

# Geological Survey - H.A. Brouwer

## Hendrik A. BROUWER (1886-1973)

\* A world-class Dutch geologist, who made significant contributions to the geology of Indonesia in early 1900s, particularly the North Moluccas, Sulawesi and Timor in the 1910s - 1930s.

- with Dienst van het Mijnwezen in Batavia, 1910-1916

- Professor of Historical Geology in Delft, 1917-1928

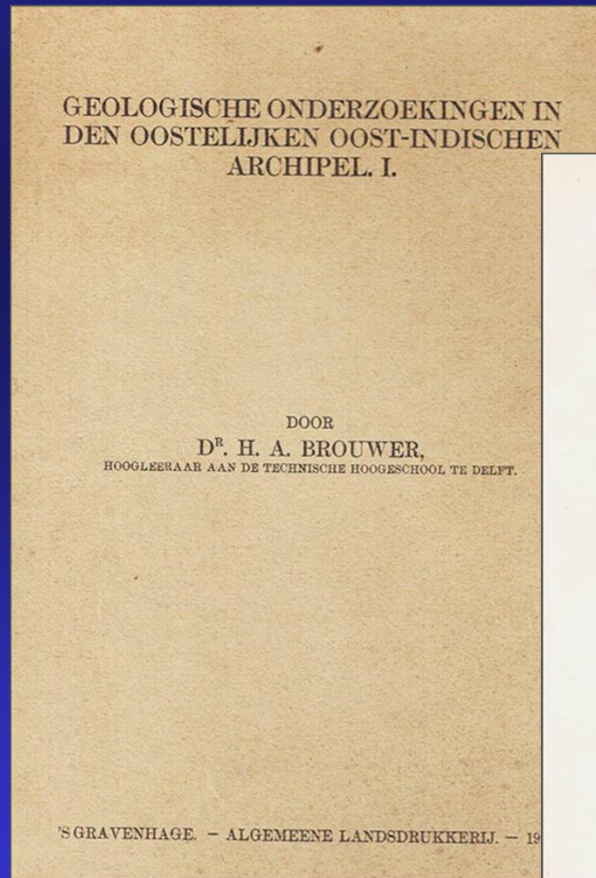
- Professor of Geology in Amsterdam, 1929-1956

\* 1929 Celebes (Sulawesi) Expedition

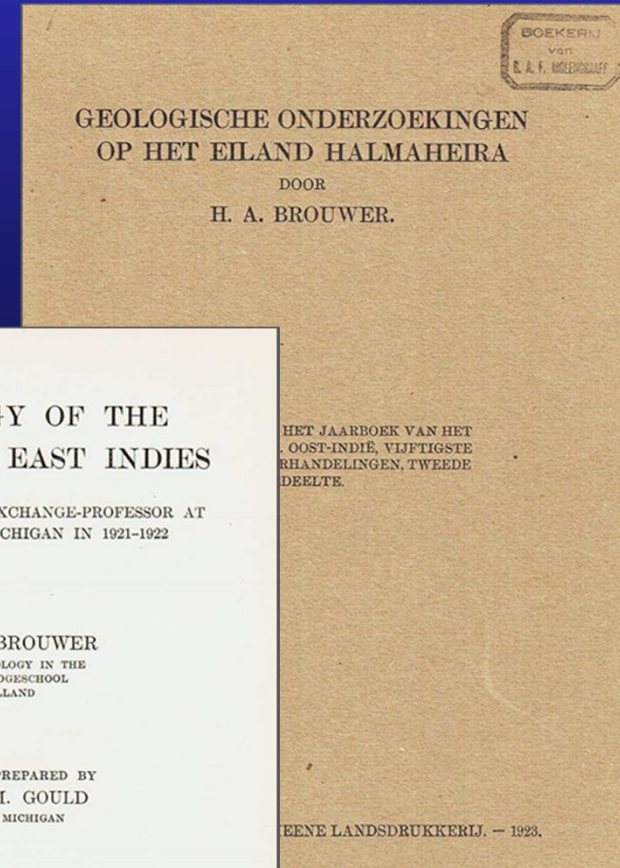
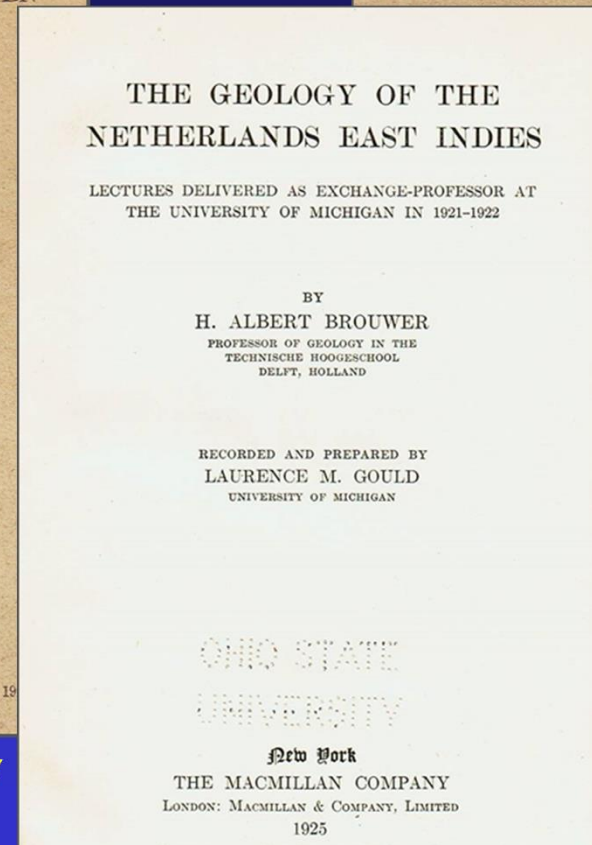
\* 1937 Timor Expedition (also in 1912, 1916)



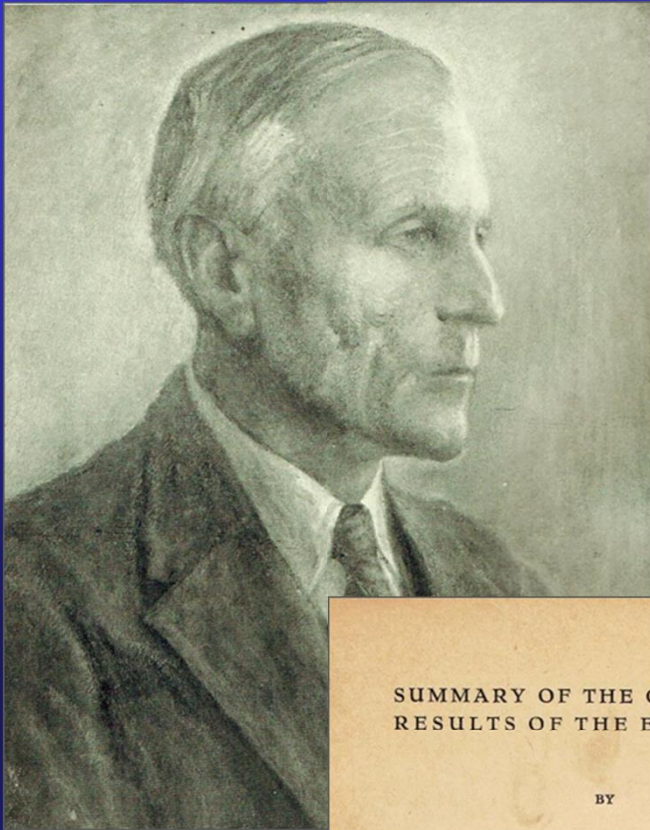
H.A. Brouwer in 1925



Brouwer (1921-1925) early papers and text-book



# Geological Survey - H.A. Brouwer



## GEOLOGICAL EXPLORATIONS

IN THE

## ISLAND OF CELEBES

BY COMMISSION OF THE NETHERLANDS EAST  
INDIES GEOLOGICAL SURVEY IN 1929  
WITH THE COLLABORATION OF  
W. H. HETZEL and H. E. G. STRAETER

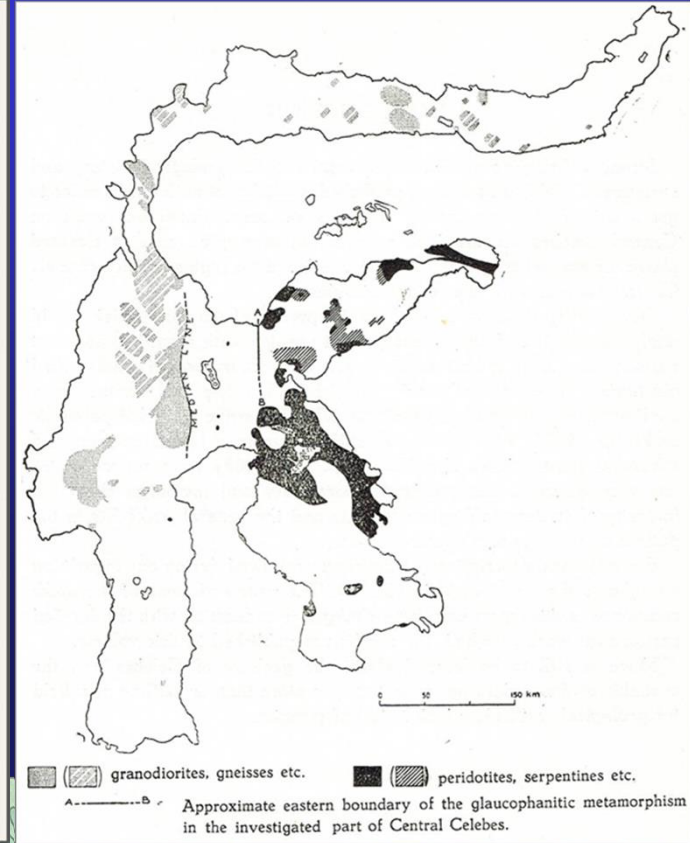
UNDER LEADERSHIP OF

**H. A. BROUWER**

PROFESSOR OF GEOLOGY AT THE  
UNIVERSITY OF AMSTERDAM

GEOLOGICAL SUMMARY  
AND  
PETROLOGY

1947  
NORTH-HOLLAND PUBLISHING COMPANY  
(N.V. Noord-Hollandsche Uitgevers Mij.)  
AMSTERDAM



## SUMMARY OF THE GEOLOGICAL RESULTS OF THE EXPEDITION

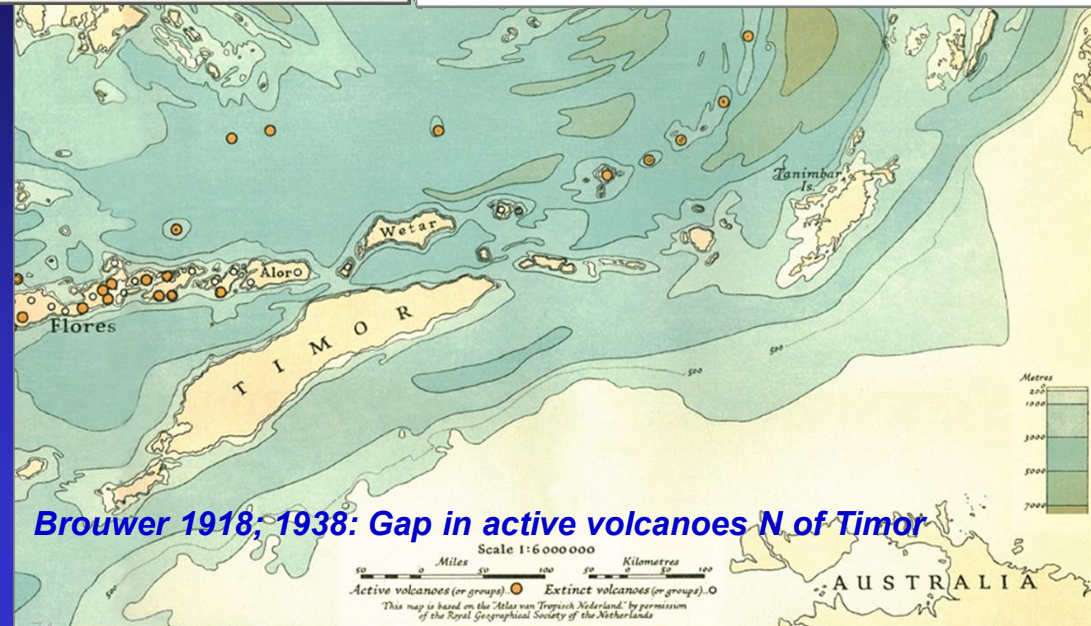
BY

**H. A. BROUWER**

REPRINTED FROM:  
GEOLOGICAL EXPEDITION TO THE  
LESSER SUNDA ISLANDS  
under leadership of H. A. BROUWER

Vol. IV, page 345-402

N.V. NOORD-HOLLANDSCHE UITGEVERS MIJ., AMSTERDAM 1942



**Brouwer 1918, 1938: Gap in active volcanoes N. of Timor**

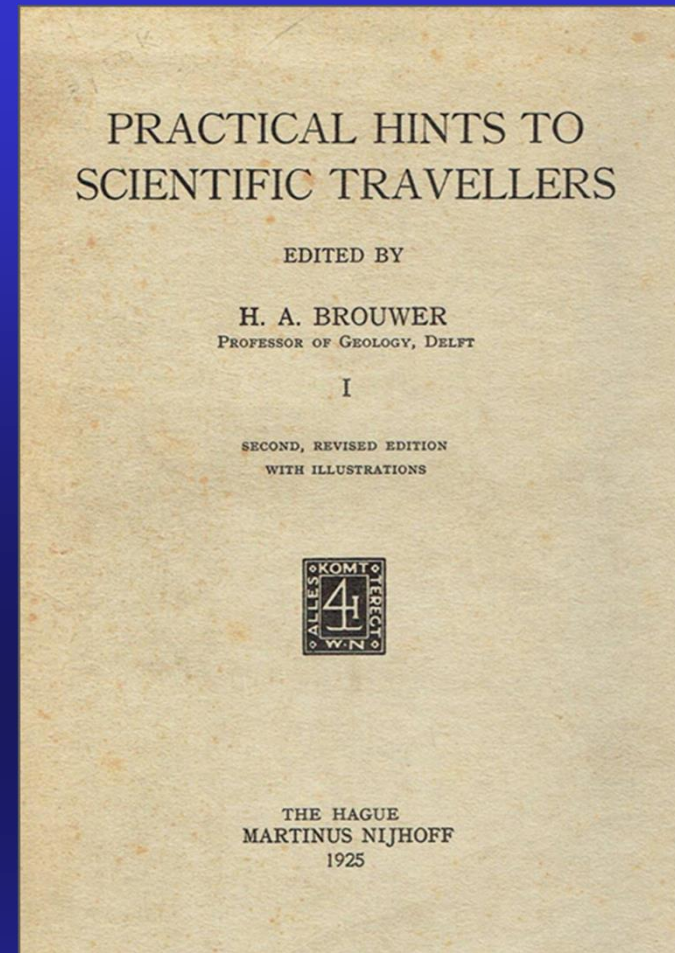
Scale 1:6 000 000  
Active volcanoes (or groups) ● Extinct volcanoes (or groups) ○  
This map is based on the "Atlas van Tropisch Nederland" by permission  
of the Royal Geographical Society of the Netherlands



In the Moluccas. Transport of scientific collections to the steamer



Simple camp for one night near a river on Timor



**Brouwer (1925) series**

## MIJNWEZEN '3rd GENERATION' – SYSTEMATIC MAPPING (from 1920s)

*Jozef ZWIERZYCKI*

*Willem F. F. OPPENOORTH*

*Carel TER HAAR*

*Wolfgang LEUPOLD*

*Reinout W. VAN BEMMELEN*

*Jan WESTERVELD*

*August C.D. BOTHE*

*Johan DUYFJES*

*W.C. BENSCHOP KOOLHOVEN*

*Louis J.C. VAN ES Jr*

*K.A. Friedrich R. MUSPER*

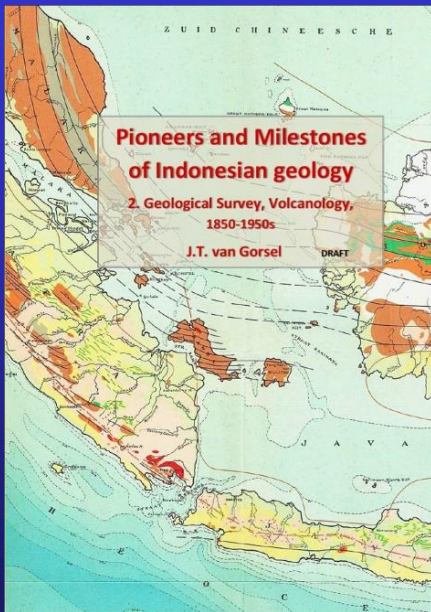
*Wilhelm H. HETZEL*

*Johannes F. VAN TUIJN*

*C. P.A. ZEIJLMANS VAN EMMICHOVEN*

*Johannes G.H. UBAGHS*

*Charles E.A. HARLOFF*



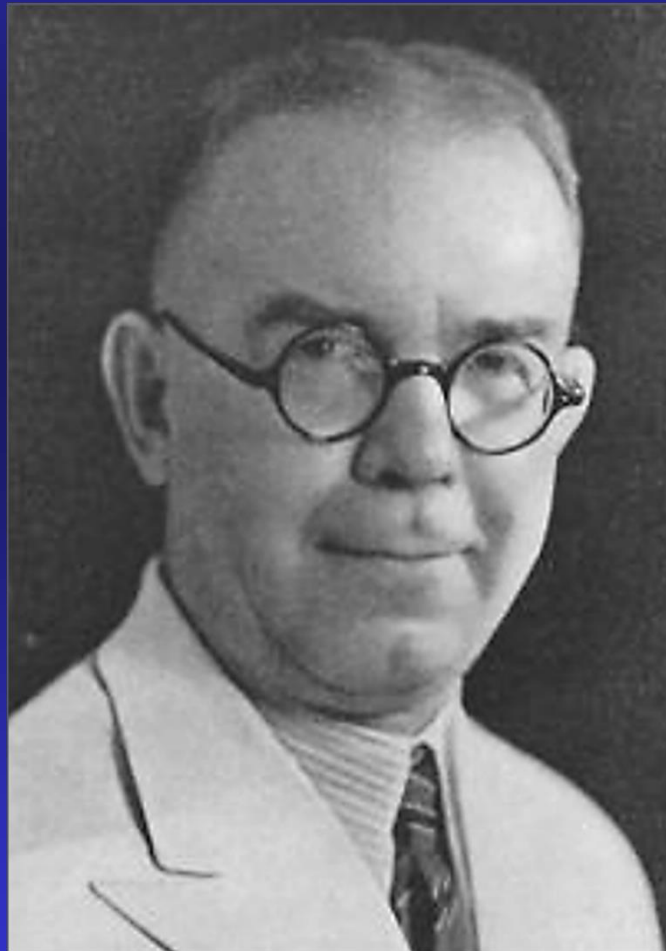
## Geological Survey - J. Zwierzycki

### Josef ZWIERZYCKI (1888-1961)

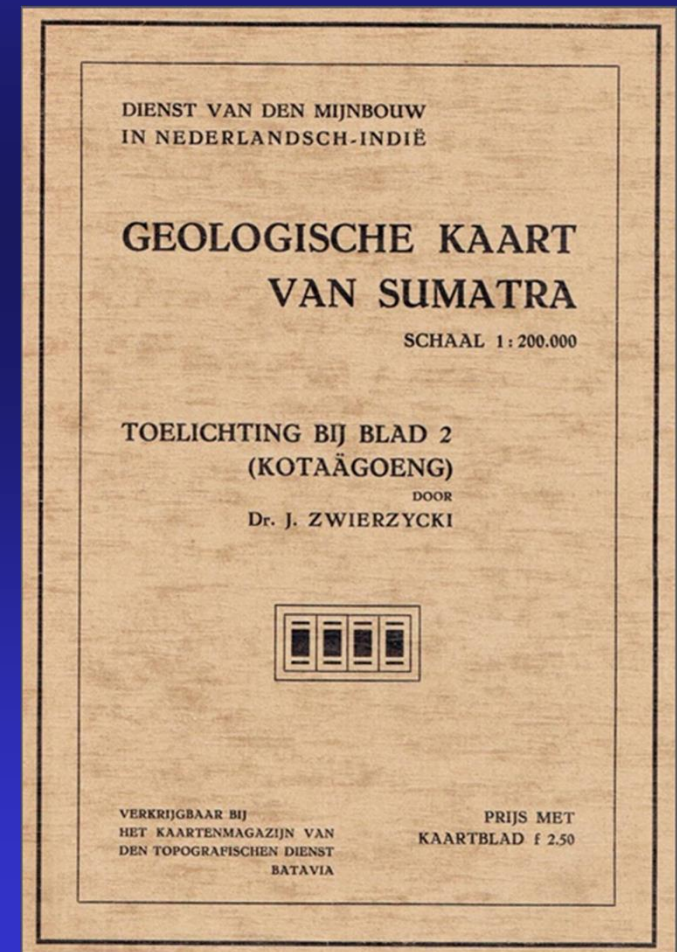
- \* Polish geologist, with 24-year career at the Geological Survey (1914-1938).
- \* Probably the second-most productive geologic map maker in Netherlands Indies after R. Verbeek
- \* Head of the Geological Survey department in Bandung from 1935-1938.
- \* Followed by an eventful late career in Poland during World War II and after



