassic ammonites (>27 genera) from blocks of thin, reddish, bathyal Triassic cephalopod limestones called 'Halstatt Facies' from various Timor localities, collected by Wanner and Molengraaf 1909-1911 expeditions. Associated with white tuffs and ammonites commonly with black iron-manganese coating. Ammonite assemblages more 'Alpine' than 'Asian' in character)*

Welter, O.A. (1922)- Die Ammoniten der unteren Trias von Timor. In: J. Wanner (ed.) Palaeontologie von Timor 11, 19, Schweizerbart, Stuttgart, p. 83-154.
*('The ammonites from the Lower Triassic of Timor'. Monograph on high-diversity (26 genera, 71 species) Lower Triassic ammonites from various Timor localities, collected by Wanner and Molengraaf 1909-1911 expeditions. Oldest horizon is yellow Meekoceras limestone from Kapan and Nifoekoko near Niki-Niki (overlying dark red Permian limestone). Other blocks are limestones with Owenites egrediens from Bihati, Anasiberites multiformis from Noil Saban and Ophiceras crassecostatum from Fatu Toekoenenu. All blocks of condensed 'Hallstatt facies' with tuffs and black manganese coating. Many similarities with Himalayan-Mediterranean Triassic faunas. No locality maps)*

Welter, O.A. (1922)- Nachtrag zu den obertriadischen Ammoniten von Timor. In: J. Wanner (ed.) Palaeontologie von Timor 11, 19, Schweizerbart, Stuttgart, p. 155-159.
*('Supplement to the Upper Triassic ammonites from Timor'. Descriptions of 4 additional Early Triassic ammonoid species. Genus Amarassites first described from Timor now also found in Alps. Timor 'Bihati C' fauna has more Mediterranean than Asian elements)*

Wensink, H. & S. Hartosukohardjo (1990)- Paleomagnetism of younger volcanics from Western Timor, Indonesia. Earth Planetary Sci. Letters 100, 1-3, p. 94-107.
*(Eocene Metan volcanics from Mutis Massif formed at ~17°N, possibly on continental fragment that broke away from Gondwana in Mesozoic, shifted to SE Asia, broke away in Eocene and collided with Australia at ~3 Ma. Late Miocene obducted Manamas Fm of NW coast (=Oecussi volcanics?) pillow lavas and arc volcanics suggest paleolatitude of 8° and 45° CCW rotation of Timor in last 3 My)*

Wensink, H. & S. Hartosukohardjo (1990)- The paleomagnetism of Late Permian- Early Triassic and Late Triassic deposits on Timor: an Australian origin? Geophysical J. Int. 101, p. 315-328.
*(Paleomagnetic work on non-recrystallized Permian Maubisse Fm red limestones from Kelamenanu and Suanae suggest paleolatitude of ~39° (averages of two localities 37.7° and 43.2°) and 55° clockwise rotation. Late Triassic Aitutu radiolarian calcilutites from Maubesi River and Sabau with Halobia and quartz arenites: paleolatitude ~33° and clockwise rotation of 25°. Results suggest presence of displaced terrane of Australian origin on Timor island)*

Wensink, H., S. Hartosukohardjo & K. Kool (1987)- Paleomagnetism of the Nakfunu Formation of Early Cretaceous age, western Timor, Indonesia. Geologie en Mijnbouw 66, 2, p. 89-99.
*(online at: https://drive.google.com/file/d/0B7j8bPm9Cse0V3liNFNEeW9NdDg/view)*
*(Early Cretaceous (Albian?) Nakfunu Fm bathyal red clays in S Central Timor Kolbano accretionary prism probable paleolatitude of ~19-21°, probably in S Hemisphere. Today at 10°S, suggesting original site of deposition of Nakfunu sediments were 10° S of present position on Timor and sediments moved ~1200 km N since deposition in an oceanic environment. but Australian NW Shelf was closer to 30-40° S at that time, so probably formed well N of Australian Shelf)*