Arriving in Java, 1914



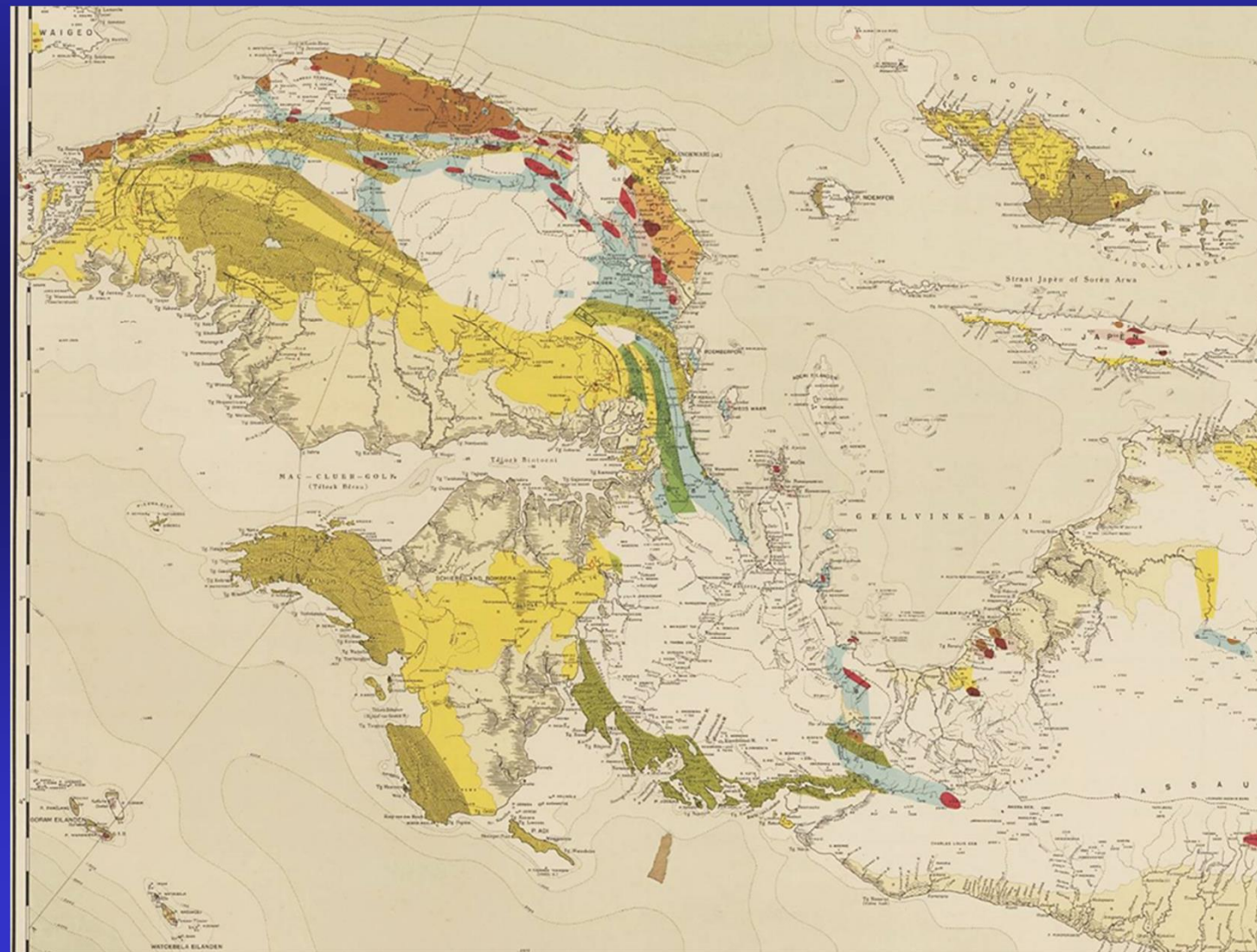
Zwier in the 1930s



# Geological Survey - J. Zwierzycki

## Josef ZWIERZYCKI

- \* **Extended mapping surveys in North Sumatra (1914-1919), N New Guinea (1920-1922), E Sulawesi (1924),**
- **6 sheets of the Geological overview map of the Netherlands Indies, 1: 1 million (1922-1932)**
- **Geotectonic map of the Netherlands East Indies (1:5 Million scale)**
- **Head of Sumatra kaartering (1927-1932) and Java kaartering (1933-1935)**



## GEOLOGISCHE OVERZICHTSKAART VAN DEN NEDERLANDSCH-INDISCHEN ARCHIPEL.

Toelichting bij de bladen XIV en XXI  
(Noord- en Zuid-Nieuw-Guinea).

BEWERKT DOOR

Dr. J. ZWIERZYCKI.

Oversdruk uit het Jaarboek van het Mijnwezen in N. I.,  
66ste jaargang, 1927, Verhandelingen 1ste gedeelte.

Handbibliotheek  
Geologisch Instituut  
Wageningen

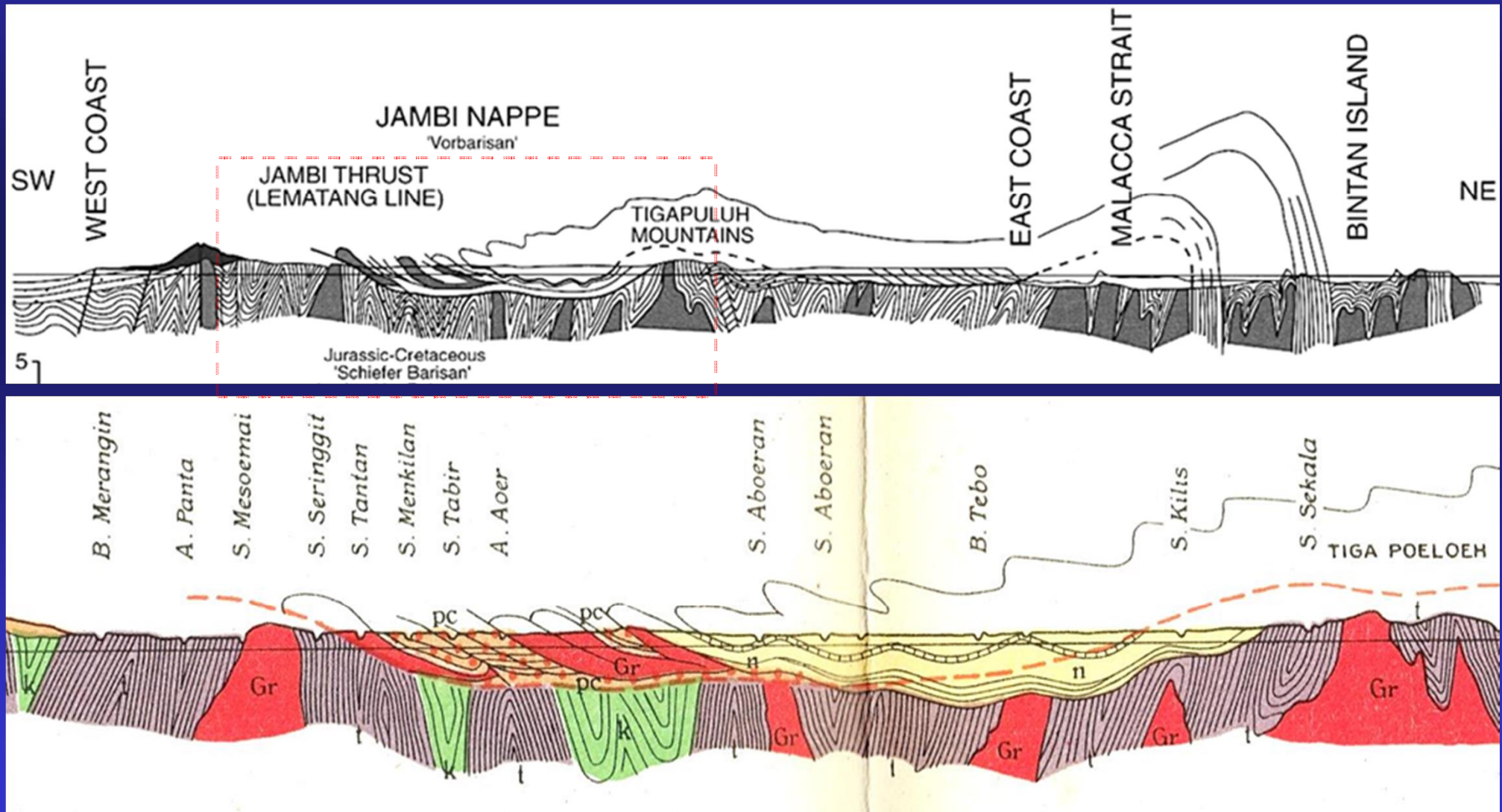
LANDSDRUKKERIJ—1928—WELTVEEDEN.

**Zwierzycki, J. (1932)- Geologische  
overzichtskaart 1: 1,000,000. Blad  
XIII (Vogelkop, W New Guinea**

# Geological Survey - J. Zwierzycki

## J. ZWIERZYCKI : The Sumatra nappe tectonics model

- \* After leading the 1925 Paleobotanic Djambi expedition, collecting 'Cathaysian' Permian plant fossils Zwierzycki saw evidence for Tobler's alpine-style nappes tectonics in Sumatra (Zwierzycki, 1930)
- \* Model accepted by Van Bemmelen (1949), but after 1960s Katili, Pulunggono and Cameron, Barber and Crow, etc. instead promoted models of Sumatra being composed of a mosaic of microplates of different origins.





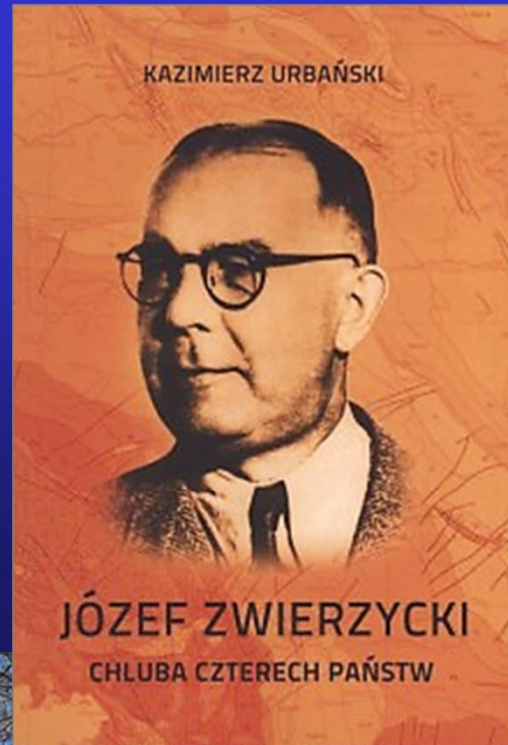
***In the field in East Java with members of the Java mapping team in July 1934:  
Ir. C. Ter Haar, Ir. J. Duyfjes, Dr. J. Zwierzycki and Dr. Ralph von Koenigswald***



# Geological Survey - J. Zwierzycki back in Poland

## National hero in Poland (1938-1961)

- \* Deputy Director of the Geological Institute in Warsaw, 1938-1941
- \* imprisoned in Auschwitz in 1941-1942 for resistance against Germans
- \* Instrumental in rebuilding geology programs in Breslau/ Wroclaw and Krakow, 1945-1960.



Zwierzycki in Auschwitz, 1941



Boulevard Jozef Zwierzycki in Wroclaw, 2019

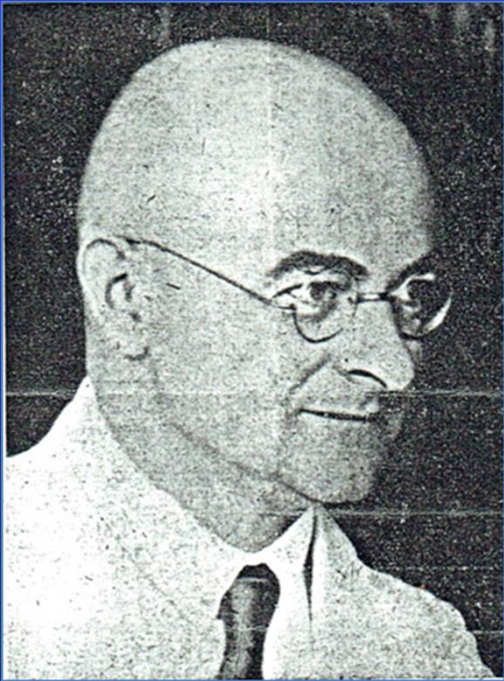
## Geological Survey - J. Zwierzycki back in Poland



*Jozef Zwierzycki monument at the Geological Institute of the University of Wrocław, 2019 (with Dr. Anna Gorecka-Novak, Dr. Alina Chrzastek)*

*J. Zwierzycki grave, Wrocław*

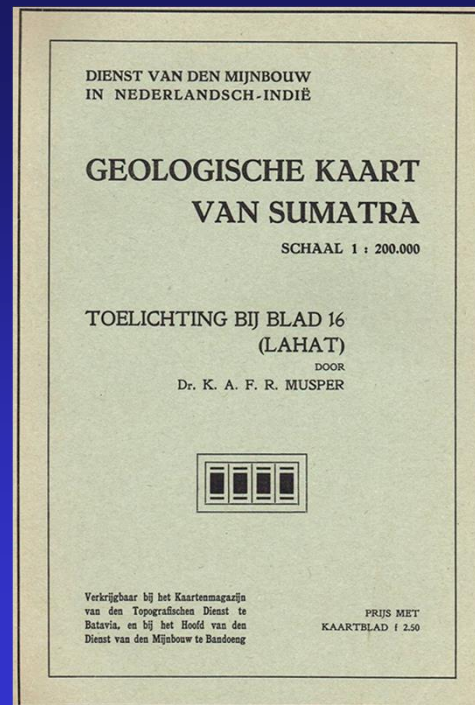
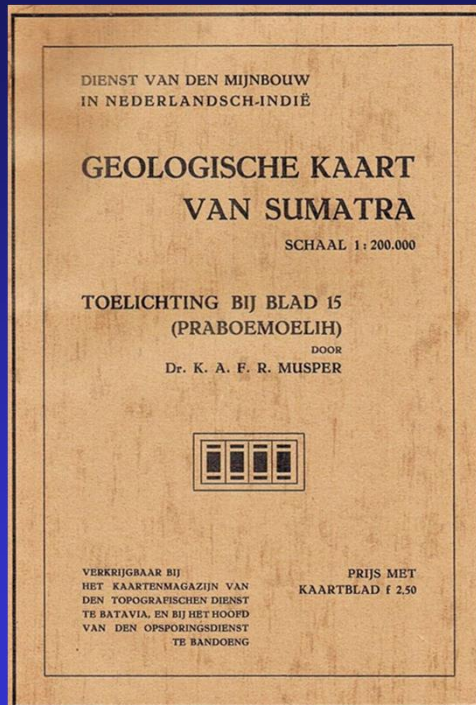




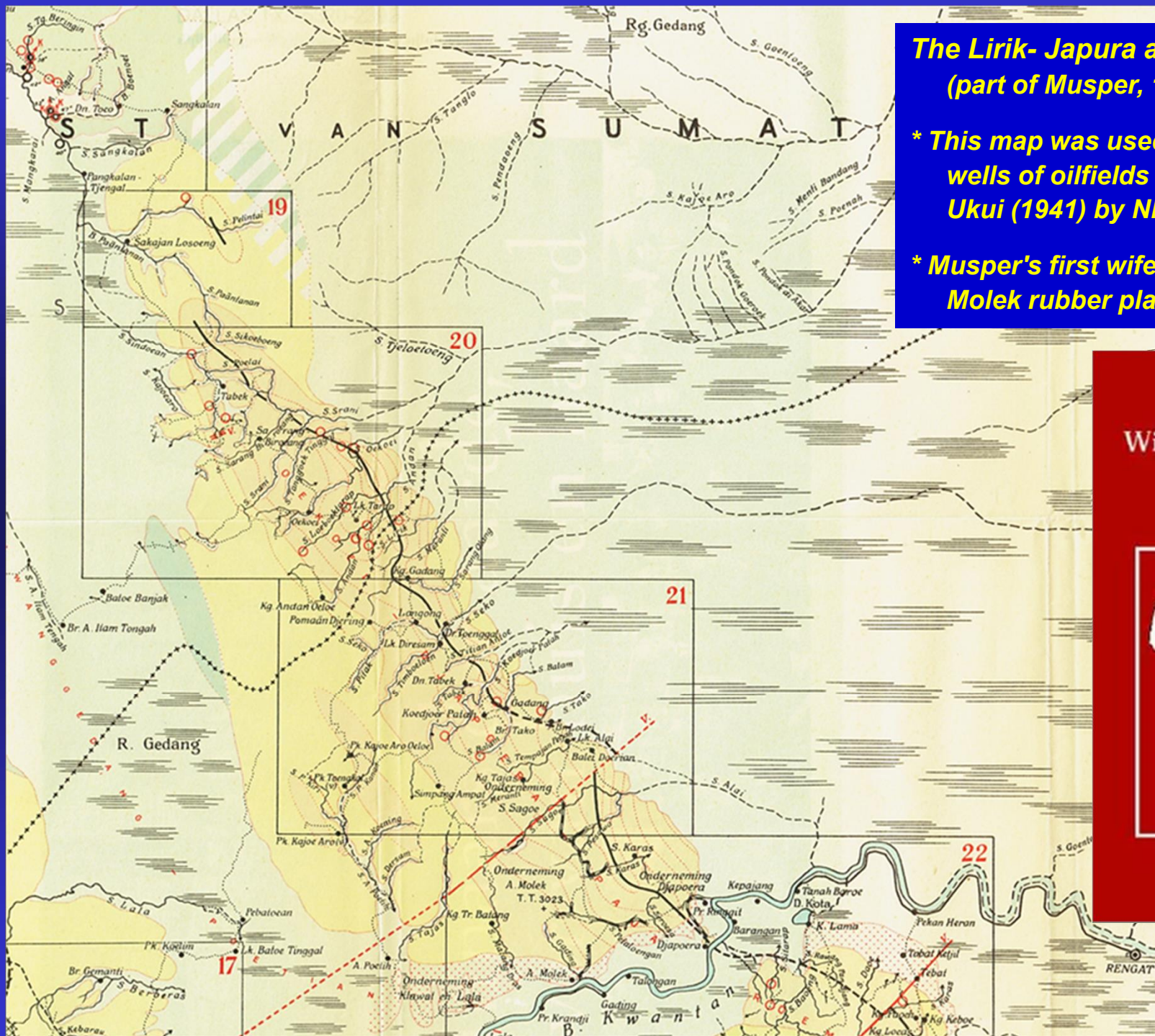
F. Musper in the 1930s

## K.A.F.R. (Fritz) MUSPER (1892-1943)

- \* One of the less known and most underappreciated geologists from Geological Survey. Meticulous geologist, with multiple tragic personal events
- \* Studied geology in Munich and Tubingen, Germany, 'war geologist' in the German Army at the end of World War I, 1918
- \* With Dienst van den Mijnbouw from 1922-1940
  - Indragiri and Pelawan mapping Project, Sumatra, based in Taluk, 1922-1926
  - Bandung Head Office, 1926-1940 (S Sumatra Mapping 1929-1932, Oil and gas fields of Indonesia project)
- \* Arrested by Netherlands Indies authorities on 10 May 1940, imprisoned on Java
  - deported to Surinam in January 1942 with 146 other German/ NSB prisoners
  - died of tropical disease in 'Jodensavanne' prison camp in Surinam in 1943



# Geological Survey - K.A.F.R. Musper



**The Lirik- Japura anticline, C Sumatra  
(part of Musper, 1928 map)**

**\* This map was used to drill the discovery  
wells of oilfields Lirik (1939), Japura and  
Ukui (1941) by NKPM/ Stanvac.**

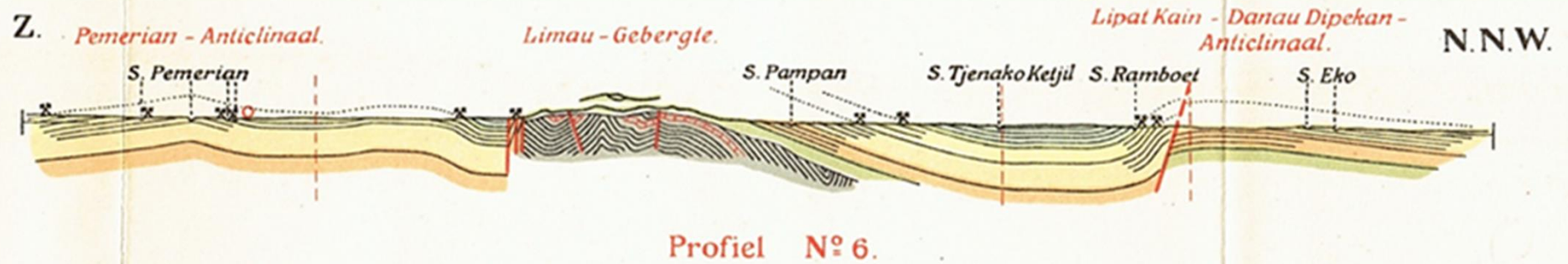
**\* Musper's first wife was buried at the Air  
Molek rubber plantation in 1924**

**Wie weit bis Airmolang?**

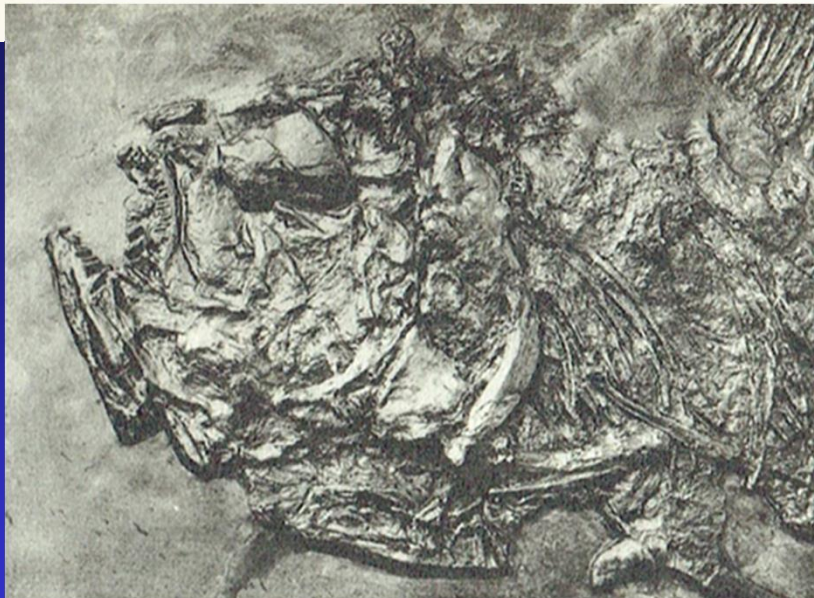
Gerhard Keppner



Roman

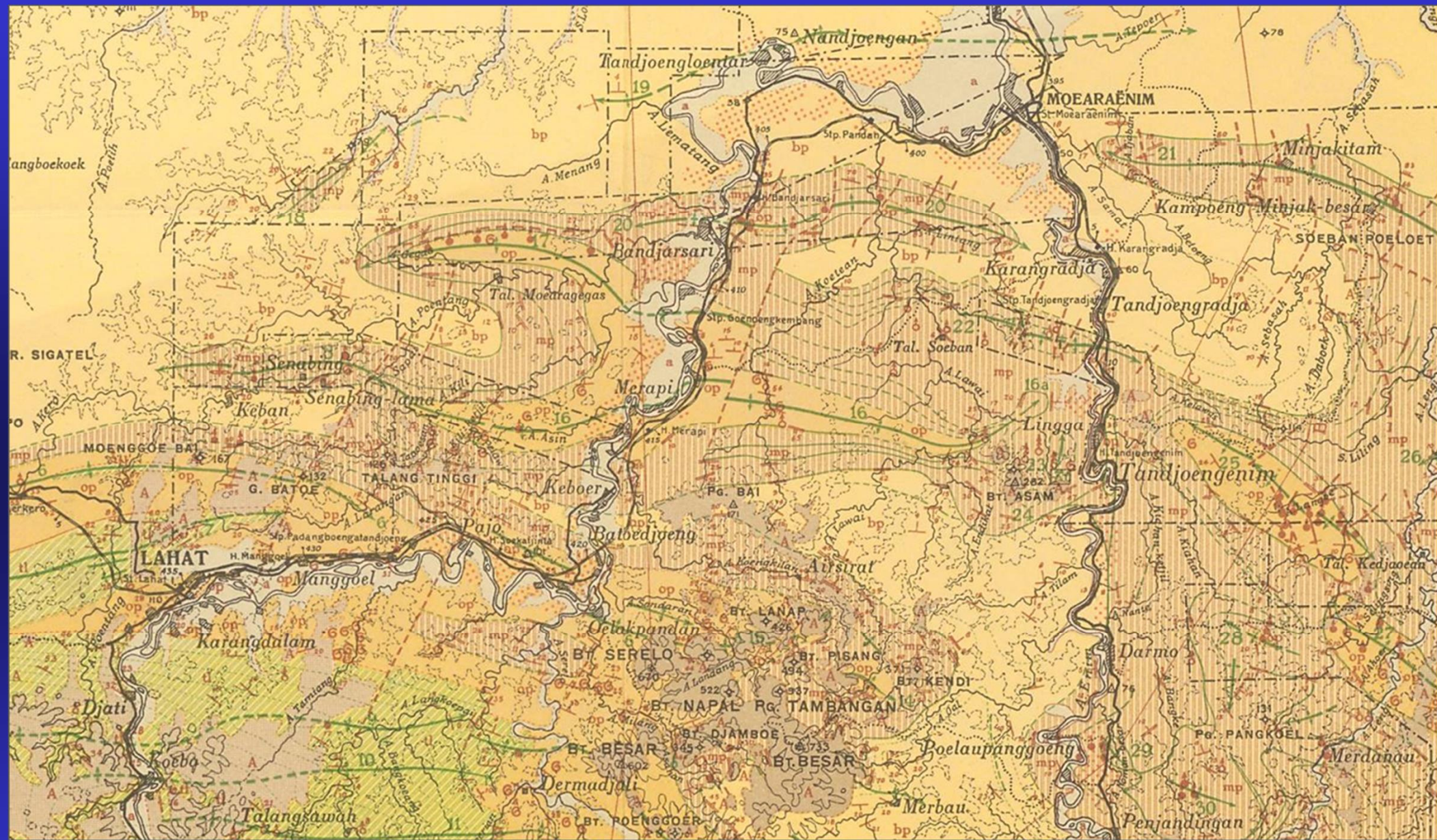


CENTRAL SUMATRA CROSS SECTIONS (Musper, 1928)



*Eocene lacustrine bone fish from Ombilin Basin, W Sumatra, collected by Musper in 1927. Described as Musperia by Sanders (1934)*

a. MUSPERIA RADIATA (HEER). Samml. Musper 457. Kopf von der linken Seite. Stark verkl.



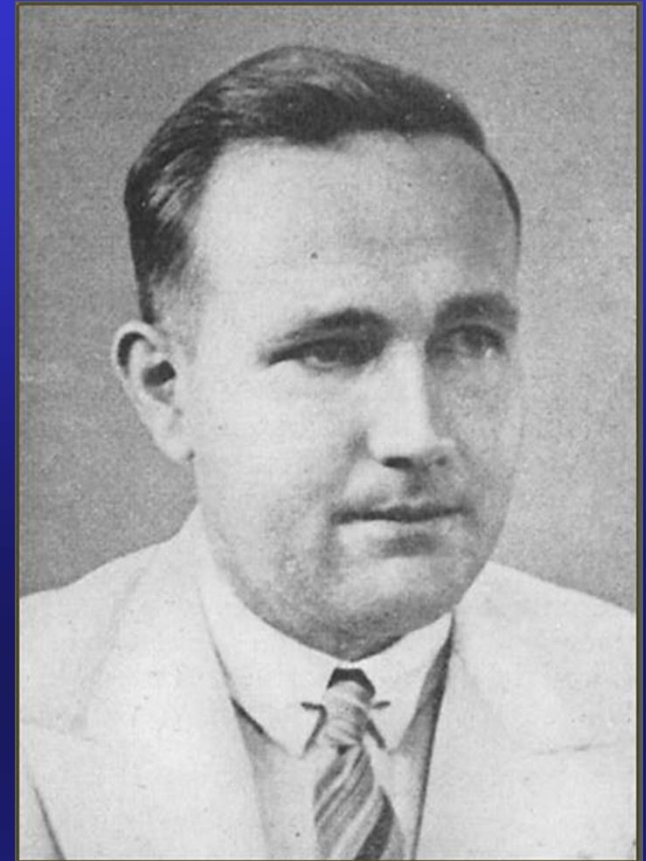
**Lahat geologic map, S Sumatra (Musper (1937; part)**

**\* showing en-echelon anticlinal structures in Miocene sediments, between Lahat and Muara Enim**

## **Geological Survey - R. van Bemmelen**

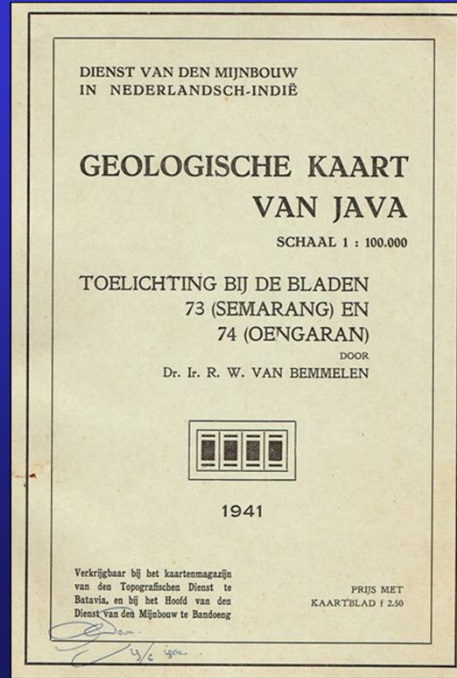
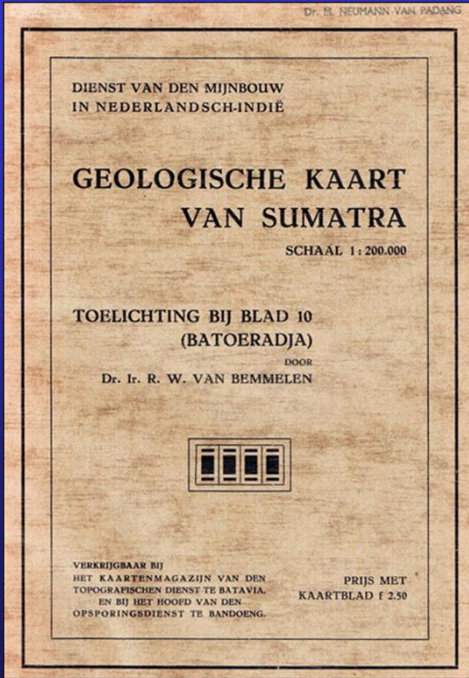
### **Reinout W. VAN BEMMELEN (1904-1983)**

- \* Studied mining engineering at Technische Hogeschool Delft , with doctorate under Profs. Molengraaff and Brouwer**
- \* With Dienst van den Mijnbouw in Bandung from 1927-1946**
  - South Sumatra mapping Project, 1928-1933**
  - leave of absence, 1934-1936**
  - Java Mapping Project, 1936-1941**
  - Head of the Volcanological Survey department, 1941-1942, 1945-1946**
- \* Commisioned by Dutch Government to write a comprehensive summary of the knowledge of The Geology of Indonesia, 1946-1949**
- \* Lecturer and Professor of Economic Geology, University of Utrecht, 1949-1969**

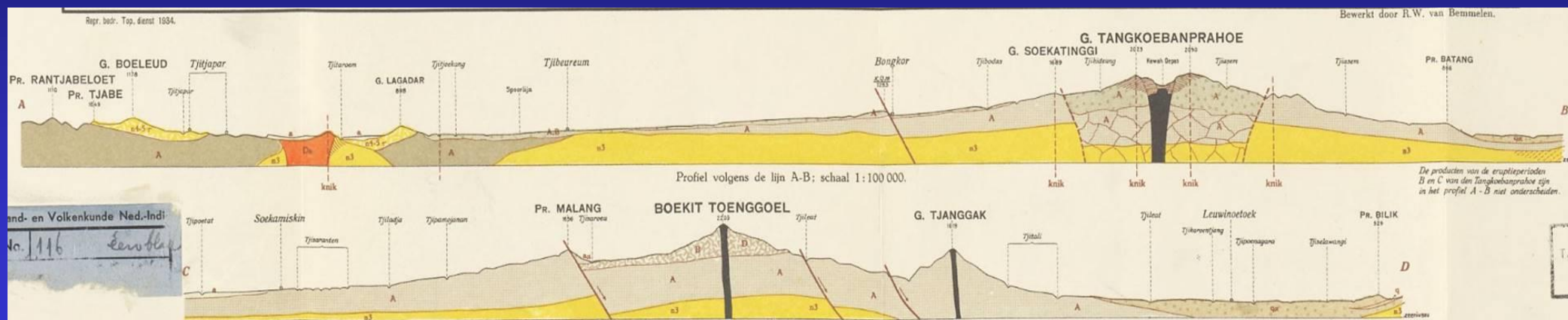
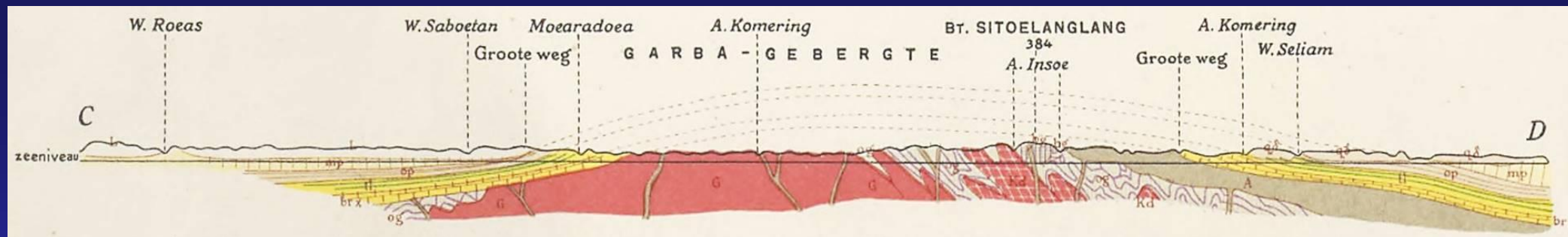


**R.W. van Bemmelen in 1930s**

# Geological Survey - R. van Bemmelen



Geological maps produced for Sumatra and Java mapping projects, supervised by J. Zwierzycki

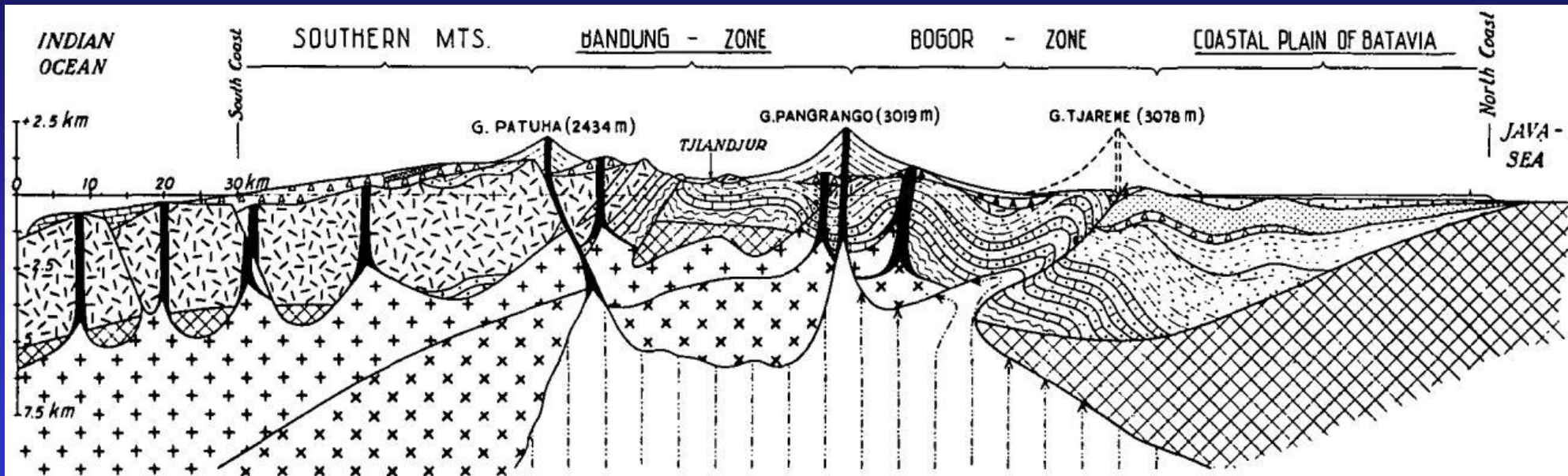
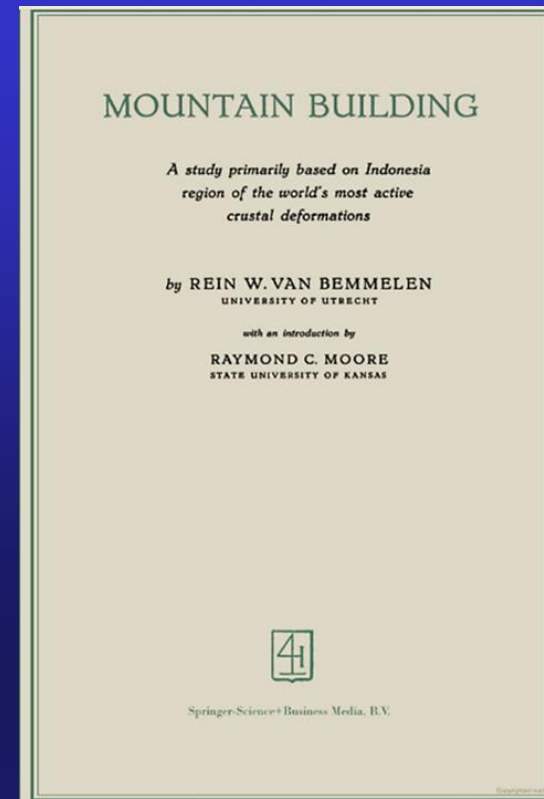
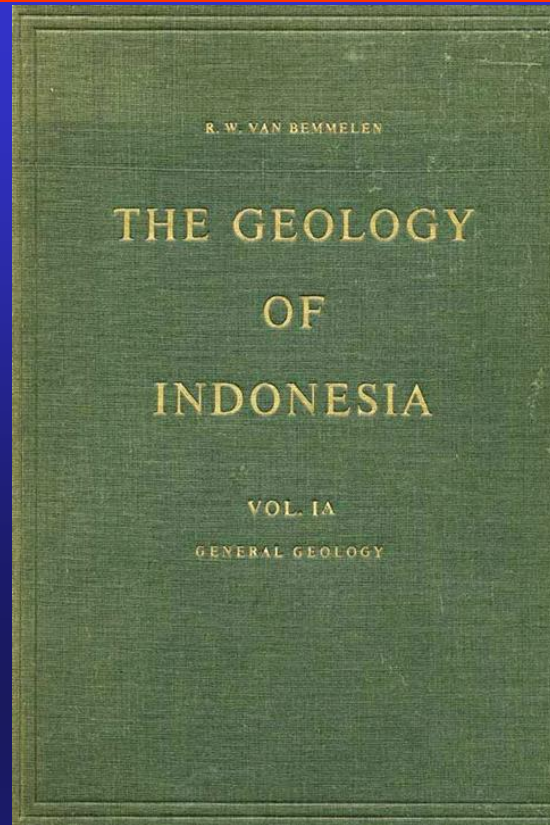




# Geological Survey - R. van Bemmelen

'Big Picture' guy

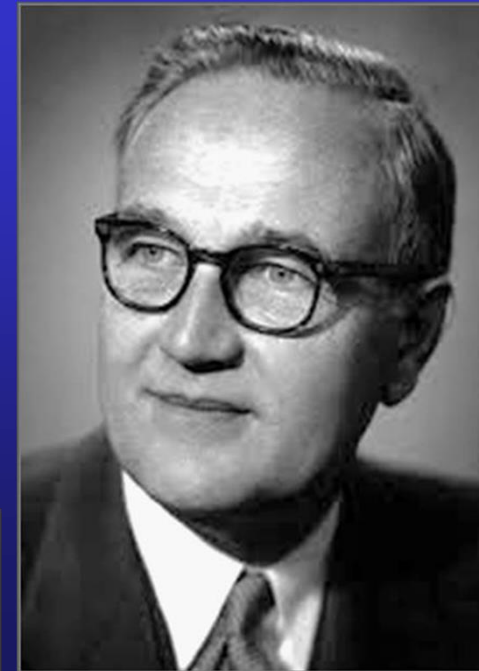
- \* *Undation Theory (1931 and many later updates)*
  - never found much acceptance among peers
  - Van B. never accepted Plate Tectonics
- \* *The Geology of Indonesia textbook (1949)*



# Geological Survey - R. van Bemmelen

## Man of Mystery?

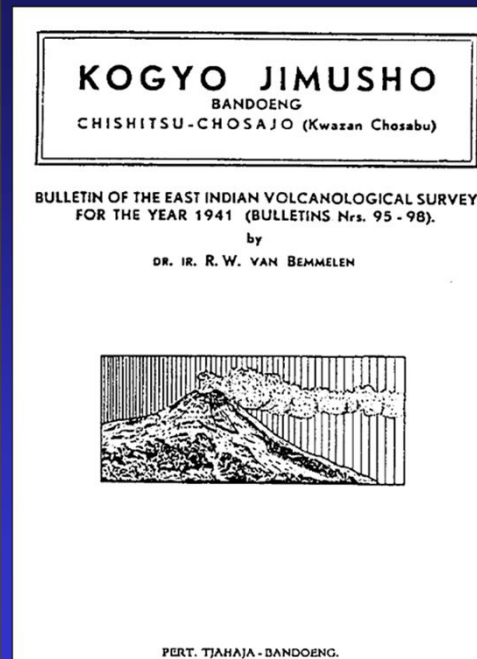
- \* Continued to work for Japanese until end of 1943 (and later?), when most of his colleagues were in prison camps or dead?
- \* How did he manage to write his 1000+ page textbook in 2-3 years time in a small apartment in The Hague?
  - rumors of missing pre-war manuscripts and a possible German version of book, ready to be printed in Berlin in 1945?
- \* Circumstances of wife's death in The Hague in 1983, remarried and died in Austria, 1983