Wichmann, A. (1882)- Gesteine von Timor nach Sammlungen von Macklot, Reinwardt und Schneider. Sammlungen Geol. Reichs-Museums Leiden, Ser. 1, 2, E.J. Brill, Leiden, p. 1-172.
*(online at: www.repository.naturalis.nl/document/552382)*
*(Also reprinted in three parts in Jaarboek Mijnwezen 1882, Wetenschappelijk Gedeelte, p. 181-252, 1884, Wetenschappelijk Gedeelte, p. 231-284 and 1887, Wetenschappelijk Gedeelte, p. 46-93)*
*('Rocks from Timor and some adjacent islands' Descriptions of rocks collected by Macklot, Reinward and Schneider)*

Wichmann, A. (1887)- Gesteine von Pulu Samauw und Pulu Kambing. Sammlungen Geol. Reichs-Museums Leiden, Ser. 1, 2, E.J. Brill, Leiden, p. 173-182. *(also in Jaarboek Mijnwezen 1887, Wetenschappelijk Gedeelte, p. 94-103)*
*(online at: www.repository.naturalis.nl/document/552401)*

*('Rocks from Samauw and Kambing Islands'. Small islands W of Kupang, W Timor. Pulau Kambing hill composed of sandstone and mud volcano Samauw also with sandstones, Tertiary limestones and also small mud volcanoes. No maps, figures)*

Wichmann, A. (1887)- Gesteine von der Insel Kisser. Sammlungen Geol. Reichs-Museums Leiden, Ser. 1, 2, E.J. Brill, Leiden, p. 183-208.
*(online at: www.repository.naturalis.nl/document/552441)*
*('Rocks from Kisar Island'. Kisar NE of Timor, sampled by Reinwardt in 1821, has core of metamorphic rocks, (phyllite, mica schist, amphibolite), surrounded by Late Tertiary limestone terraces)*

Wichmann, A. (1887)- Gesteine von der Insel Kisser. Jaarboek Mijnwezen Nederlandsch Oost-Indie 1887, Wetenschappelijk Gedeelte 3, p. 104-128.
*('Rocks from Kisar Island', NE of Timor. Same as paper above)*

Wichmann, A. (1892)- Bericht uber eine im Jahre 1888-89 im Auftrag der Niederlandischen Geographischen Gesellschaft ausgefuhrte Reise nach dem Indischen Archipel, part 4, Timor. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap ser. 2, 9, p. 161-221.
*(Part 3 of Wichmann geographic narrative of 1888-1889 trip for Netherlands Geographic Society (Timor, Rotti Kambing and Samau). Mainly geographic descriptions, with some of earliest observations on Timor geology. First significant collection of Permian- Jurassic fossils from Timor, Roti, described by Rothpletz 1891, 1892. Also report of crystalline schists from Lakan, which Wichmann believes to be part of belt of metamorphic rocks that continues to islands of Kisar, Leti, Babar, etc. to Buru (p. 217))*

Wichmann, A. (1892)- Bericht uber eine im Jahre 1888-89 im Auftrag der Niederlandischen Geographischen Gesellschaft ausgefuhrte Reise nach dem Indischen Archipel, part 5. Rotti. Tijdschrift Kon. Nederlands Aardrijkskundig Genootschap, ser. 2, 9, p. 222-276.
*(Final part of Wichmann geographic narrative of 1888-1889 trip for Netherlands Geographic Society (Rotti Kambing and Samau))*

Wichmann, A. (1892)- Die Insel Rotti. Petermanns Geogr. Mitteilungen 38, p. 97-103.
*('The island Rotti'. Early geographic and geological observations of Roti island, SW of Timor. Geologically Roti is relatively simple, and mainly a clump of Triassic, covered by Neogene foraminifera marl. Triassic sandstones overlain by Upper Triassic limestone with 'alpine' Monotis salinaria, Halobia spp. (described by Rothpletz 1891). Mud volcanoes on Landu Peninsula in NE Rotti with sedimentary rock clasts and Permian, Triassic and E-M Jurassic (Arietites, Harpoceras, Belemnites gerardi) macrossils.)*

Wichmann, A. (1892)- Over het voorkomen van Alpine Trias op Timor (volgens fossielen verzameld door H.F.C. ten Kate). Natuurkundig Tijdschrift Nederlandsch-Indie 51, p. 446-447.
*('On the occurrence of Alpine Triassic on Timor'. Brief note on the discovery of Triassic Halobia mollusc limestone from Timor, in float from Halemea River or Mota Muruk, Fialarang SSE of Atapupu, collected by Ten Kate. With abundant thin Monotis salinaria, a characteristic species of Norian stage in Alpine Triassic)*