van Bemmelen in ~1951



Bandung, late 1942 or early 1943



## **Geological Survey - R. van Bemmelen - 1943**

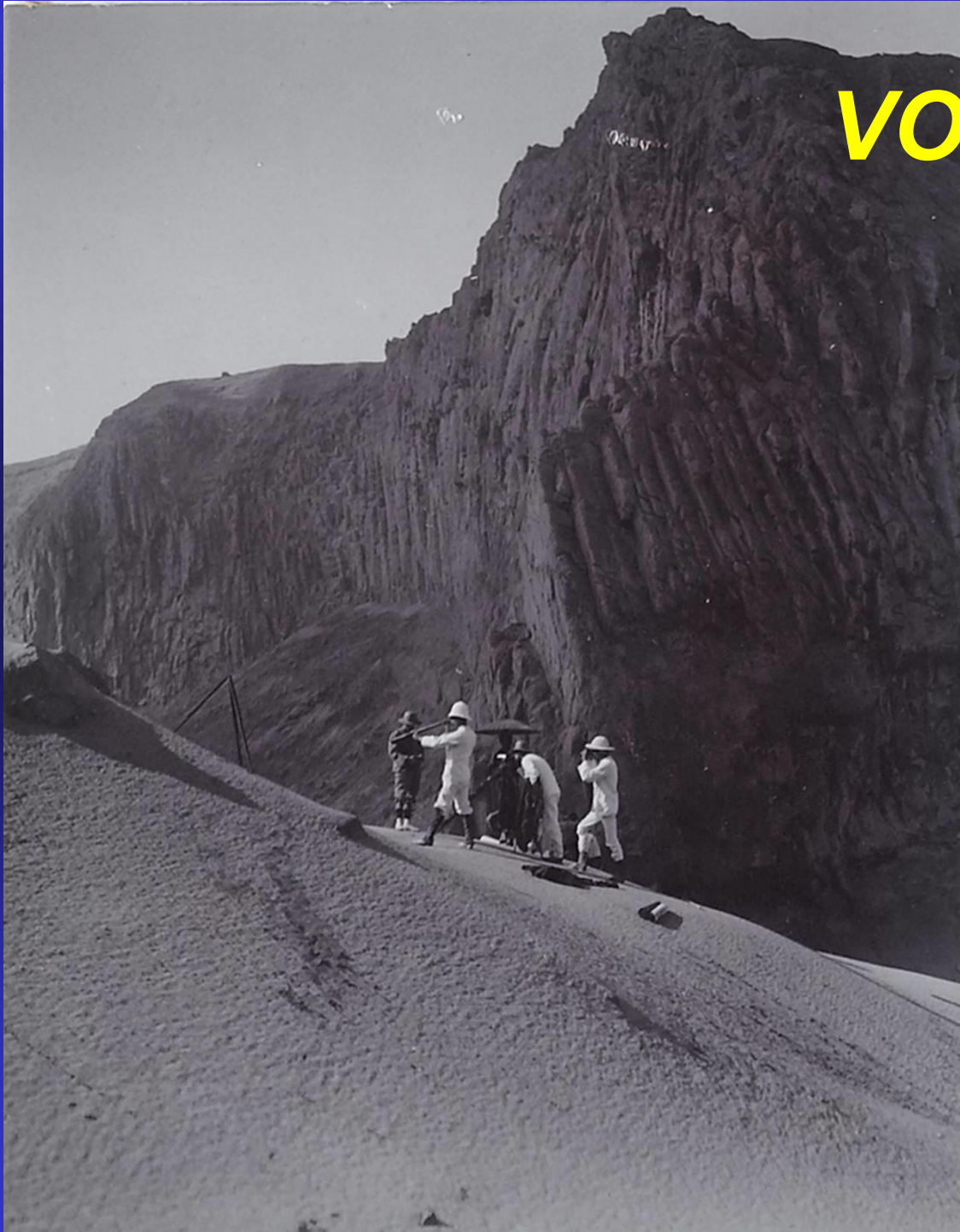


**Dutch geologists as Japanese prisoners-of-war at the Geological Survey in Bandung, probably in 1943.**

**Standing: J.T. Kingma  
Dr. W. van Tongeren  
Dr. R.W. van Bemmelen**

**Seated: Ir. M.E Akkersdijk,  
Dr. R. von Koenigswald  
Ir. G. Pott  
Dr. Bogaart**

**(photo courtesy Geological Museum,  
Bandung).**



# ***VOLCANOLOGY***

*Kelud 1901 post-eruption survey*

**VOLCANOLOGICAL SURVEY DEPARTMENT**

*Georges L.L. KEMMERLING*

*Berend G. ESCHER*

*Nicolaas J.M. TAVERNE*

*Charles Edgar STEHN*

*Maur NEUMANN VAN PADANG*

*Wladimir A. PETROESCHEVSKY*

*Also: F. Junghuhn, R. Verbeek, A. Wichmann, R.W. Van Bemmelen*



*Taf. X. zu Junghuhn's Reisen.*

*Verlag von Emil Baensch & Magalh.*

*Lith. u. Druck v. E. Baensch jun. & Magalh.*

**NORDSEITE DES MERAPI**

**VOLCANOLOGY**

**Georges L.L. KEMMERLING**

**Nicolaas J.M. TAVERNE**

**Maur NEUMANN VAN PADANG**

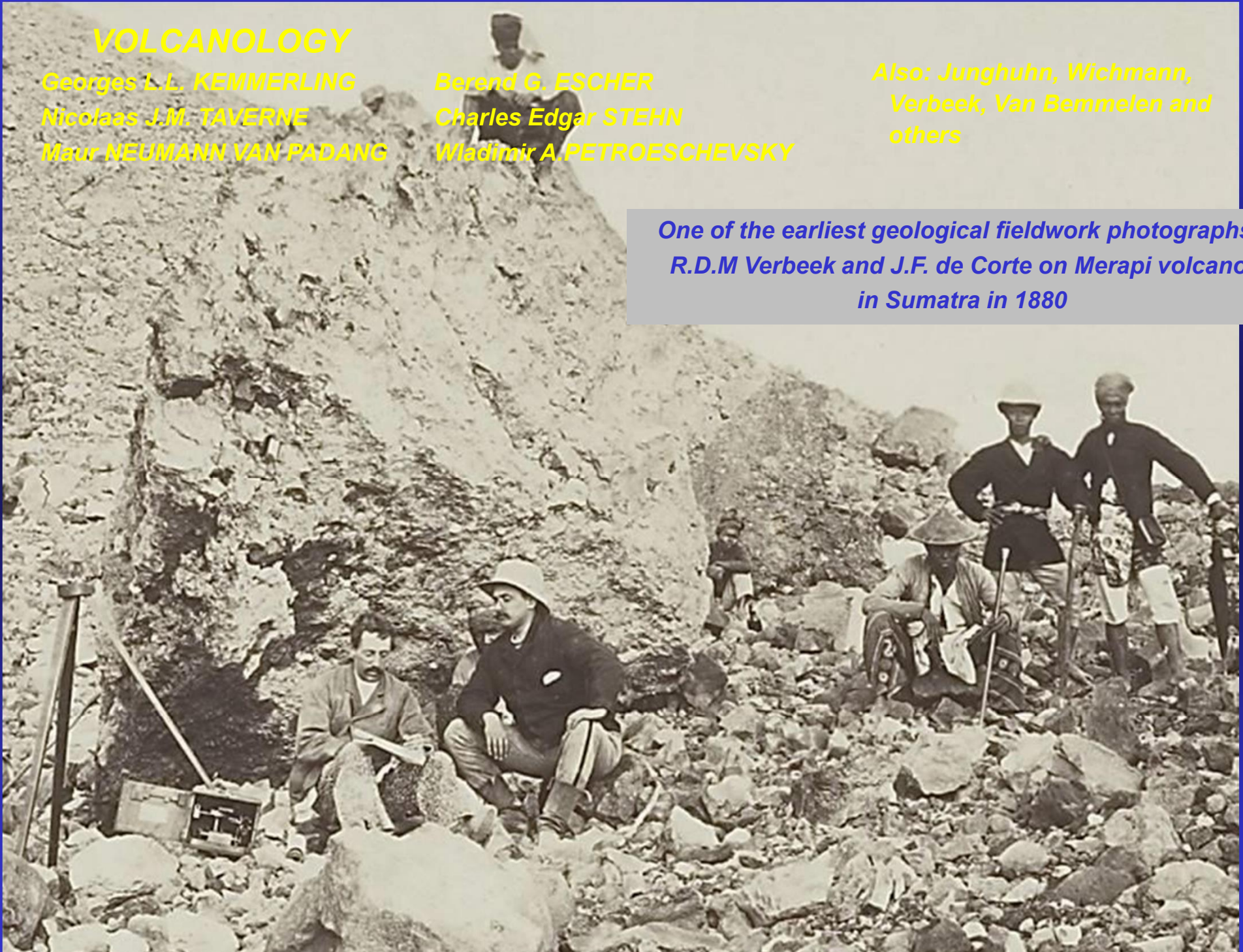
**Berend G. ESCHER**

**Charles Edgar STEHN**

**Wladimir A. PETROESCHEVSKY**

**Also: Junghuhn, Wichmann,  
Verbeek, Van Bemmelen and  
others**

**One of the earliest geological fieldwork photographs:  
R.D.M Verbeek and J.F. de Corte on Merapi volcano  
in Sumatra in 1880**



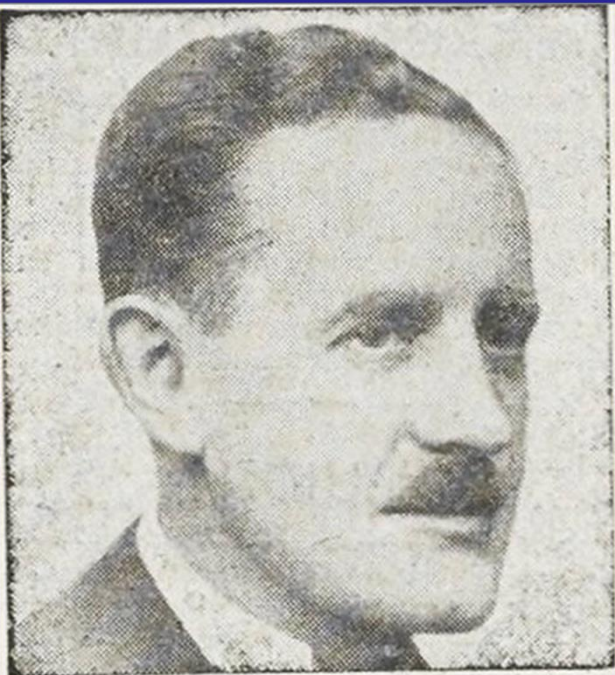
*Kelud 1901 post-eruption*



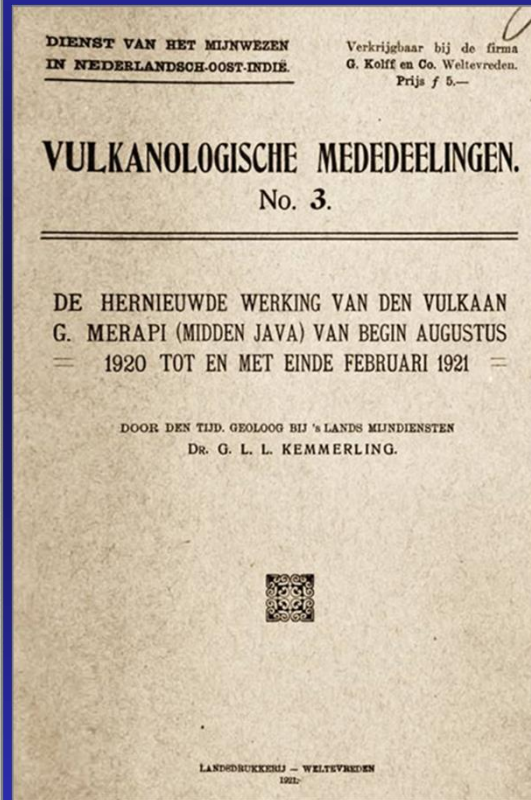
# Pioneers- Vol. 2: Volcanology - G. Kemmerling

**Georges L.L. KEMMERLING (1888-1932)**

- \* Studied geology in Germany, at Bergakademie (Mining Academy) of Freiberg, Saxony and at the Albert-Ludwigs University of Freiburg im Breisgau
- \* After an early stint as petroleum geologist with NKPM from 1911-1913, joined the Dienst van het Mijnwezen in 1916, working on New Guinea mapping and Java-Bali volcano surveys  
- the first Mijnwezen employee with a geology degree, instead a mining engineering background



**Dr. G. L. L. KEMMERLING, oud-chef van den Vulkanologischen Dienst in Ned. Indië, is in den leeftijd van 44 jaar overleden.**



- \* After high-profile work on the Kelud volcano in East Java after the May 1919 catastrophic eruption he became the first Head of the Volcanological Survey Department in 1920.

After home leave in 1923 Kemmerling was charged with a mapping project of Flores and Sumba in 1924-1925  
- left on medical leave in 1926, and never fully recovered; died at the relatively young age of 44 in Amsterdam



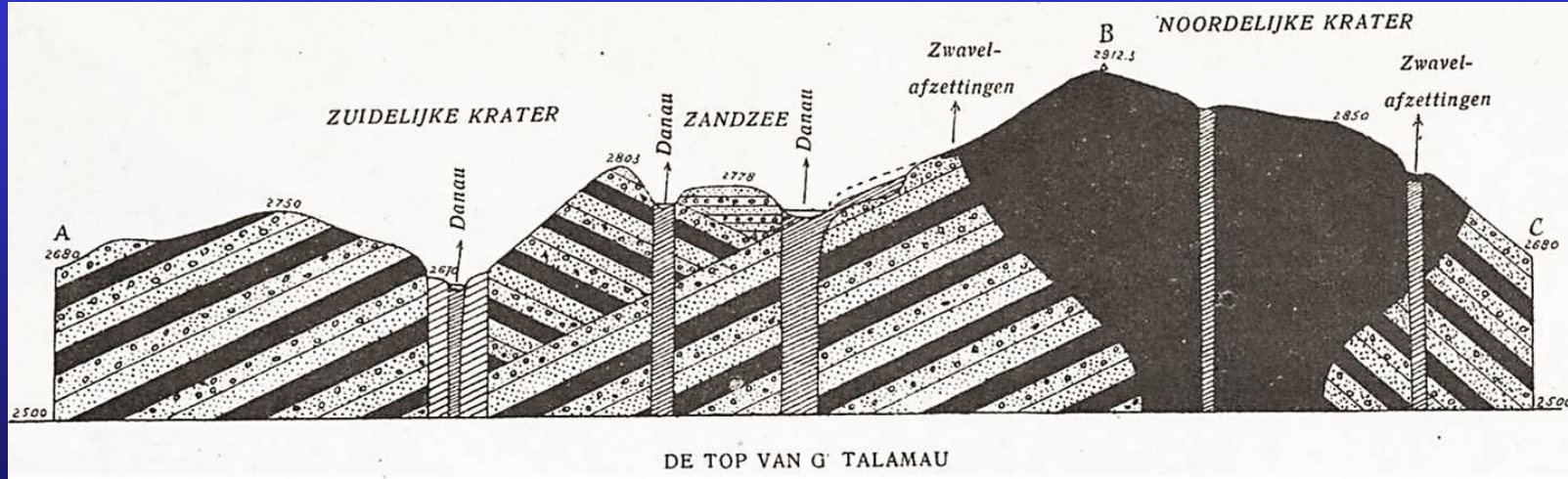
## ***Pioneers- Vol. 2: Volcanology - G. Kemmerling***

***The Kemmerling survey party at the Kelud volcano, 4 days after the 19-20 May 1919 eruption.  
Viewing the ash-covered hills and lahar-clogged river valley (Collectie Tropenmuseum).  
The lahar killed >5000 people in the Blitar area***

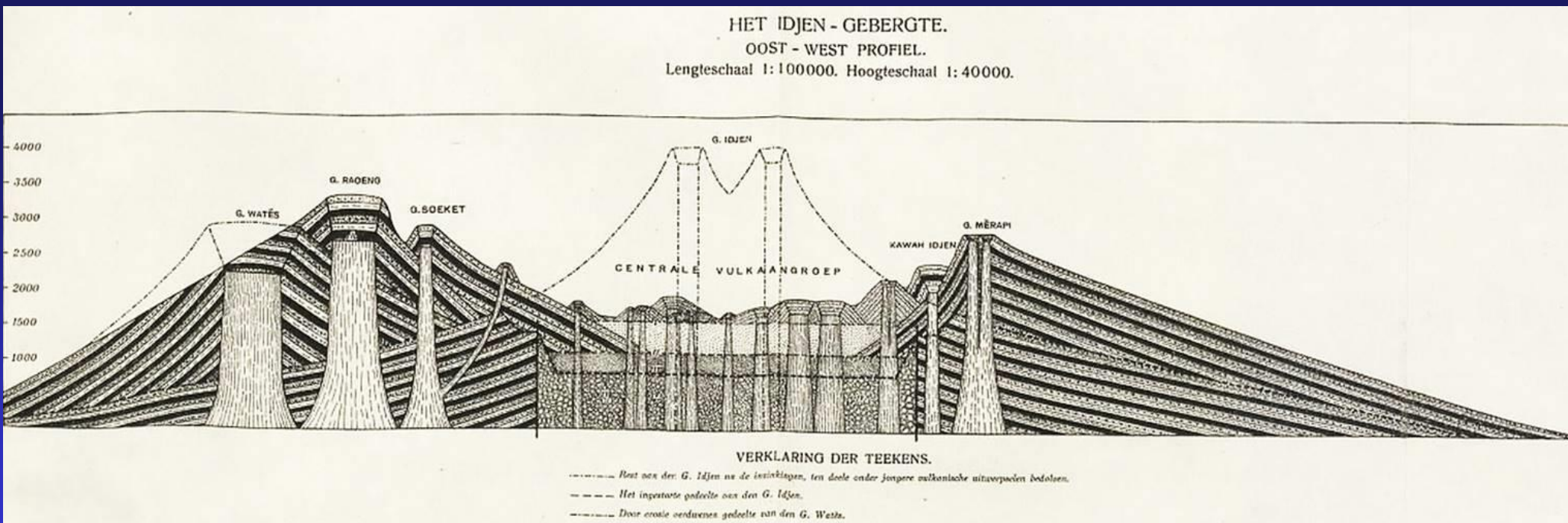


# Pioneers- Vol. 2: Volcanology - G. Kemmerling

G.L.L. Kemmerling: the first Head of the Volcanological Survey Department, 1920



Schematic cross-section Talamau volcano, Sumatra (Kemmerling, 1921)

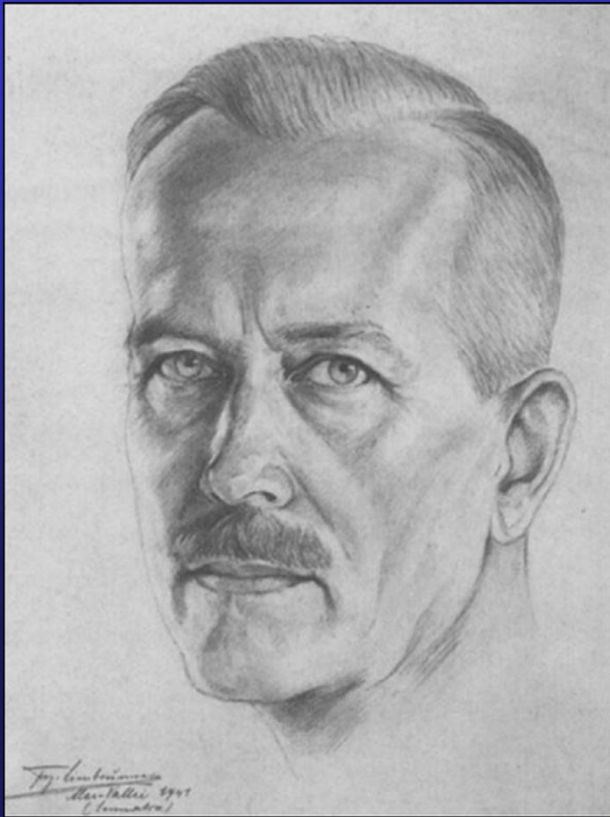


Schematic cross-section Idjen volcano complex, East Java (Kemmerling, 1925)

## *Pioneers- Vol. 2: Volcanology - Stehn, Neumann van Padang*

*C. Stehn and M. Neumann van Padang  
with Volcanology staff in Bandung, 1930s*





## Charles E. STEHN (1884-1945)

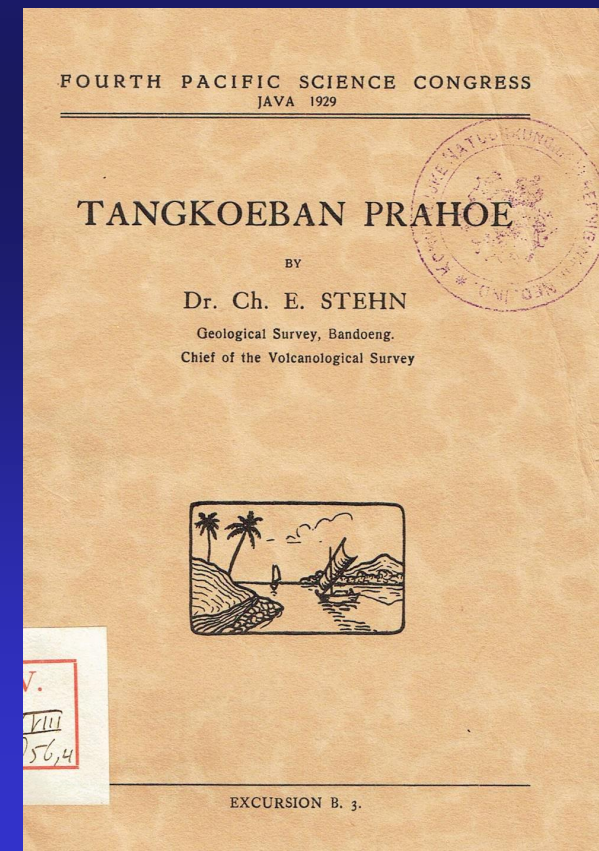
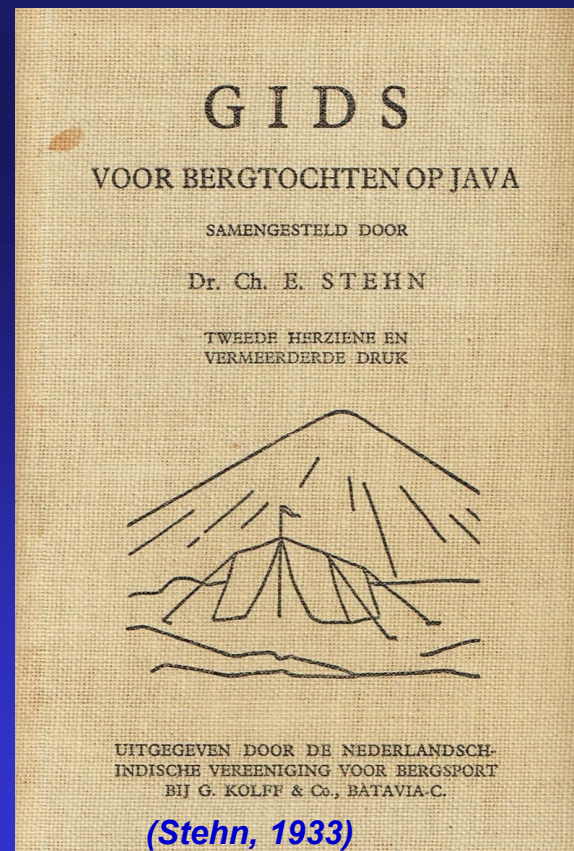
- \* Studied geology in Germany, 1914-1918 served in the German Army as a 'War geologist'
- \* Geologist- Volcanologist in Batavia and Bandung, 1921-1940
  - Head of Volcanology Department since 1926
  - carried out 150 field surveys to 41 volcanoes across all of Indonesia
- \* Arrested in May 1940, with other Germans and alleged nazi-sympathizers
- \* Moved from prison camp in Sumatra to British India in December 1941
  - died in prisoner of war camp in India in May 1945



### PERSONALIA.

De overplaatsing van ir. M. E. Akkersdijk naar het Bedrijf der Bangka Tinwinning is ingetrokken.