Winkler Prins, C.F. (2008)- Some spiriferid brachiopods from the Permian of Timor (Indonesia). In: G.R. Shi et al. (eds.) A memorial issue in honour of Professor Neil W. Archbold, Proc. Royal Soc. Victoria 120, 1, p. 389-400.
*(online at: http://repository.naturalis.nl/document/544734)*
*(Revision of Permian neospiriferine and spiriferidine brachiopods from Timor in Leiden collections: Spirifer (Crassispirifer) timorensis Martin 1881 and Crassispirifer broilii Waterhouse 2004. New species Latispirifer archboldorum (ex-Spirifer fasciger) from near Noki-Niki. New genus Archboldiella based on aberrant species Spirifer basleoensis Hayasaka & Hosono 1951)*

Wittouck, S.F. (1937)- Exploration of Portuguese Timor. Report of Allied Mining Corporation to Asia Investment Company, Ltd., Asia Investment Company, Ltd., Kolff & Co., Batavia, p. 1-107.

*(Monograph on geology of Portuguese Timor, and the account of mineral and oil exploration work by Allied Mining. With 22 full-page maps and sketch-maps and two 1:250,000 scale maps of topography and geology)*

Wittouck, S.F. (1938)- Exploration of Portuguese Timor. The Geographical J. 92, 4, p. 343-350.
*(Mainly geographic summary of Timor Leste, compiled during 1936-1937 survey. Oil and gas seeps in S coastal area in Aliambata, Iriamo, Suete and Suai districts)*

Yamagiwa, N. (1963)- Some Triassic corals from Portuguese Timor (Palaeontological study of Portuguese Timor, I). Mem. Osaka University, Lib. Arts Educ. Branch, Nat. Sci. Mem. 12, p. 83-87.
*(Short paper on U Triassic corals collected in 1961 from Fatu Laculequi near Pualaca in C Timor Leste)*

Yensusnimar, D., J. Setyoko & L. Ginting (2017)- Biomarker characterization of mud volcano seepage (oil seep) and sediment samples from Atambua Field. Proc. Joint Conv. HAGI-IAGI-IAFMI-IATMI (JCM 2017), Malang, 2p. *(Extended Abstract)*
*(Biomarker compositions of oils from Masin Lulik mud volcano seep and surface sediments from the Atambua area, onshore Timor, show signatures of marine source facies (Pr/Ph 1.30- 1.83, absence of land plant biomarker signatures such as bicadinanes and oleananes). Low thermal maturity of oils (early mature) and surface sediments (immature). No information on sample locations or ages of rocks)*

Zobell, E.A. (2007)- Origin and tectonic evolution of Gondwana sequence units accreted to the Banda Arc: a structural transect through Central East Timor. M.Sc. Thesis Brigham Young University, p. 1-83. *(Unpublished)*
*(online at: http://scholarsarchive.byu.edu/cgi/viewcontent.cgi?article=1897&context=etd)*
*(Petrographic analyses of Permian- Jurassic 'Gondwanan sequence' in E Timor. Detrital zircons from 'Asian' Banda unit as young as 80 Ma. Zircons from Triassic 'Gondwana sequence' no younger than ~234 Ma and with peak ages at 301 Ma and 1873 Ma, also some Archean ages. QFL ratios of Triassic greywacke of Timor suggest proximal, syn-rift, intracratonic or recycled orogen source, from NE. Mount Isa region to E has most similar peak U/Pb zircon ages, but extension of this terrane to W, which would have rifted away during Jurassic breakup, is required to account for immaturity of sandstones)*

Zobell, E.A. (2007)- New insights into the stratigraphic and structural evolution of the active Banda orogen. GSA Rocky Mountain Section, 59th Ann. Mtg, 2007, p. *(Abstract only)*
*(Banda arc-continent collision comprised of Australian passive margin cover sequences and portions of uplifted Banda forearc. Uplifted Banda forearc units indicate Asian affinity with maximum age of 80 Ma. Detrital zircons from sandstones of Australian continental margin sequences have peak ages at 237-353 Ma and 1788-1895 Ma. Provenance analysis of Triassic Australian-affinity greywacke consistent with proximal syn-rift intracratonic or recycled orogen source, probably from N. Structural measurements indicate N-NW to S-SE vergence direction and 30-40% shortening. Banda forearc is 200 km wide N of Savu, and completely over ridden by retro-wedge thrusting north of E Timor. Structural models constructed to test different geometries)*

***VII.5. Timor Sea, Indonesian Sahul Platform***

Akutsu, T. (2009)- Abadi gas field, Masela PSC block, West Arafura Sea, Indonesia. SEAPEX Exploration Conference, Singapore 2009, p.

Ambrose, G.J. (2004)- The ongoing search for oil in the Timor Sea, Australia. In: G.K. Ellis et al. (eds.) Timor Sea Symposium Darwin 2003, Northern Territory Geol. Survey, p. 3-22.

Aswan, A., Y. Zaim, K. Kihara & K. Hadianto (2012)- Depositional facies of Plover Formation in the Abadi Field, Eastern Indonesia based on core sedimentology. AAPG Int. Conv. Exhib., Singapore 2012, Search and Discovery Art 50729, 6p. *(Extended Abstract)*
*(online at: www.searchanddiscovery.com/documents/2012/50729aswan/ndx_aswan.pdf)*
*(Summary of poster on core sedimentology study of M Jurassic Plover Fm gas reservoirs of Abadi Field. Cores quartzoze sandstone, siltstones, and claystones, generally rich in ichnofossils. Estuarine- shoreface facies)*

Audley-Charles, M.G. (1966)- The age of the Timor Trough. Deep Sea Research 13, 4, p. 761-763.
*(Timor Trough persisted as deep water zone between Timor and Australia since Lower Eocene)*

Baillie, P.W., G. Duval & C. Milne (2013)- Geological development of the western end of the Timor Trough. Proc. SE Asia Petroleum Expl. Soc. (SEAPEX) Conf., Singapore 2013, p. 1-46. *(Abstract + Presentation)*
*(www.seapex.org/im_images/pdf/Simon/11%20Peter%20Baillie%20Timor%20Trough%20SEC2013.pdf)*
*(Examples of regional seismic lines over W Timor Trough, here interpreted as foredeep produced by loading following arrival of Banda Arc and is topographic expression of down-flexed/ thrust-loaded Australian margin, not subduction trench. 'Accretionary prism' of S Timor/ N Timor Trough explained as gravitational collapse)*

Baillie, P.W., T.H. Fraser, R. Hall & K. Myers (2004)- Geological development of eastern Indonesia and the northern Australia collision zone: a review. In: G.K. Ellis et al. (eds.) Timor Sea Symposium, Darwin 2003, Northern Territory Geol. Survey, p. 539-550.
*(N margin Australia divergent margin over most of time. Continental fragments separated in E. Devonian (opening of Paleo-Tethys), late E Permian (opening of Meso-Tethys) and Late Triassic- Late Jurassic (opening of Ceno-Tethys ocean). Passive margin, facing open ocean since end-Jurassic. Late Triassic Carnian-Norian succession of NW Shelf was deposited following regionally extensive period of tectonism, erosion and uplift along edges of craton (Fitzroy Movement), related either to breakup events along Gondwanan margin or to docking of continental blocks along New Guinea subduction margin)*

Baillie, P. & C. Milne (2014)- New insights into prospectivity and tectonic evolution of the Banda Arc: evidence from broadband seismic data. Proc. 38th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA14-G-100, 5p.
*(On new seismic data from Timor Trough, S of Timor island. Timor Trough is recently downflexed Australian continental margin)*

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*(On hydrocarbon prospectivity in Paleozoic- Mesozoic S of Babar- Tanimbar. New seismic links Australian gas discoveries of Sunrise and Evans Shoal with Abadi accumulation and open acreage in Indonesian waters. Malita and Calder Grabens charge kitchens from mature E-M Jurassic Plover Fm source rocks. Paleozoic Basins could contain mature oil-prone source rocks of Cambrian, Devonian and Carboniferous age)*