Dr. Ch. E. Stehn, Hoofd van het Vulkanologisch Onderzoek, is om reden van 's Lands belang ontslagen.





***C.E. Stehn in 1937, in front of the pumice-covered, stranded ship in harbor of Rabaul, New Britain, PNG***

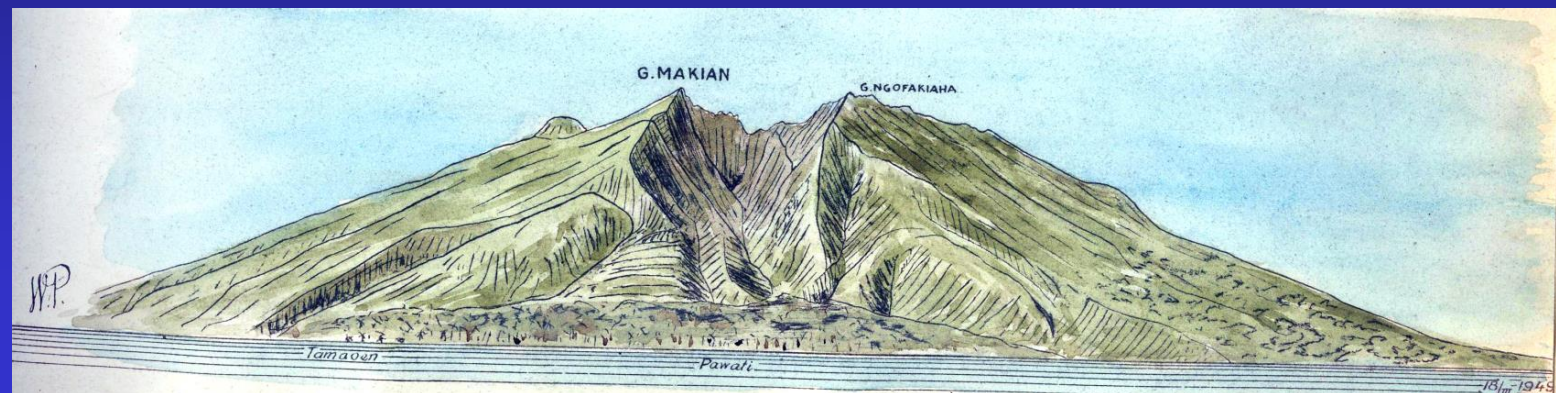
## Pioneers- Vol. 2: Volcanology- Russian 'Assistant volcanologist'



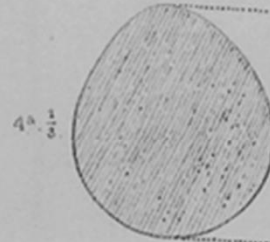
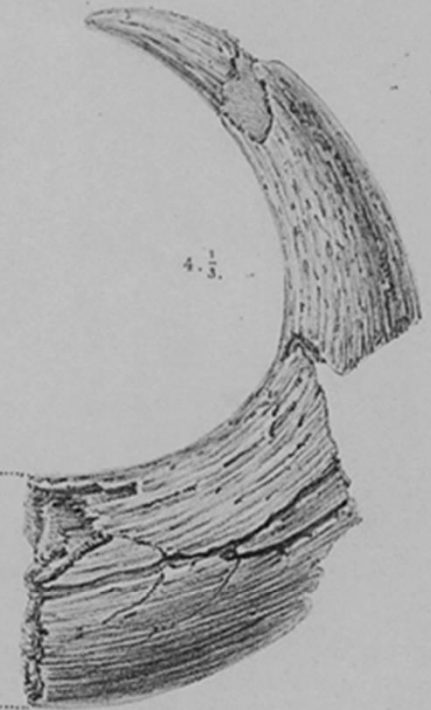
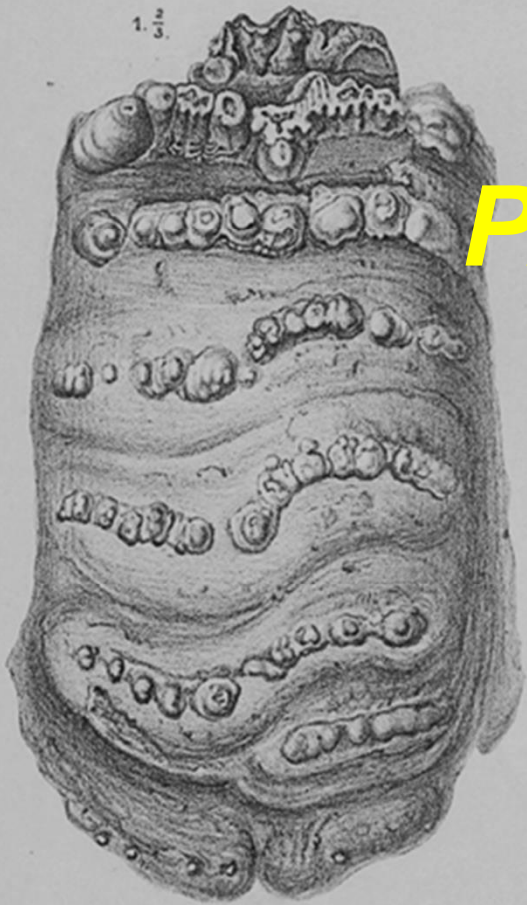
**Volcano observer Petroeschewsky in 1920s**

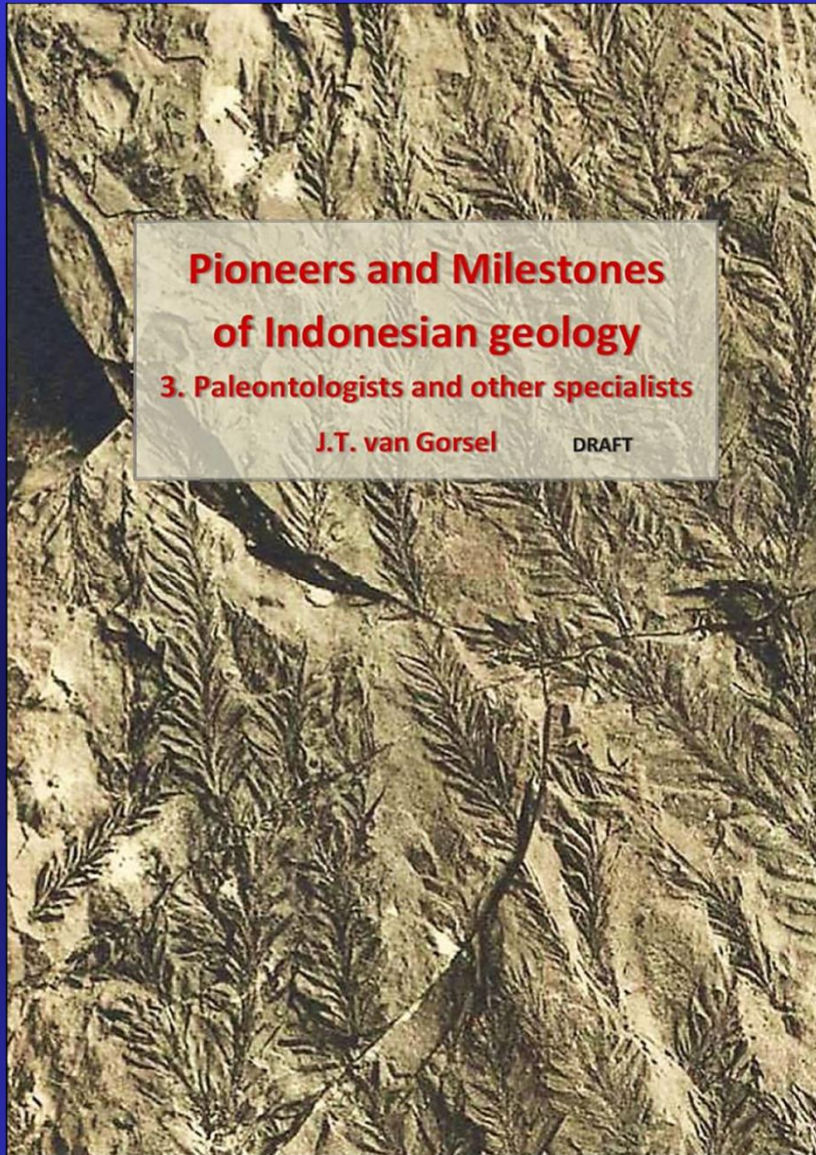
**Wladimir A. PETROESCHEVSKY (1891- 1961)**

- \* **Born in Moscow in Russian noble family**
- \* **Russian Imperial Army officer 1911-1918. After Russian Revolution colonel in anti-communist 'White Army',**
- \* **Escaped from Siberia to Netherlands Indies in 1920, stateless**
- \* **In 1921 hired for the Volcanological Survey department for volcano monitoring duties**
- \* **Head of Volcanological Survey department in Bandung from 1942-1945, and from 1946 until retirement in 1950**



PALEONTOLOGISTS





## **MAMMALS- HOMINIDS, PALEOBOTANISTS**

**M. Eugene F.T. DUBOIS**

**G.H. Ralph VON KOENIGSWALD**

**J. Heinrich R. GOEPPERT**

**Wilhelmus J. JONGMANS**

**M. Lenore SELENKA**

**Dirk A. HOOIJER**

**Oswald HEER**

**Oene POSTHUMUS.**

## **MASTERS OF PALEONTOLOGY**

**H. Ernst BEYRICH**

**Oskar BOETTGER**

**Hanns Bruno GEINITZ**

**August ROTHPLETZ**

**J. Karl MARTIN**

**Lothar E.N. KRUMBECK**

**Ernst STOLLEY**

**Johannes WANNER**

**Erich JAWORSKI**

**Johannes H.F. UMBGROVE**

**Martin G. RUTTEN**

**W.S.S. VAN BENTHEM JUTTING**

**Rogier D.M. VERBEEK (Pal.)**

**Karl W. G. VON FRITSCH**

**C. Ferdinand VON ROEMER**

**Ferdinand BROILI**

**Friedrich VOGEL**

**Carl DIENER**

**Paolo E. VINASSA DE REGNY**

**Curt A. HANIEL**

**A. Heinrich P. GERTH**

**C.H. OOSTINGH**

**Teiichi KOBAYASHI**

## **PIONEERS OF MICROPALAEONTOLOGY**

**Henry B. BRADY**

**Richard J. SCHUBERT**

**Henri DOUVILLE**

**Isaak M. VAN DER VLERK**

**TAN SIN HOK**

**Louis A.J. BAKX**

**Heinrich K.E.A. KUPPER**

**Jacobus T. KINGMA**

**C. Geoffrey ADAMS**

**Wilhelm A. MOHLER**

**Hisakatsu YABE**

**George J. HINDE**

**Charles SCHLUMBERGER**

**Louis M.R. RUTTEN**

**C.M. Bramine CAUDRI**

**Willem Frederik KRIJNEN**

**Thomas REINHOLD**

**Lubbertus BOOMGAART**

**Martin F. GLAESSNER**

**Hans THALMANN**

**Leslie W. LEROY**

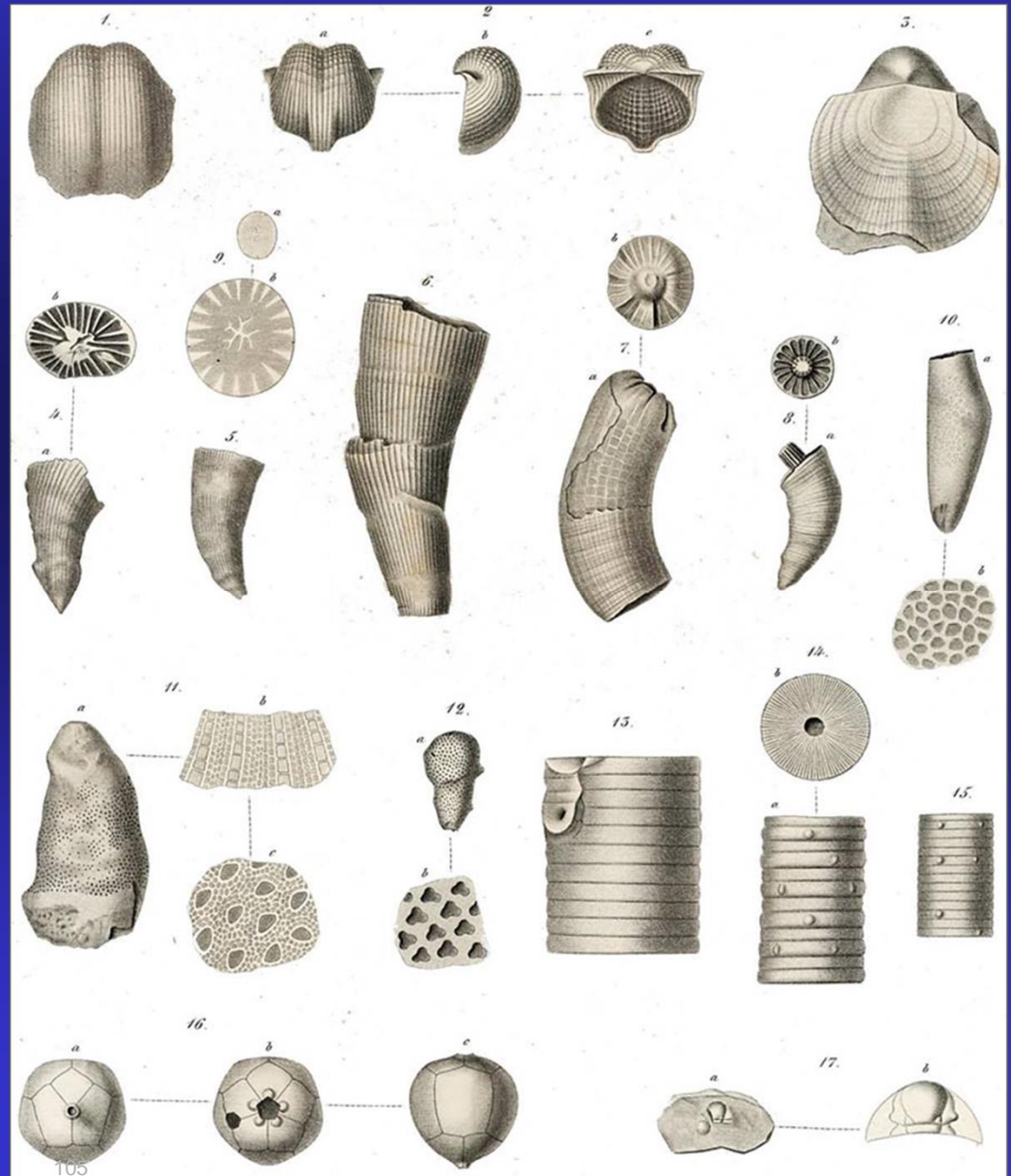
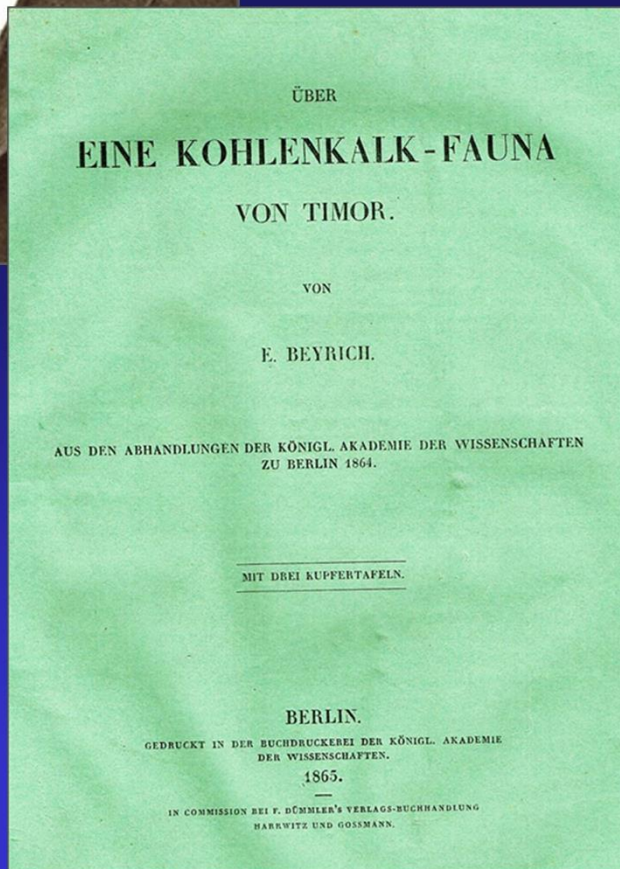
**Shoshiro HANZAWA**



# Pioneers- Vol. 3: Paleontologists - E. Beyrich

## Ernst BEYRICH (1815-1896)

- \* Professor in Berlin and Curator of the Berlin Paleontological Collection
- \* The first ever Late Paleozoic fossils described from Indonesian region in 1865 (Timor; collected by Dr. Schneider)

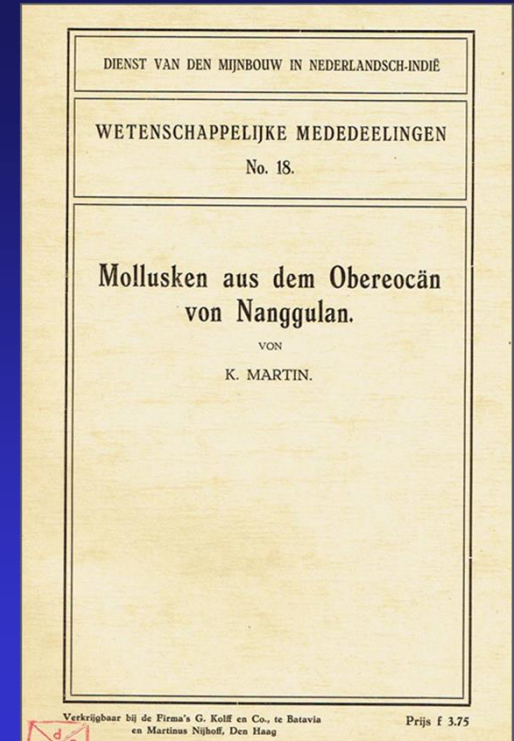
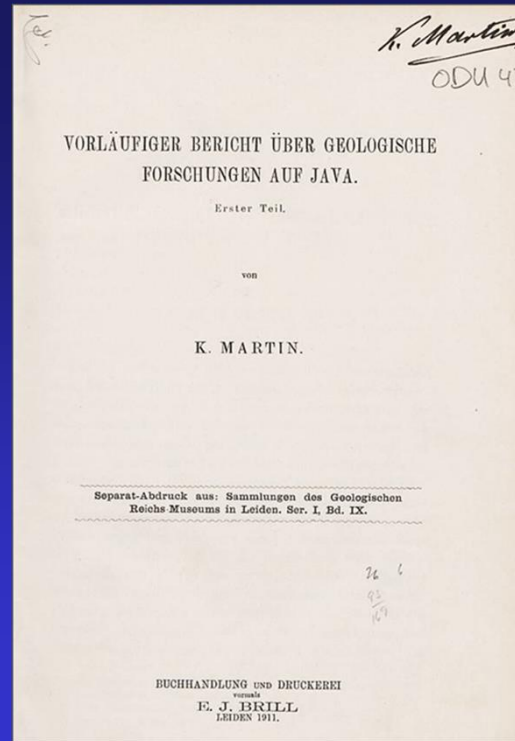
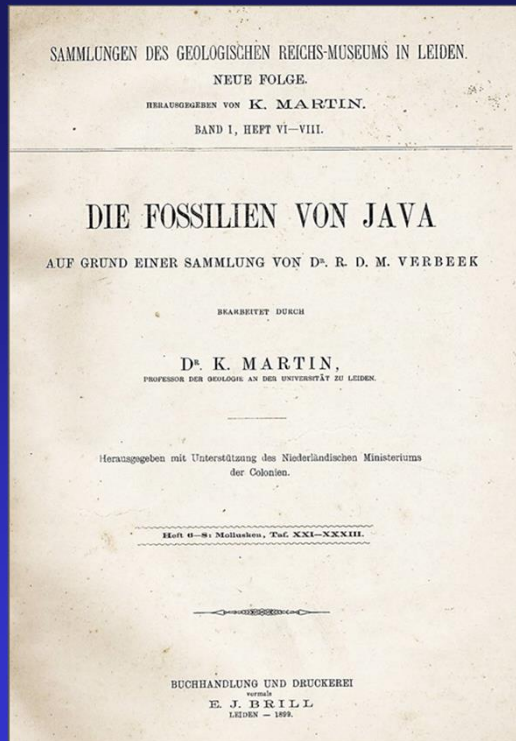




**K. Martin in 1902**

## **Karl L. MARTIN (1851-1942)**

- \* **German paleontologist, with long career as the first Professor of Geology, Paleontology and Mineralogy at the University of Leiden, (1877-1922)**  
- among his students are well-known geologists Molengraaff, van der Vlerk, de Sitter, Umbgrove and Kuenen
- \* **Nicknamed The Linnaeus of the Javanese Tertiary (Rutten, 1929)**
- \* **Mainly known for studies of Cenozoic molluscs on Java, and the use of 'Lyellian' method of biostratigraphy, i.e. using the percentage of Recent species in a fossil assemblage as a measure of its age.**
- \* **Large volumes of fossil and rock material published from 1881 in Martin's new journal: Sammlungen des Geologischen Reichsmuseums in Leiden (Collections of the National Geological Museum at Leiden)**

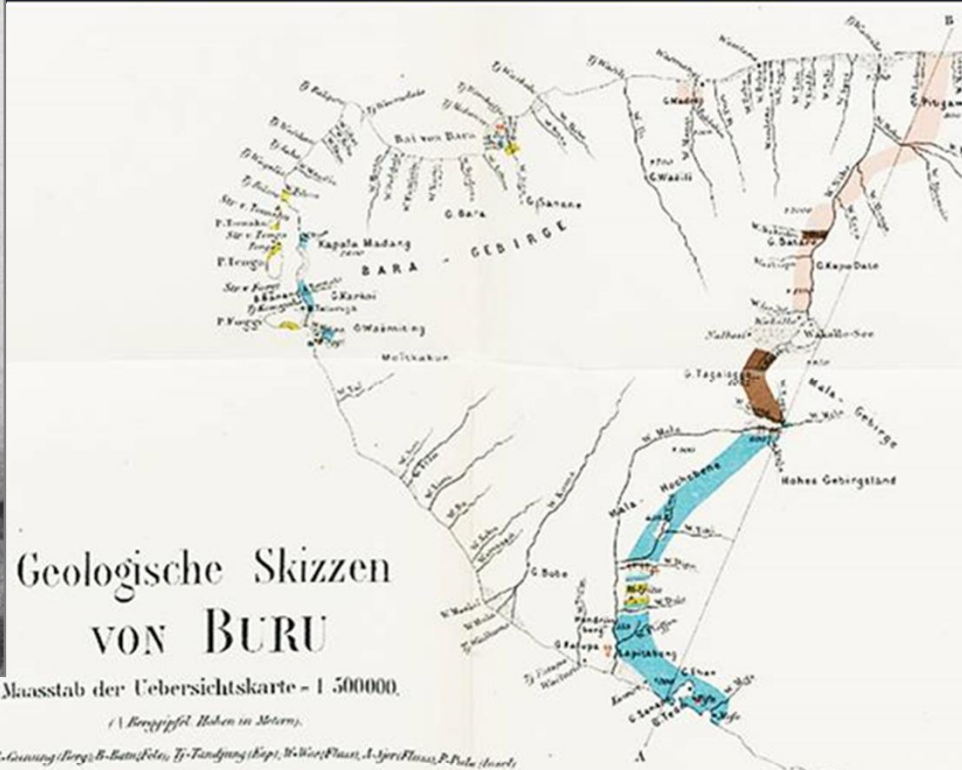


## MARTIN Expedition to the Moluccas , 1891-1892

\* One of the first geological expeditions to Eastern Indonesian islands, incl. Seram, Buru, Ambon and others



K. Martin in 1892



### Geologische Skizzen VON BURU

Maasstab der Uebersichtskarte = 1:500000.