Barber, P.M., P.A. Carter, T.H. Fraser, P. Baillie & K. Myers (2004)- Under-explored Palaeozoic and Mesozoic petroleum systems of the Timor and Arafura Seas, northern Australian continental margin. In: G.K. Ellis et al. (eds.) Timor Sea Symposium, Darwin 2003, Northern Territory Geol. Survey, p. 143-154.
*(Similar to Barber et al. (2003), above)*

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*(Review of 73 papers on biostratigraphy of six DSDP holes in SE Indian Ocean/ Timor Sea)*

Brooks, D.M., A.K. Goody, J.B. OđReilly & K.L. McCarty (1996)- Bayu/Undan gas-condensate discovery: western Timor gap zone of cooperation, Area A. Australian Petrol. Prod. Explor. Assoc. (APPEA) J. 1996, p. 142-160.

Brown, S. (1992)- The Mesozoic stratigraphy of the Timor Gap and its bearing on the hydrocarbon potential of Eastern Indonesia. Proc. 21st Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 553-574.
*(Discussion of Timor Gap Mesozoic stratigraphy and comparisons to E Indonesia islands stratigraphy. Not much detail)*

Castillo, D.A., D.J. Bishop & M. de Ruig (2001)- Fault seal integrity in the Timor area: prediction of trap failure using well-constrained stress tensors and fault surfaces interpreted from 3D seismic. Proc. 28th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, p. 261-288.
*(In Laminaria High and Nancar Trough areas many hydrocarbon traps underfilled or breached. Ability of fault to behave as seal controlled in part by the principal stress directions and magnitudes and fault geometry. Regional stress analysis indicates non-uniform strike-slip stress regime, with orientation of maximum principal horizontal stress (SHmax) varying from N-S compression in N to NE-SW farther S)*

Castillo, D.A., R.R. Hillis, K. Asquith, M. Fischer (1998)- State of stress in the Timor Sea area, based on deep wellbore observations and frictional failure criteria: application to fault-trap integrity. In: Proc. The sedimentary basins of Western Australia II, Petroleum Expl. Soc. Australia (PESA), p. 325- 340.
*(SHmax stress direction NE-SW to N-S, subparallels convergence direction between Australia and Indonesia)*

Ciftci, N.B. & L. Langhi (2012)- Evolution of the hourglass structures in the Laminaria High, Timor Sea: implications for hydrocarbon traps. J. Structural Geol. 36, p. 55-70.
*(Hourglass structure is older horst block with superimposed younger graben. Bounding faults of horst and graben blocks separate conjugate fault systems formed by two episodes of extension: (1) Late Jurassic–Early Cretaceous and (2) M Miocene- Pliocene)*

Cunneen, J.P. (2005)- Cenozoic tectonics of the Timor Sea, northwest Australia. Ph.D. Thesis University of Western Australia, Perth, p. 1- 249. *(Unpublished)*

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*(Late Miocene-to-Recent collision of NW Australian shelf with Banda Island Arc results in downward flexing of Australian lithosphere toward arc. Vertical extent of normal faulting on shelf from SW of Timor to S of Tanimbar indicates collision began W of Timor in Late Miocene, progressed E during Pliocene, and continues eastward. Normal faults W of 124.5°E terminate vertically in Miocene section. Normal faults from 124.5°E to 125.5 °E terminate at Miocene-Pliocene boundary. from 125.5°E to 128°E, faults terminate in E Pliocene, from 128°E to 131°E terminate at or near sea floor)*

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*(online at: www.iagi.or.id/fosi/berita-sedimentologi-no-24-timor-and-arafura-sea.html)*
*(Examples of seismic lines across Timor-Tanimbar Trough, showing subducting Australian Plate and Banda forearc accretionary wedge complexes)*

Ellis, G. (2007)- Hydrocarbon entrapment in Triassic to Late Jurassic reservoirs in the Timor Sea, Australia- new insights. Australian Petrol. Explor. Assoc. (APEA) J. 47, p. 37-51.