(\ Konigspfel. Hohen in Metern).

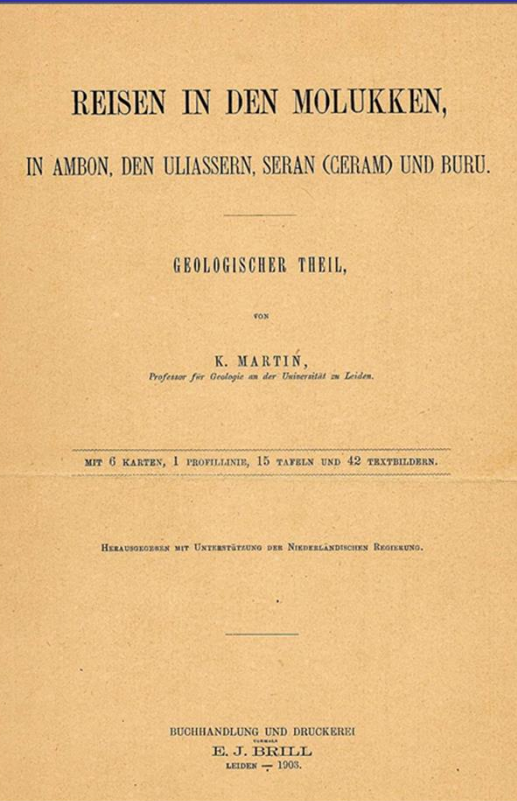
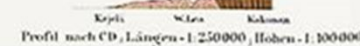
G-Guning (Ferg), B-Batu Koles, Tj-Tandjung (Kep), W-Wies (Fluss), A-Sprei (Fluss), P-Pala (See)

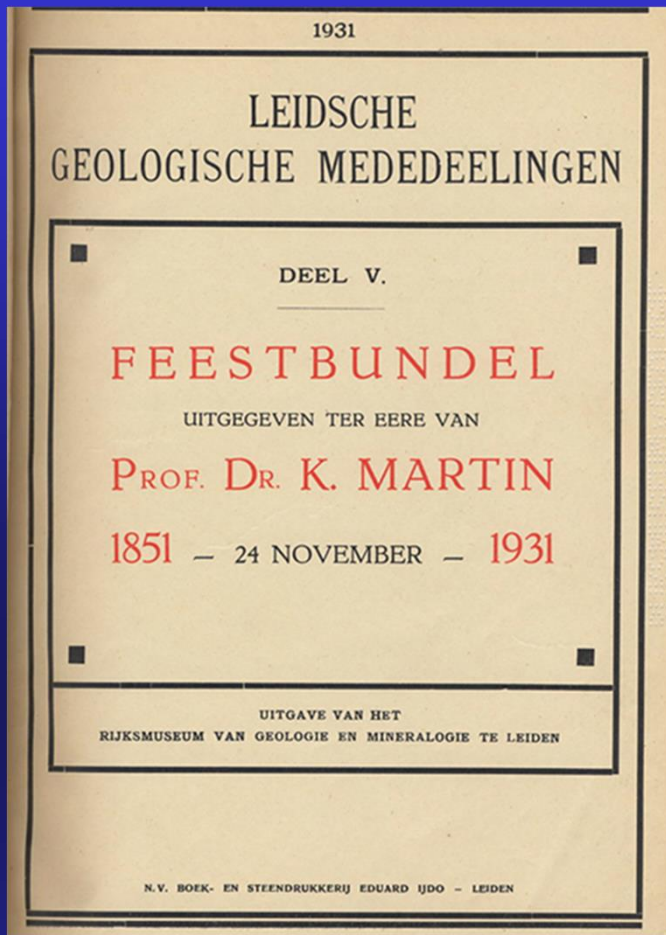
#### Farben- und Zeichen-Erklärung

##### Karte u. Profile.

- Alluvium, stellenweise mit Karang; Kalkuff.
- Karang (Quartär).
- Kalkstein, vermuthlich tertiär.
- Jüngere Sandstein, Conglomerate u. Sandkalk.
- Barakalk.
- Grauwacke.
- Kristalline Grauwacke.
- Kristalline Schiefer u. Phyllite, untergeordnet.
- Andesit.

##### Die wichtigsten Gerölle.

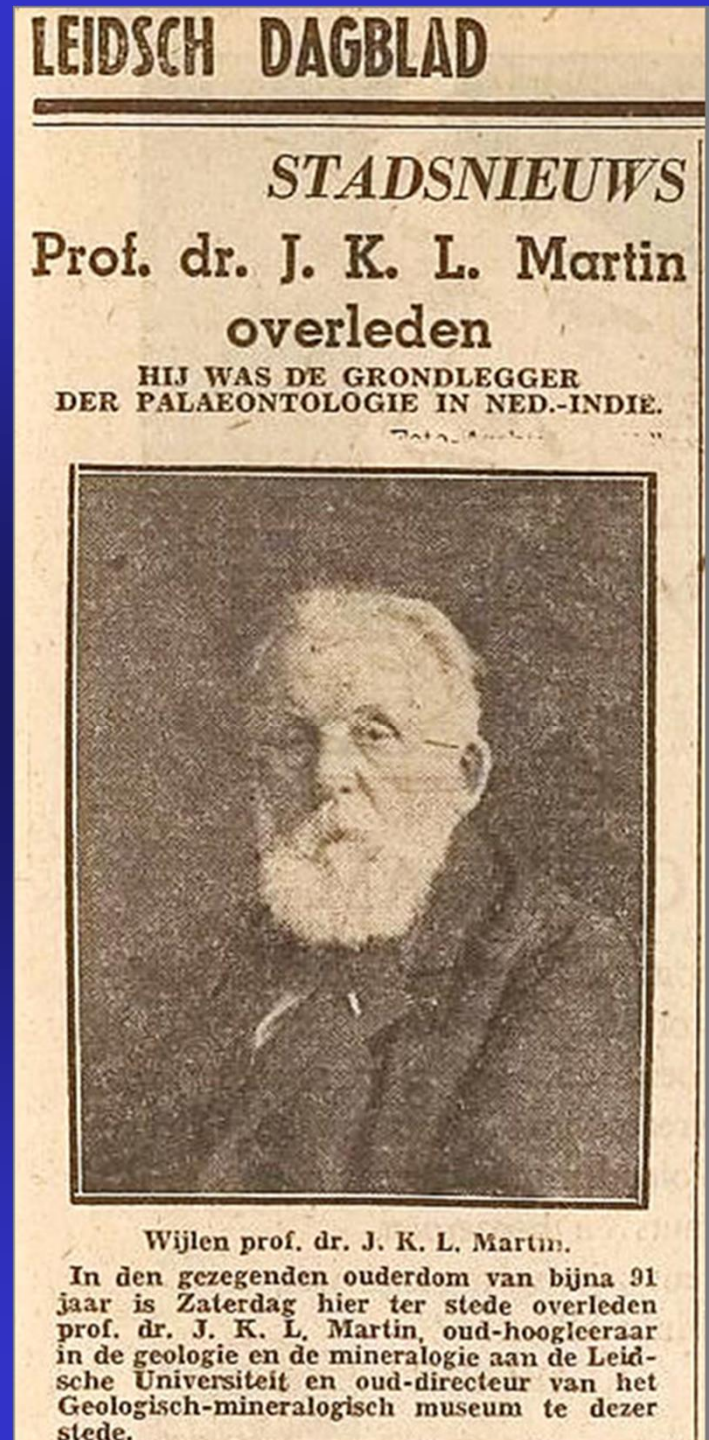




**The K. Martin 80-year memorial volume (1931)**

**\* A unique 650-page collection of 20 papers on the Paleontology and stratigraphy of Netherlands East Indies, listing all ~9000 fossil species known from Indonesian region at that time. This is still the most complete work of its kind.**

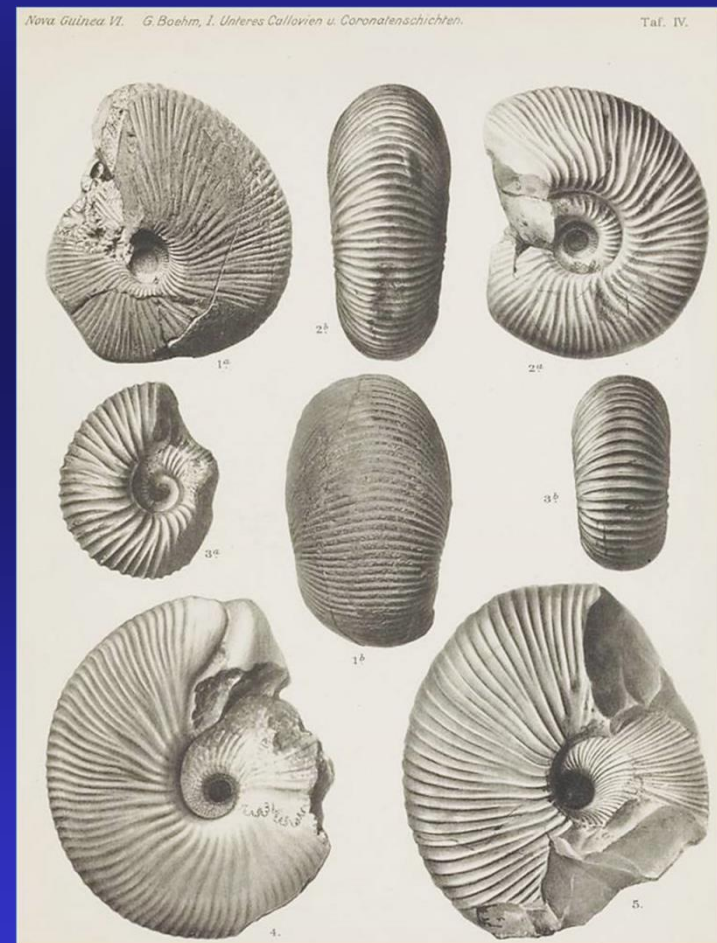
**Newspaper notice of death of Prof. K. Martin: 'He was the Founder of the paleontology in the Netherlands Indies' (Leidens Dagblad , 16-11-1942; with 1927 picture**



## Paleontologists - The Germans... ~1890-1925

### German Paleontologists in the early 1900s

- \* In early 1900s a series of spectacular paleontological monographs, mainly by German paleontologists - except for K. Martin no paleontological expertise in The Netherlands at that time
- \* Many were students of Professor Karl von Zittel in Munich: Rothpletz, Hinde, Stolley, Broili, Wanner Deninger, C.A. Haniel, Boehm, Krumbeck, etc..
- \* Several died in battle during World War I (1914-1918): C.A. Haniel, R.J. Schubert, K. Deninger, F. Frech, F. Vogel,



Middle Jurassic ammonite *Macrocephalites keeuwensis* along Cenderawasih Bay in Birds Head (Boehm, 1913).

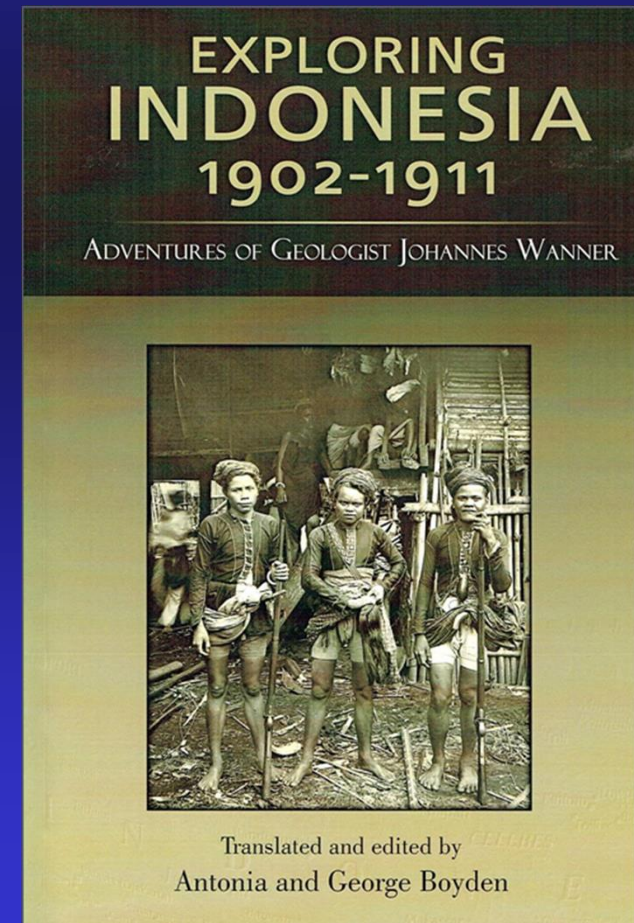
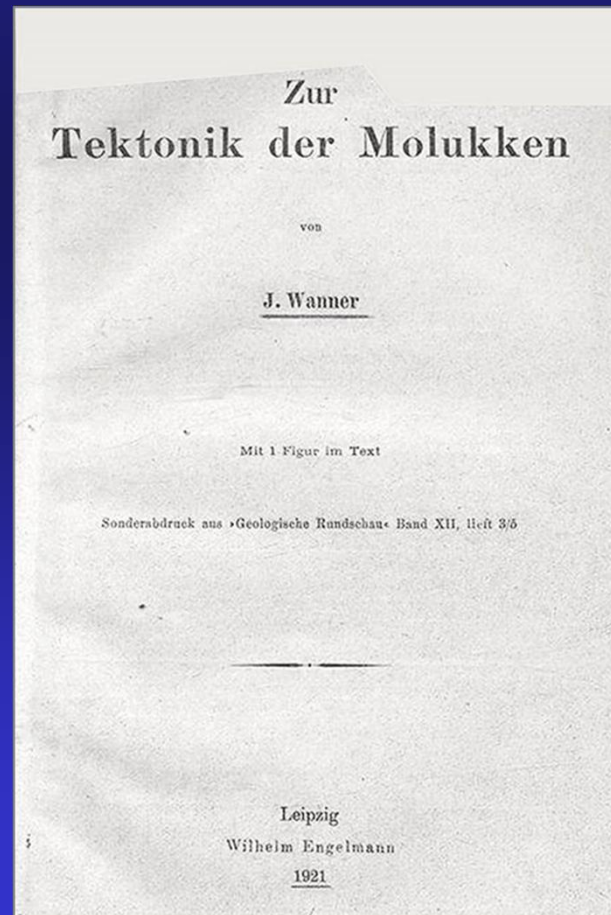
## Paleontologists - The Germans... J. Wanner



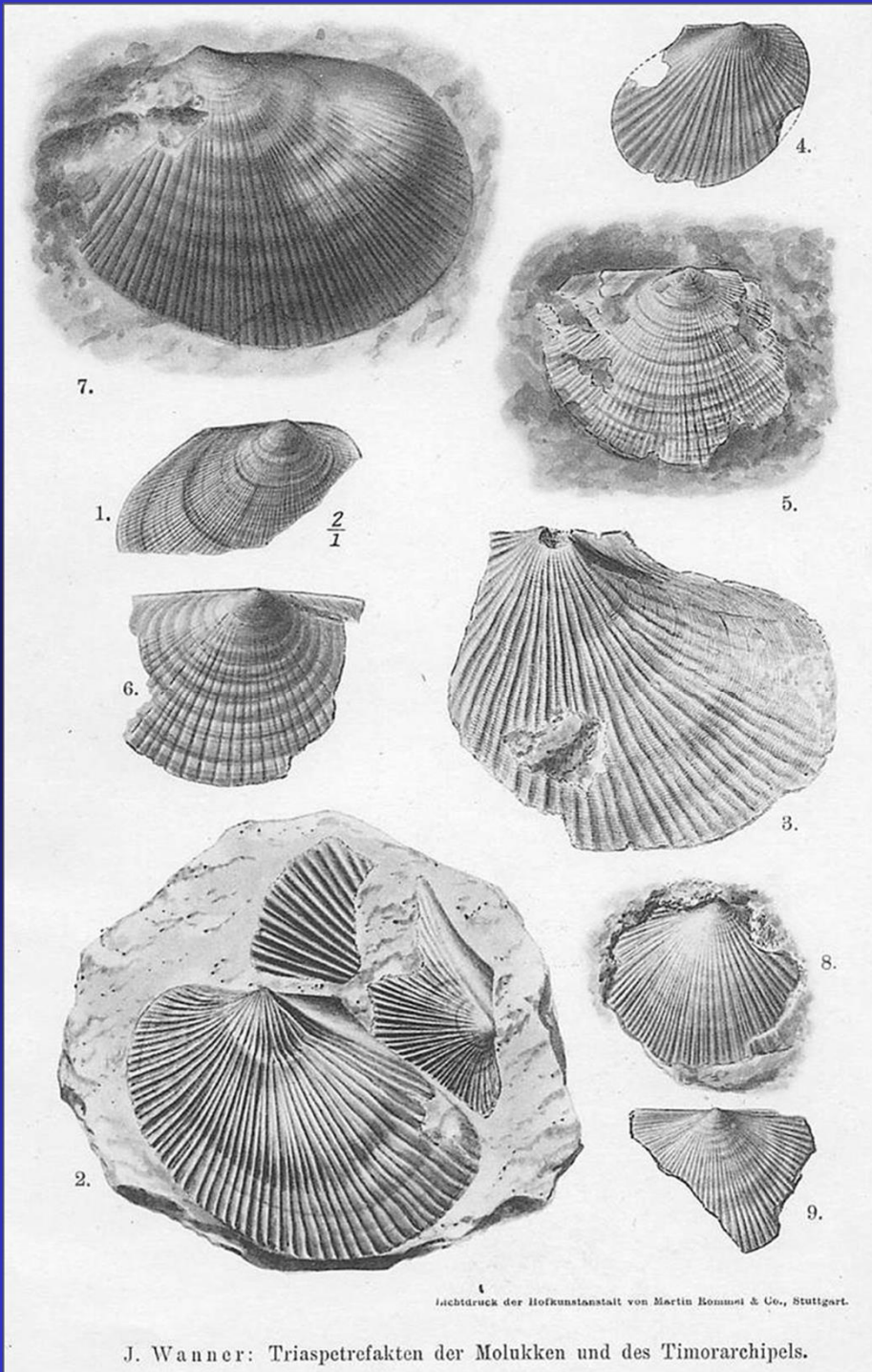
JOHANNES WANNER

### Johannes WANNER (1878-1959)

- \* German geologist/ paleontologist, studied at Ludwig-Maximilians-Universität in Munich from 1897-1901, under Prof. Karl von Zittel
- \* Between 1902 and 1911 Wanner traveled extensively across Indonesia, as Royal Dutch/ BPM petroleum geologist (Seram, Buru, Sulawesi, E Kalimantan and Sumatra), but also personal travels (Misool, Timor) .
- \* Author and editor of many paleontological monographs of East Indonesia and Timor



## Paleontologists - The Germans... J. Wanner



J. Wanner: Triaspetrefakten der Molukken und des Timorarchipels.

The first records of Triassic fossils from E Indonesia (Wanner 1907).

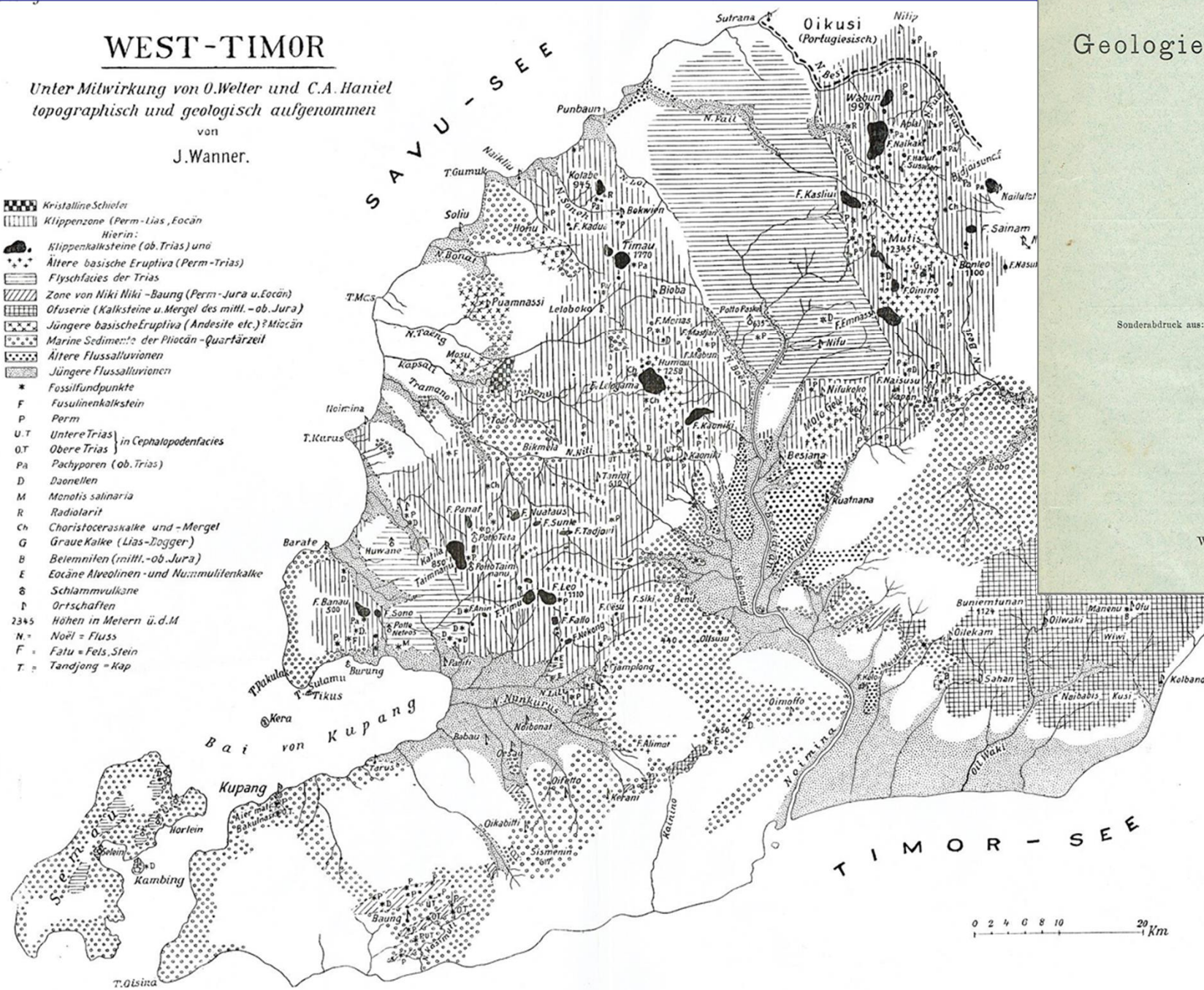
- *Amonotis rothpletzi* n.sp.(1) and *Monotis salinaria* (2-4) from Seram,
- *Daonella* spp. from Misool (5), Roti (6-7) and Timor (8-9)

## Timor Expedition, 1911

### WEST-TIMOR

Unter Mitwirkung von O. Welter und C.A. Haniel  
topographisch und geologisch aufgenommen  
von  
J. Wanner.

- Kristalline Schiefer
- Klippenzone (Perm-Lias, Eocän)
- Hierin:
- Klippenkalksteine (ob. Trias) und
- Ältere basische Eruptiva (Perm-Trias)
- Flyschfacies der Trias
- Zone von Niki Niki -Baung (Perm-Jura u. Eocän)
- Ofuserie (Kalksteine u. Mergel des mittl.-ob. Jura)
- Jüngere basische Eruptiva (Andesite etc.)? Miocän
- Marine Sedimente der Pliocän-Quartärzeit
- Ältere Flussalluvionen
- Jüngere Flussalluvionen
- \* Fossilfundpunkte
- F Fusulinenkalkstein
- P Perm
- U.T Untere Trias } in Cephalopodenfacies
- O.T Obere Trias }
- Pa Pachyporen (ob. Trias)
- D Daonellen
- M Monotis salinaria
- R Radiolarit
- Ch Choristoceraskalke und -Mergel
- G Graue Kalke (Lias-Zogger)
- B Belemniten (mittl.-ob. Jura)
- E Eocäne Alveolinen- und Nummulitenkalke
- S Schlammlavakane
- Ortschaften
- 2345 Höhen in Metern ü.d.M
- N = Noël = Fluss
- F = Fatu = Fels, Stein
- T = Tandjong = Kap



### Geologie von Westtimor



J. Wanner

Mit einer Tafel

Sonderabdruck aus: »Geologische Rundschau«, Band IV, Heft 2

Leipzig  
Wilhelm Engelmann  
1913



# Paleontologists - The Germans... J. Wanner

## PALÄONTOLOGIE VON TIMOR

NEBST KLEINEREN BEITRÄGEN ZUR PALÄONTOLOGIE  
EINIGER ANDERER INSELN DES OSTINDISCHEN ARCHIPELS

ERGEBNISSE DER EXPEDITIONEN  
G. A. F. MOLENGRAAFF, J. WANNER  
UND F. WEBER

UNTER MITWIRKUNG VON FACHGENOSSEN UND MIT UNTERSTÜTZUNG  
DES NIEDERLÄNDISCHEN MINISTERIUMS DER KOLONIEN

HERAUSGEGEBEN

VON

JOH. WANNER

XII. LIEFERUNG:

XX. ZUR KENNNTNIS DES JURAS DER INSEL TIMOR  
SOWIE DES AUCELLEN-HORIZONTES VON SERAN UND BURU

VON DR. L. KRUMBECK  
H. O. PROFESSOR AN DER UNIVERSITÄT ERLANGEN

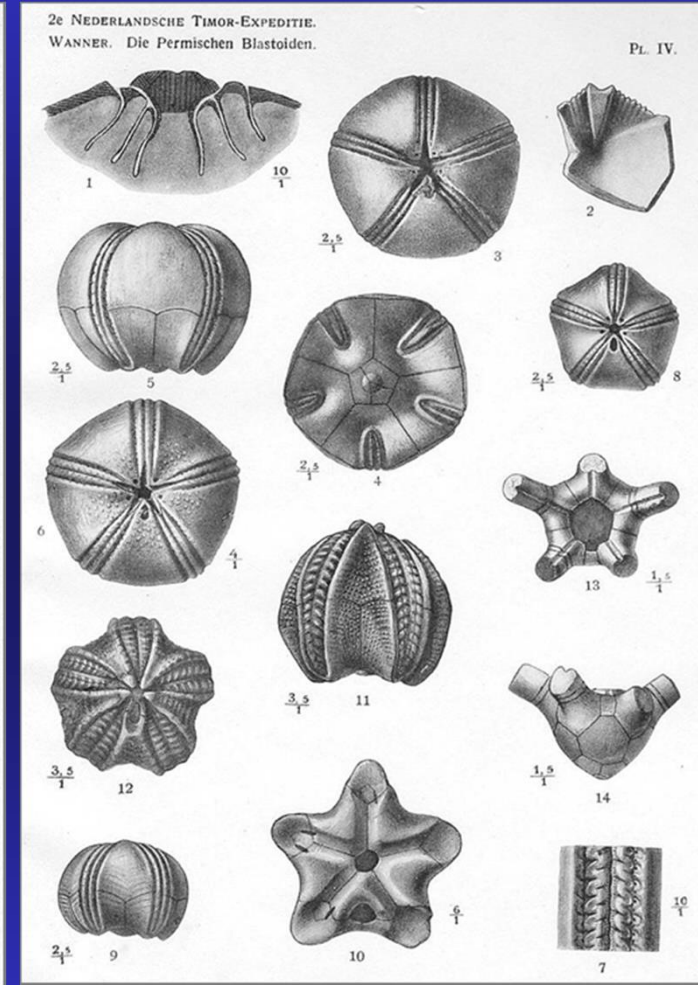
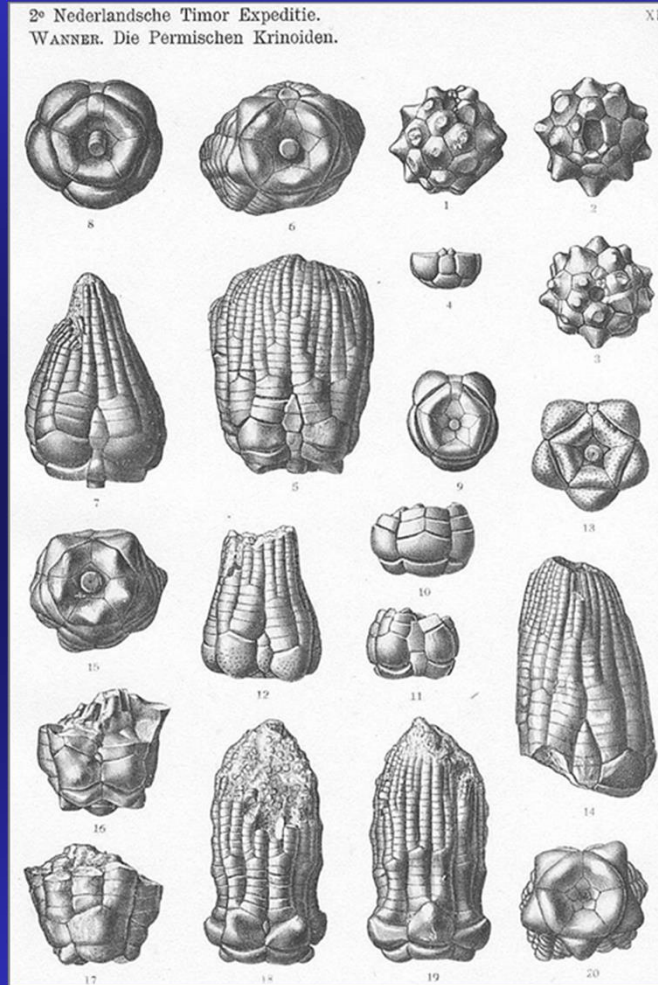
XXI. TRILOBITEN AUS DER DVAS VON TIMOR UND LETTI  
VON DR. P. TESCH

STUTT GART 1923

E. SCHWEIZERBARTSCHE VERLAGSBUCHHANDLUNG  
(ERWIN NAGELE) G. M. B. H. IN STUTT GART

**Editor of Palaontologie von Timor  
16-volume series (1914-1929)**

**Wanner's own paleontological work focused on Permian crinoids (left ;  
Wanner 1921) and blastoids (right, Wanner 1922) from Timor**



PALAONTOLOGIE VON TIMOR X. LIEFERUNG

**XVII. DIE BRACHIOPODEN,  
LAMELLIBRANCHIATEN UND  
GASTROPODEN DER TRIAS  
VON TIMOR. I.**

STRATIGRAPHISCHER TEIL

VON

**DR. L. KRUMBECK**

u. o. PROFESSOR AN DER UNIVERSITÄT ERLANGEN

AUSGEGEBEN IM OKTOBER 1921

STUTTART 1921

E. SCHWEIZERBARTSCHE VERLAGSBUCHHANDLUNG  
(ERWIN DAGELE) IN STUTTART

**2<sup>DE</sup> NEDERLANDSCHE TIMOR-EXPEDITIE  
ONDER LEIDING VAN D<sup>R</sup>. H. G. JONKER †**

UITGEGEVEN DOOR

**D<sup>R</sup>. H. A. BROUWER**

HOOGLERAAR AAN DE TECHNISCHE HOOGESCHOOL TE DELFT.

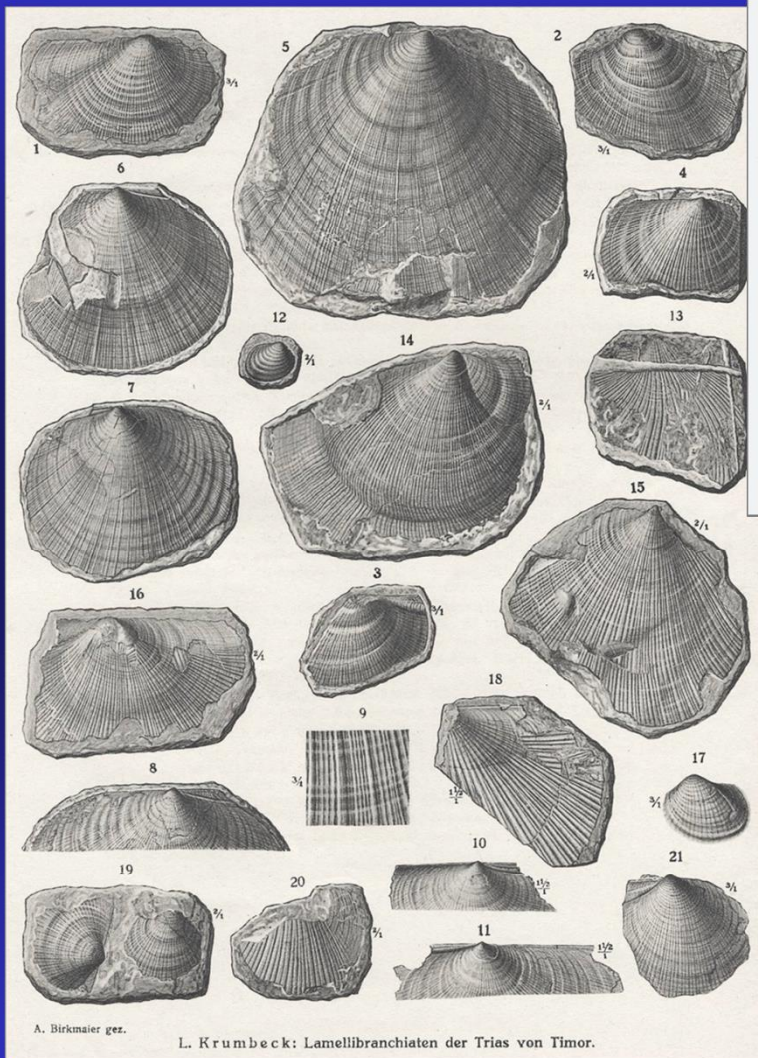
**AMMOINOIDEA TRACHYOSTRACA AUS DER  
MITTLEREN UND OBEREN TRIAS VON TIMOR**

VON

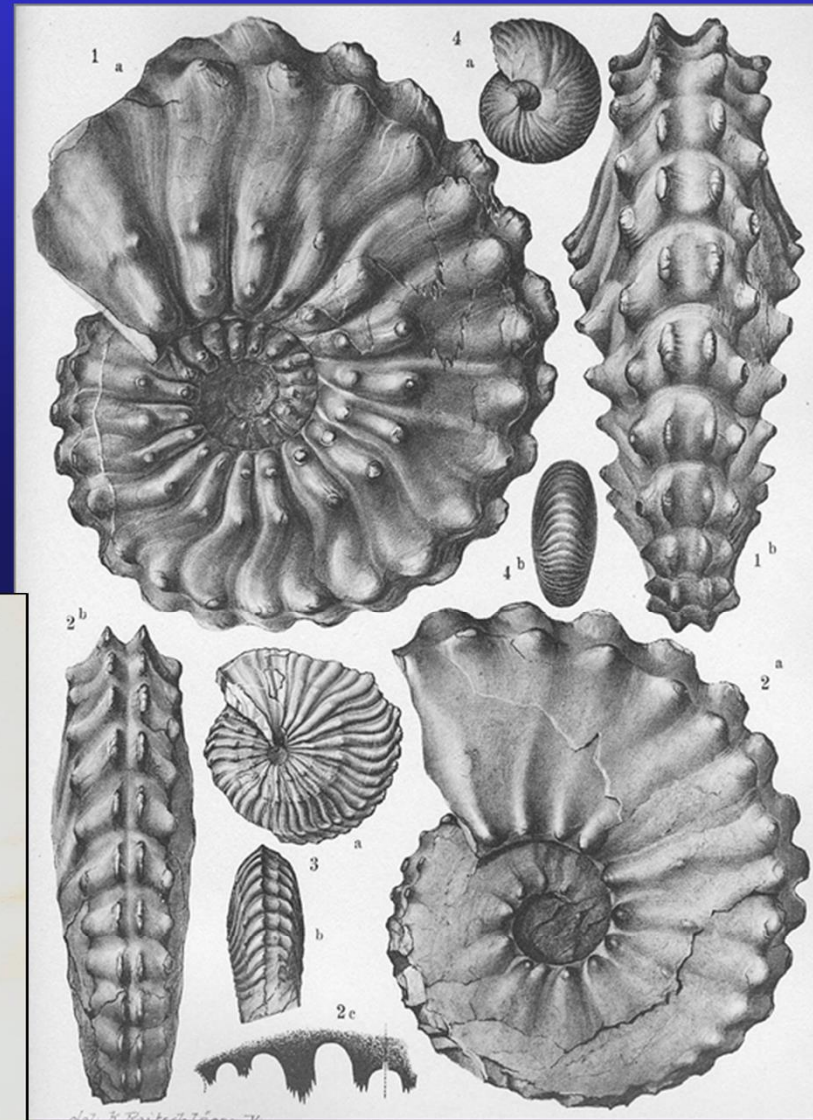
**DR. CARL DIENER.**

PROF. DER PALAONTOLOGIE A. D. UNIVERSITÄT WIEN.

ATLAS.



**Krumbeck (1921), Triassic brachiopods and molluscs from Timor**

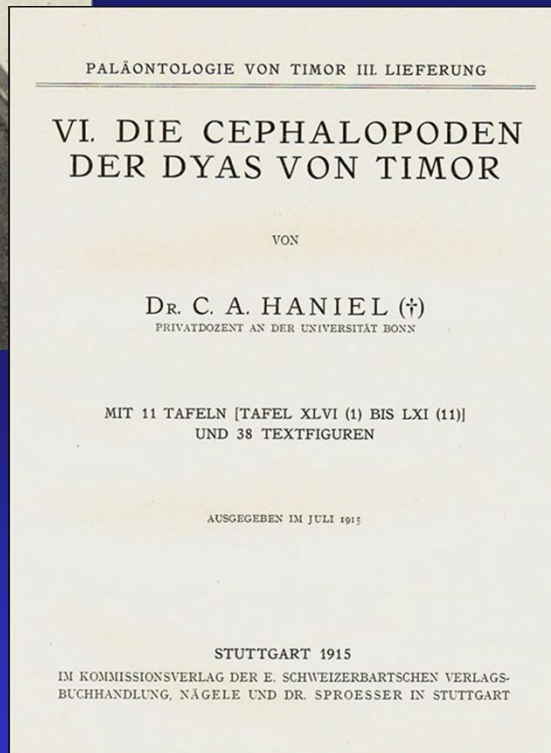
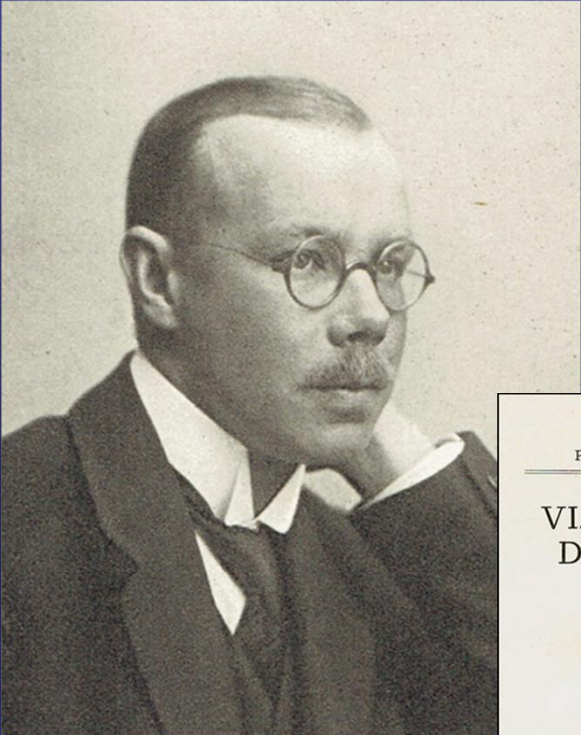


**Diener (1923), Triassic ammonites Timor**

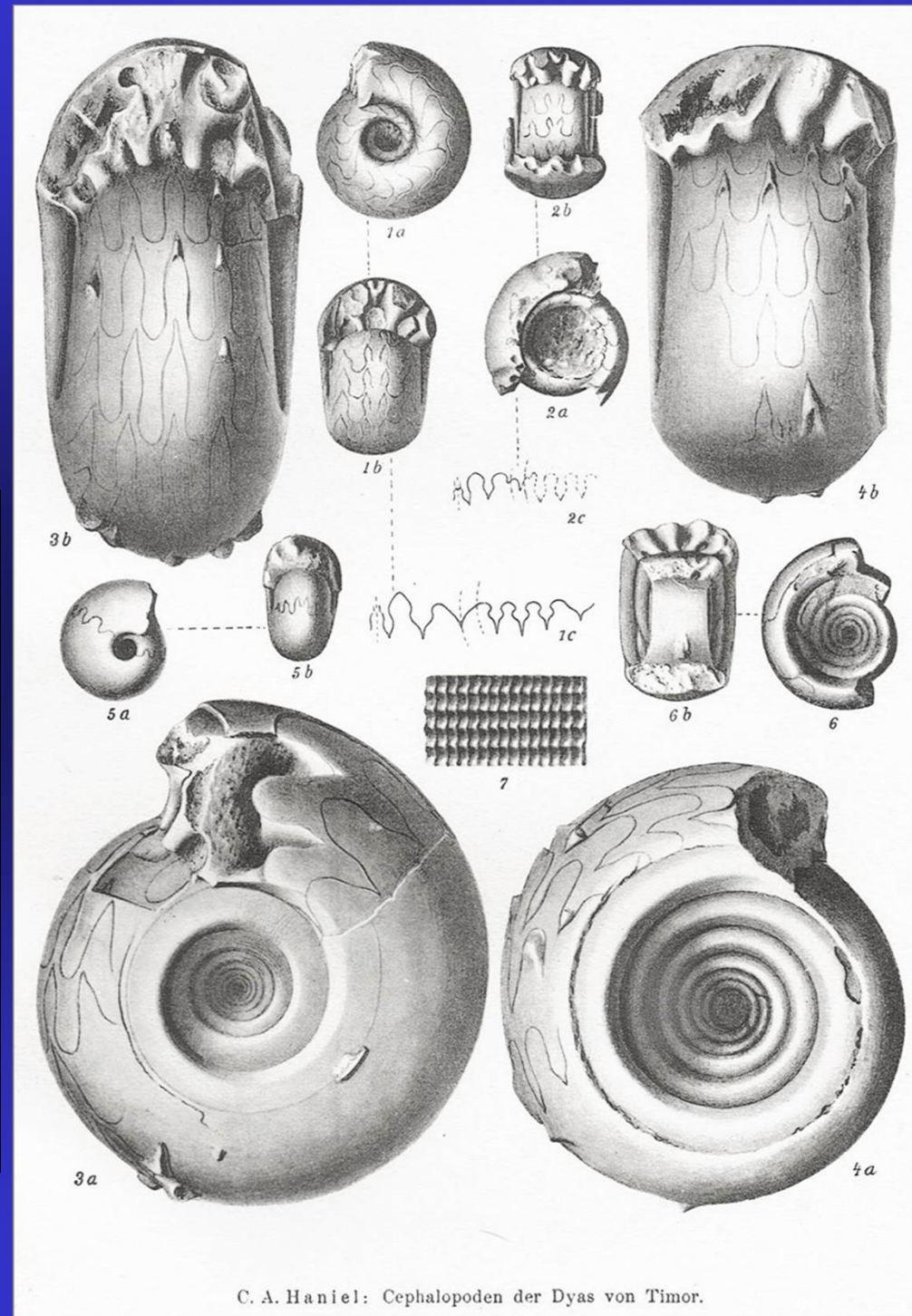
# Paleontologists - The Germans...C.Haniel