*(Oil-filled fluid inclusions at quartz overgrowth/ detrital quartz boundaries and in fractures cutting quartz grains used as evidence of paleo-oil columns in Triassic- Late Jurassic. Other indications of paleo-oil include sample fluorescence, elevated resistivity and reservoir diagenesis. Structures in Timor Sea have undergone more than one phase of oil entrapment and leakage, with each oil phase potentially from different oil source)*

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*(online at: www.searchanddiscovery.com/abstracts/pdf/2002/hedberg_australia/images/ndx_gartrell.pdf)*
*(Fault reactivation related to late Tertiary collision of Australian continent with Banda Arc responsible for common occurrence of breached hydrocarbon traps in Timor Sea. Two stages of collision at Timor: (1) Late Miocene (8 Ma) when transitional Australian continental crust reached subduction system; (2) true continental crust entered subduction system in M Pliocene, and Timor Trough evolved as foredeep basin in response to imbricate thrust loading on Australian margin)*

George, S.C., P.F. Greenwood, G.A. Logan, R.A. Quezada, L.S.K. Pang, M. Lisk et al. (1997)- Comparison of palaeo oil charges with currently reservoired hydrocarbons using molecular and isotopic analyses of oil-bearing fluid inclusions: Jabiru oil field, Timor Sea. The Australian Petrol. Prod. Explor. Assoc. (APPEA) J. 37, p. 490-504.

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*(Oil inclusions in Bayu 1 Jurassic sandstones suggest paleo-oil column of at least 20m below 46-53m paleo-gas cap (currently 155m gas column). FI oil from marine-influenced, less clay-rich source rock. FI oil maturity mid-oil window (Ro ~0.75%), condensate higher maturity (~0.9%). Compositions and maturity data consistent with early expulsion from marine organic matter in Echuca Shoals Fm, followed by expulsion of condensate from more terrestrial Elang/ Plover Fms)*

George, S.C., M. Lisk & P.J. Eadington (2004)- Fluid inclusion evidence for an early, marine-sourced oil charge prior to gas-condensate migration, Bayu-1, Timor Sea, Australia. Marine Petroleum Geol. 21, p. 1107-1128.

George, S.C., T.E. Ruble, H. Volk, M. Lisk, M.P. Brincat et al. (2004)- Comparing the geochemical composition of fluid inclusion and crude oils from wells on the Laminaria High, Timor Sea. In: G.K. Ellis et al. (eds.) Timor Sea Petroleum Science, Proc. Timor Sea Symposium, Darwin 2003, Northern Territory Geol. Survey, Spec. Publ. 1, p. 203-230.

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Harrowfield, M., J. Cunneen, M. Keep & W. Crowe (2003)- Early-stage orogenesis in the Timor Sea region, NW Australia. J. Geol. Soc. London 160, p. 991-1001.
*(Neogene collision between Australian, Eurasia and Pacific plates coeval with growth of depocentres in Timor Sea. Distortion of pre-tectonic (Aptian- Oligo-Miocene) sequences indicates trough subsidence coupled to uplift of outboard highs, amplifying basement topography and no structural inversion. At shallow levels, normal faulting accommodated flexure. Shortening of NW Shelf accommodated oblique convergence between Australia and Banda arc and transcurrent component of this deformation was partitioned outboard. No details on timing)*

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*(DAMAR deep seismic line across Banda arc E of Timor shows normal faulting and deepening into Timor Trough of Australian margin. Overriding imbricated thrust slices of accretionary wedge of S slope of Timor island composed of coherent thrust slices from subducting Australian margin, not incoherent melange)*

Jones, W., A. Tripathi, R. Rajagopal & A. Williams (2011)- Petroleum prospectivity of the West Timor Trough. Petroleum Expl. Soc. Australia (PESA) News 114, p. 61-65.
*(Petroleum prospectivity of W Timor Sea, S of W Timor Island. Potential for Triassic- Jurassic source kitchens. Main risks likely to be charge issues and reservoir quality (particularly for Permian carbonate reservoirs). Also possible trapping mechanisms of Jurassic sandstones within accretionary prism on Timor side of Trough)*

Keep, M., M. Clough & L. Langhi (2002)- Neogene tectonic and structural evolution of the Timor Sea region, NW Australia. In: P.G. & R.R. Purcell (eds.) The sedimentary basins of Western Australia 2. Proc. Petroleum Expl. Soc. Australia (PESA) Symposium, p. 341-352.
*(Neogene deformation in Timor Sea flexure-dominated in NE, transtension-dominated to SW. Cretaceous and Upper Jurassic ductile shales and claystones cause detachment of basement from Neogene. Two major and one minor Neogene structural reactivation events: Earliest Miocene (25-23 Ma; rel. minor; =New Guinea collision?), Late Miocene (11- 5.5 Ma; related to Sumba collision/ uplift or New Guinea collision/ folding; 8 Ma seems widespread Indo-Australian event) and late E Pliocene (~3 Ma- present-day; =Timor collision). Late Miocene event widespread, with synchronous deformation through Indo-Australian plate. Dominantly right-lateral transpression in Browse, left-lateral transtension in Timor Sea)*

Kihara, K., R. Feraldo, K. Chalik, T. Naito & N. Morita (2012)- Paleozoic to Mesozoic tectonostratigraphy of the Abadi gas feld, Eastern Indonesia. Proc. 36th Ann. Conv. Indon. Petroleum Assoc. IPA, Jakarta, IPA12-G-057, p. 1-12.
*(Abadi area of Timor Sea tectonostratigraphic elements oriented NNW-SSE in Paleozoic, NNE-SSW in Upper Triassic- Jurassic and NE-SW in Upper Jurassic-Cretaceous. Main sediment supply in Triassic-Jurassic from N of Abadi field, with major turnover of direction E Cretaceous due to continental breakup. U Triassic- Jurassic syn-rift sequences in rift basins with NE-SW trend (Malita Graben to SW) or NNE-SSW trend (Calder Graben))*

Kihara, K., H. Nagura & H. Honda (2007)- Jurassic coastal to shallow marine sandstone reservoir in present deep water; an example from the Abadi gas field, Indonesia. In: Exploration and exploitation in deep water. J. Japanese Assoc. Petroleum Technologists 72, 1, p. 65-75.
*(online at: /www.jstage.jst.go.jp/article/japt/72/1/72_1_65/_pdf)*
*(In Japanese, with English summary. Coastal to shallow-water Plover Fm sandstone in Abadi gas-field reservoir now in deep water. Plover Fm M Jurassic (partly lowermost U Jurassic), subdivided into upper and lower sandstones by Bathonian MFS. Upper unit main reservoir. Plover Fm two remarkable, rapid deepening events in Late Cretaceous (thick, muddy deltaic succession) and Pleistocene (deepening of Timor Trough))*

Londono, J. & J.M. Lorenzo (2004)- Geodynamics of continental plate collision during late Tertiary foreland basin evolution in the Timor Sea: constraints from foreland sequences, elastic flexure and normal faulting. Tectonophysics 392, p. 37-54.
*(Modeling of flexure of Australian NW margin as result of Timor collision. Late Tertiary (~6.5-1.6 Ma) foreland basin subsidence of Australian lithosphere propagates from SW to NE in Timor Sea, as consequence of oblique collision between Eurasian and Australian plates. Normal faulting related to bending implies some inelastic yielding. Flexural models indicate at least 570 km of Australian plate was flexed, primarily by tectonic loading of Timor Island and at least 100 km of plate subducted. Modeled forebulge uplift ~300m between ~200-400 km away from Timor Trough trench)*

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Mantle, D.J. (2005)- New dinoflagellate cyst species from the upper Callovian- lower Oxfordian *Rigaudella aemula* Zone, Timor Sea, northwestern Australia. Review Palaeobotany Palynology 135, 3, p. 245-264.
*(Four new late Callovian- earliest Oxfordian dinocyst species from Bayu Undan and Challis fields)*

Mantle, D. (2006)- Palynology, sequence stratigraphy and palaeoenvironments of Middle to Late Jurassic strata, Bayu-Undan Field, Timor Sea region. Ph.D. Thesis, University of Queensland, p. 1-210. *(Unpublished)*
*(Palynoly of U Plover, Elang, and lower Frigate Fms in Bayu-Undan Field, Timor Sea. Palynostratigraphic sequence previously assessed as latest Bathonian- E Oxfordian. Dinoflagellate acme events coincident with marine flooding surfaces and enable precise correlation across field. Elang Fm three third order sequences)*

Mantle, D.J. (2009)- Palynology, sequence stratigraphy, and palaeoenvironments of Middle to Upper Jurassic strata, Bayu-Undan Field, Timor Sea region, Part One. Palaeontographica B280, 1-3, p. 1-86.
*(Palynology of latest Bathonian- E Oxfordian uppermost Plover, Elang and Lower Frigate Fms in Bayu-Undan field. 96 spore-pollen and 32 dinoflagellate (Microdinium-Voodooia) species)*

Mantle, D.J. (2009)- Palynology, sequence stratigraphy, and palaeoenvironments of Middle to Upper Jurassic strata, Bayu-Undan Field, Timor Sea region, Part Two. Palaeontographica B280, 4-6, p. 87-212.
*(Continuation of Mantle 2009 above. Descriptions of 55 dinoflagellate species (Rigaudella to Woodinia), 17 acritarch, and prasinophyte phycomata taxonomy, Jurassic biostratigraphy, sequence stratigraphy, and paleoenvironments. Elang Fm three 3rd-order sequences. Systems tracts with distinctive palynomorph or palynodebris assemblages. Microphytoplankton diversity increases through transgressive systems tracts to peak diversity at maximum flooding surface. Ternia balmei, Meiourogonyaulax group, Ctenidodinium group and Rigaudella group represent approximate gradation from very nearshore to offshore environments or possibly an increase in salinities from euryhaline to stenohaline conditions)*

Mantle, D.J. & J.B. Riding (2012)- Palynology of the Middle Jurassic (Bajocian-Bathonian) *Wanaea verrucosa* dinoflagellate cyst zone of the North West Shelf of Australia. Review Palaeobotany Palynology 180, p. 41-78.
*(Marine and terrestrial palynomorphs from M Jurassic Wanaea verrucosa dinoflagellate cyst zone in Perseus-3A, Sunrise-2 and Sunset W1 wells in N Carnarvon and Bonaparte basins. Three subzones. Late Bajocian- E Bathonian age (slightly older than previous Helby and Partridge age calibrations). Associated spore-pollen assemblages transitional from upper Dictyotosporites complex to lower Contignisporites cooksoniae zones)*

Matsui, R., E. Shinbo, M. Omokawa & T. Zushi (2009)- Quartz cementation and reservoir quality of the Plover Sandstone in the Abadi gas field. Proc. 33rd Ann. Conv. Indon. Petroleum Assoc., Jakarta, IPA09-G-157, 10p.
*(Quartz overgrowths main cause for porosity and permeability reduction of M Jurassic Plover Fm sandstones in Abadi Field. Best porosities 15-20%)*

Matsuura, S. (2009)- Rock physics modeling optimizing well log and core data for the Abadi gas field. Proc. 33rd Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, IPA09-G-028, 14p.
*(Rock physics of Abadi 2000 gas discovery in M Jurassic Plover Sst. Seven wells by 2008)*

Matsuura, S., S. Saito, Y. Ishii, H. Honda, A. Kato & T. Yagi (2005)- Seismic reservoir characterization of the Abadi gas field, Masela PSC Block, West Arafura Sea, Eastern Indonesia. Proc. 30th Ann. Conv. Indon. Petroleum Assoc. (IPA), Jakarta, 1, p. 505-514.
*(Seismic inversion work on 2000 Abadi gas discovery. Deltaic to shallow marine Plover Fm sandstone primary reservoir. Seismic inversion provides high resolution lithological contrasts that correspond to stratigraphic boundaries. Reserve estimates and uncertainty repeatedly updated)*

McKirdy, D.M. & P.J. Cook (1980)- Organic geochemistry of Pliocene-Pleistocene calcareous sediments DSDP Site 262, Timor Trough. American Assoc. Petrol. Geol. (AAPG) Bull. 64, p. 2118-2138.
*(Late Pliocene- Holocene calcareous pelagic sediments of Site 262, S of SW Timor, 442m thick and rel. rich in organic matter (up to 1.5% TOC) of mixed marine- continental origin. Progressive uphole increase of TOC and of terrigenous vascular plant material. Biogenic methane probably present as solid methane hydrate)*

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