German paleontologists in the early 1900s

\* Curt Haniel (1884-1914)

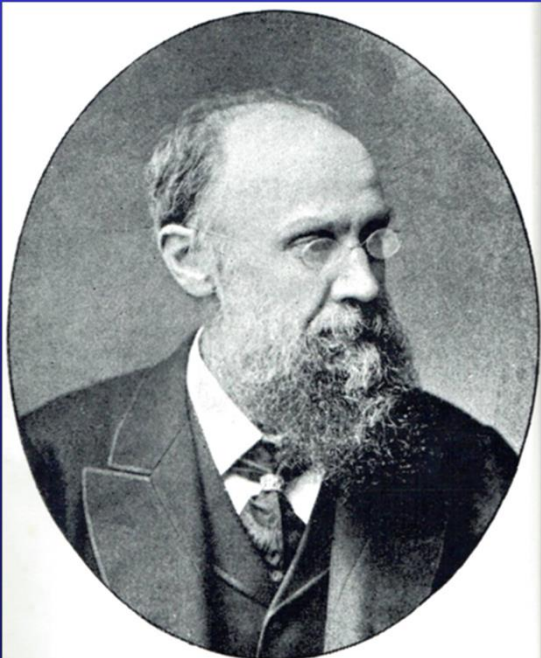


Permian ammonites from Timor  
(*Paralegoceras* spp.; Haniel, 1915)



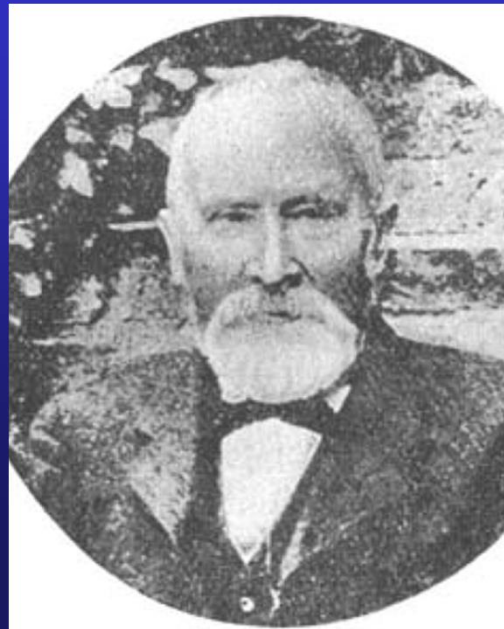
C. A. Haniel: Cephalopoden der Dyas von Timor.

**PIONEERS OF MICROPALAEONTOLOGY**

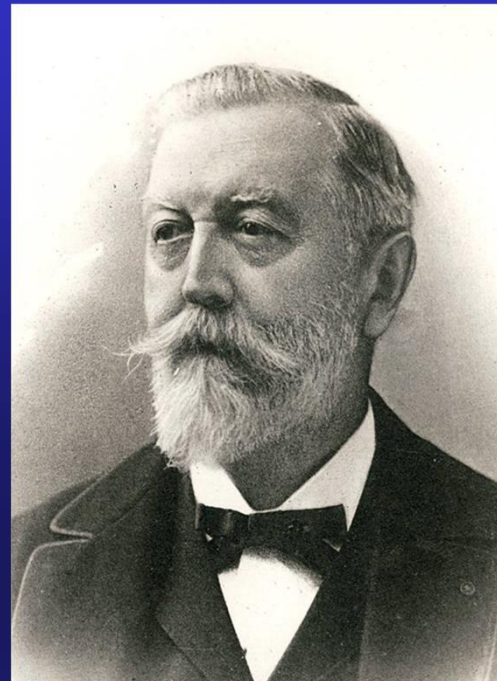


*Henry B. Brady*

**Henry B. Brady**  
**Foraminifera Paleozoic-**  
**Sumatra (1875)**  
**Recent- Challenger (1884),**



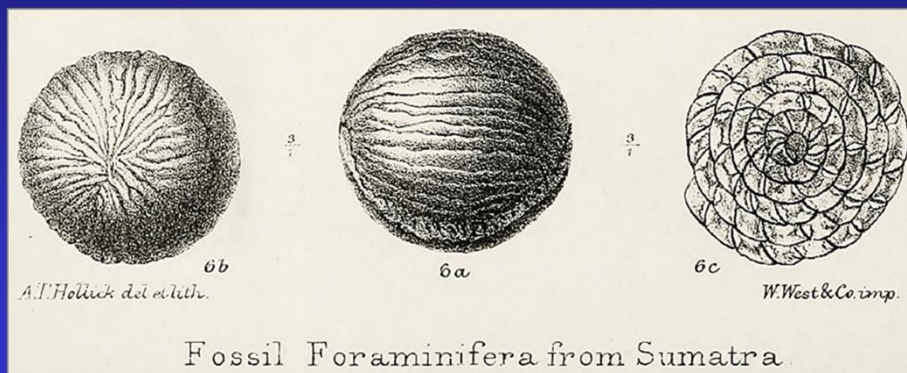
**George J. Hinde**  
**Mesozoic Radiolaria**  
**(~1900-1910, Bangka,**  
**Borneo, Sulawesi,**



**Charles Schlumberger**  
**Foraminifera New Guinea**  
**(1894), Madura (1900)**



**Henri Douville**  
**Foraminifera Borneo**  
**(1905), Java (1916)**



## Pioneers- Vol. 3: Micropaleontologists- I.M. van der Vlerk

**Isaak M. VAN DER VLERK (1892-1974)**

- \* **Doctorate in 1922 on larger foraminifera from Sumbawa and other areas under K. Martin**
- \* **The first micropaleontologist at the Dienst van den Mijnbouw (Geological Survey) from 1922 until 1928, (earlier studies on foraminifera were by academics in Europe).**
- \* **Known for development of a Tertiary larger foram zonation, the 'East Indies Letter Classification'**
- \* **Professor at University of Leiden 1931-1961, Director of Leiden Geological Museum 1955-1961**



**I. van der Vlerk and J. Umbgrove in Bandung in the late 1920s.**

Isaak M. VAN DER VLERK : Larger foraminifera expert

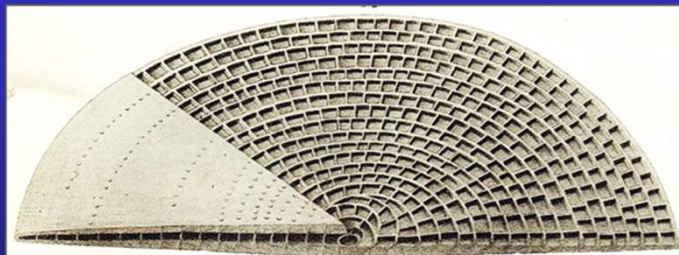
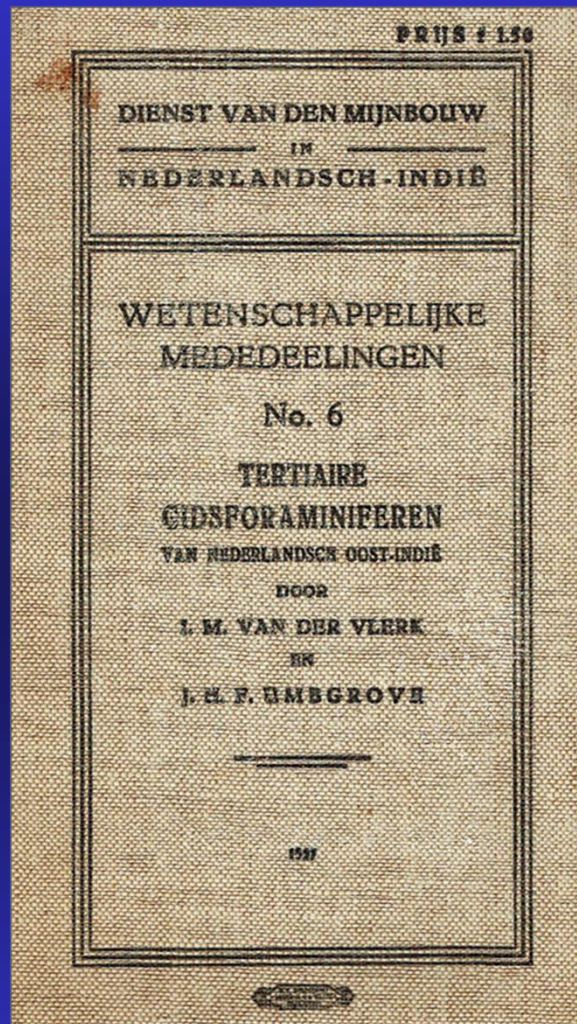


Fig. 9. Cycloclypeus Tertiair e—rec.

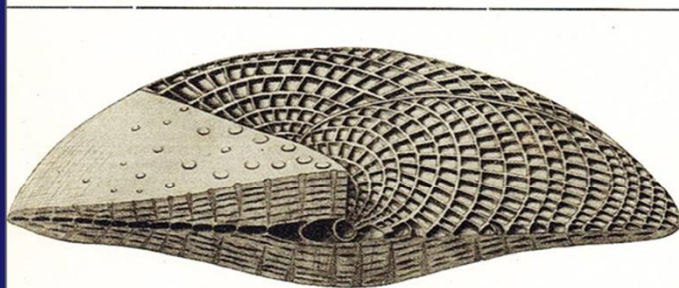
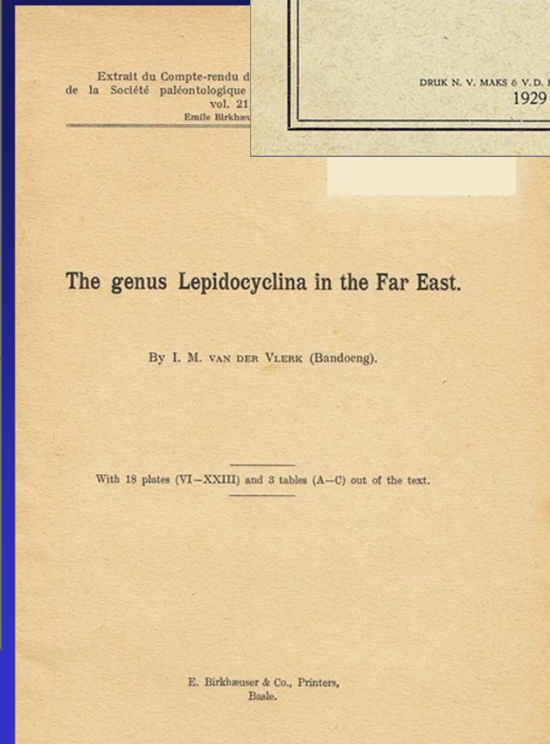
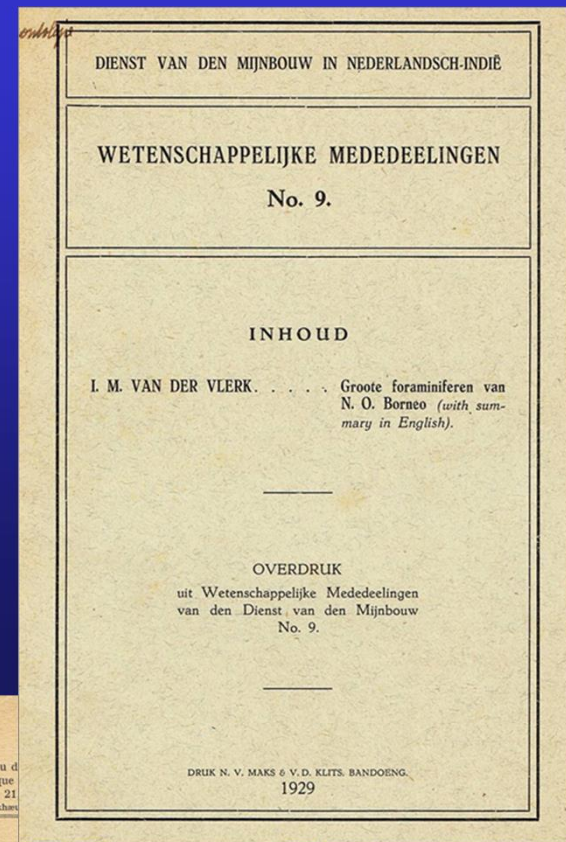
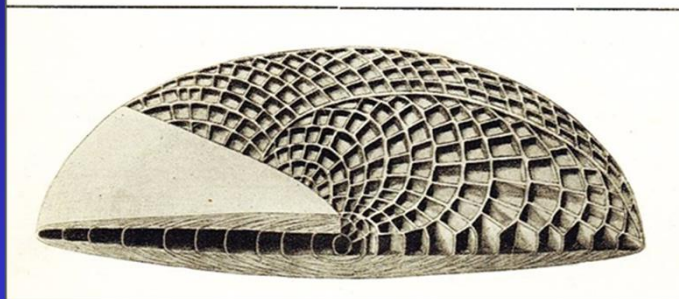


Fig. 10. Spiroclypeus Tertiair e.

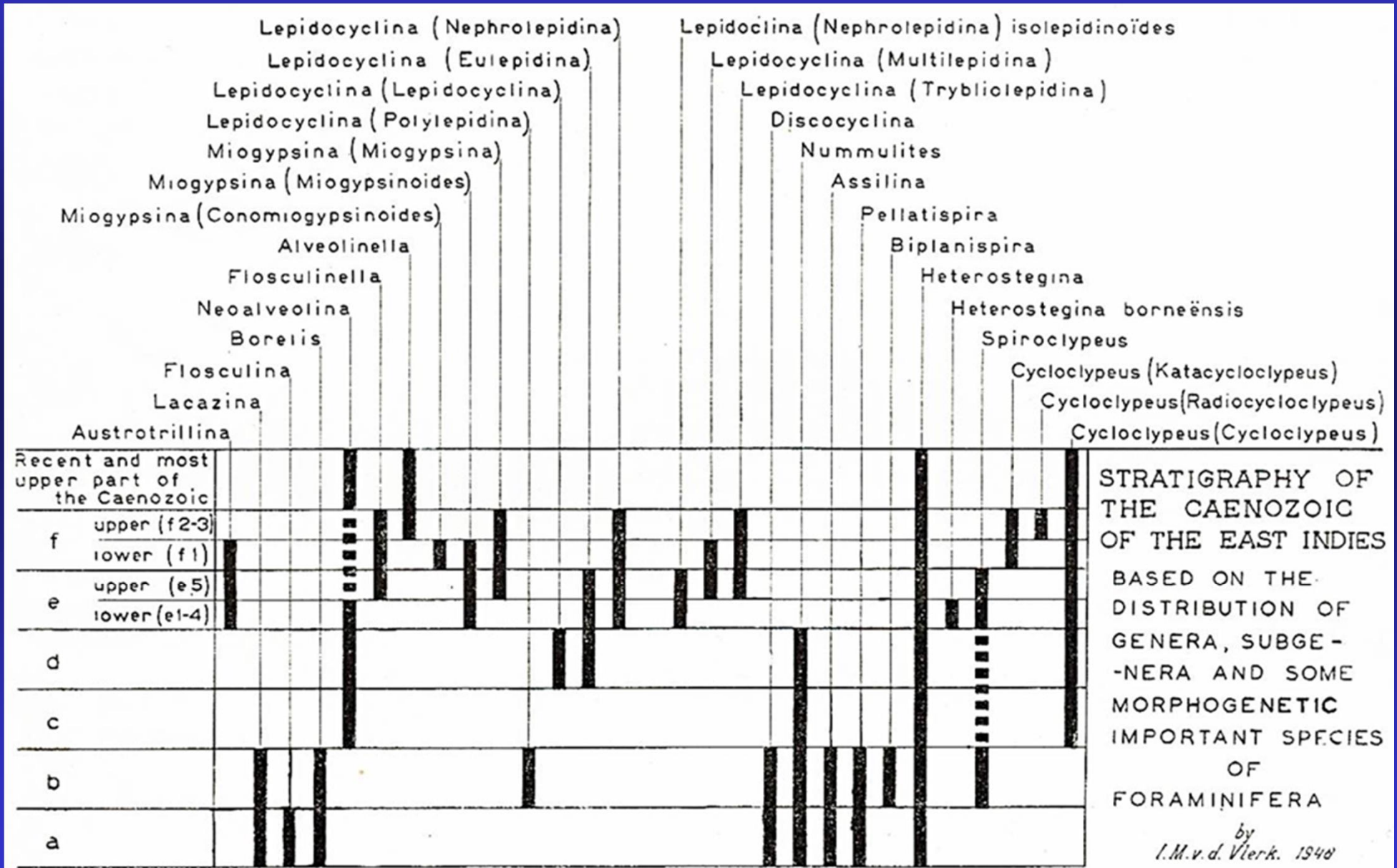


Van der Vlerk (1928)

# Micropaleontologists- I.M. van der Vlerk

## The Far East Letter Zonation

- \* Biostratigraphic zonation based on vertical distributions of larger foraminifera
- \* The principal tool for biostratigraphy age dating in carbonates

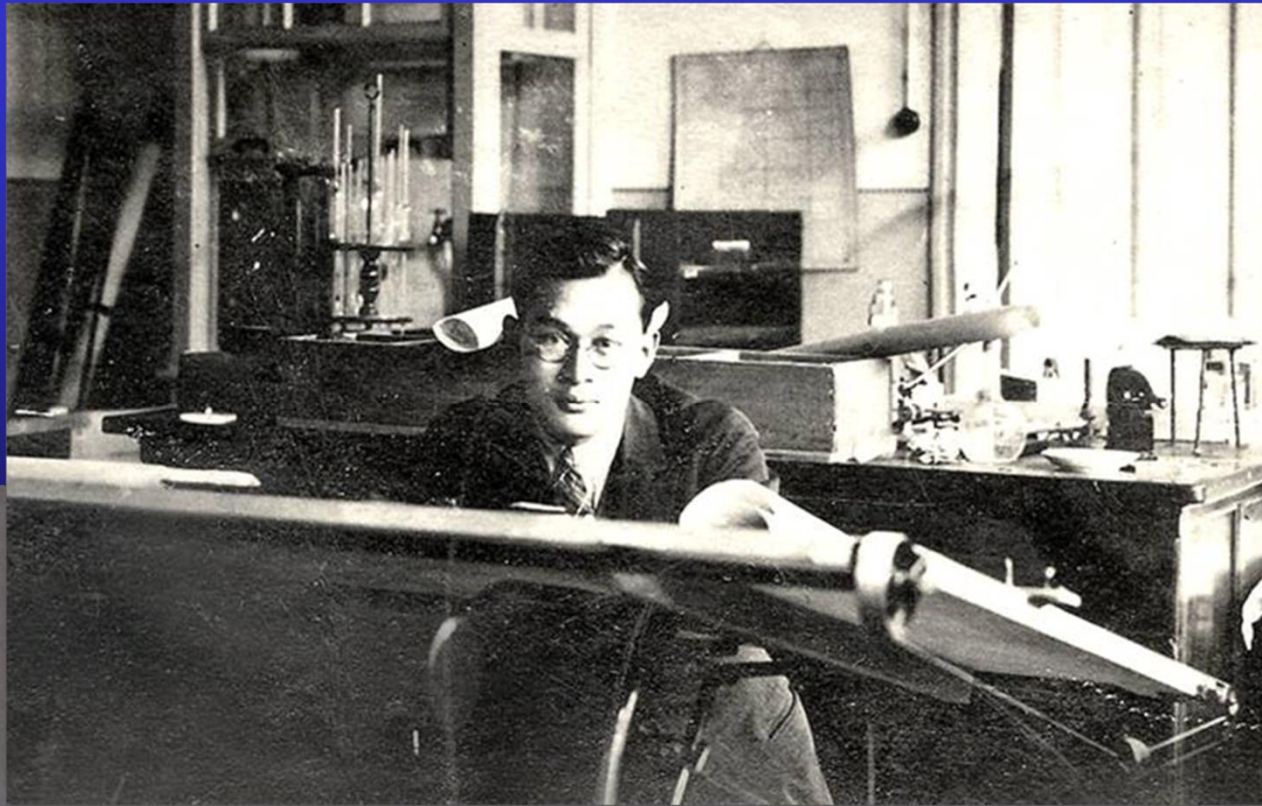


## **Micropaleontologists - Tan Sin Hok**

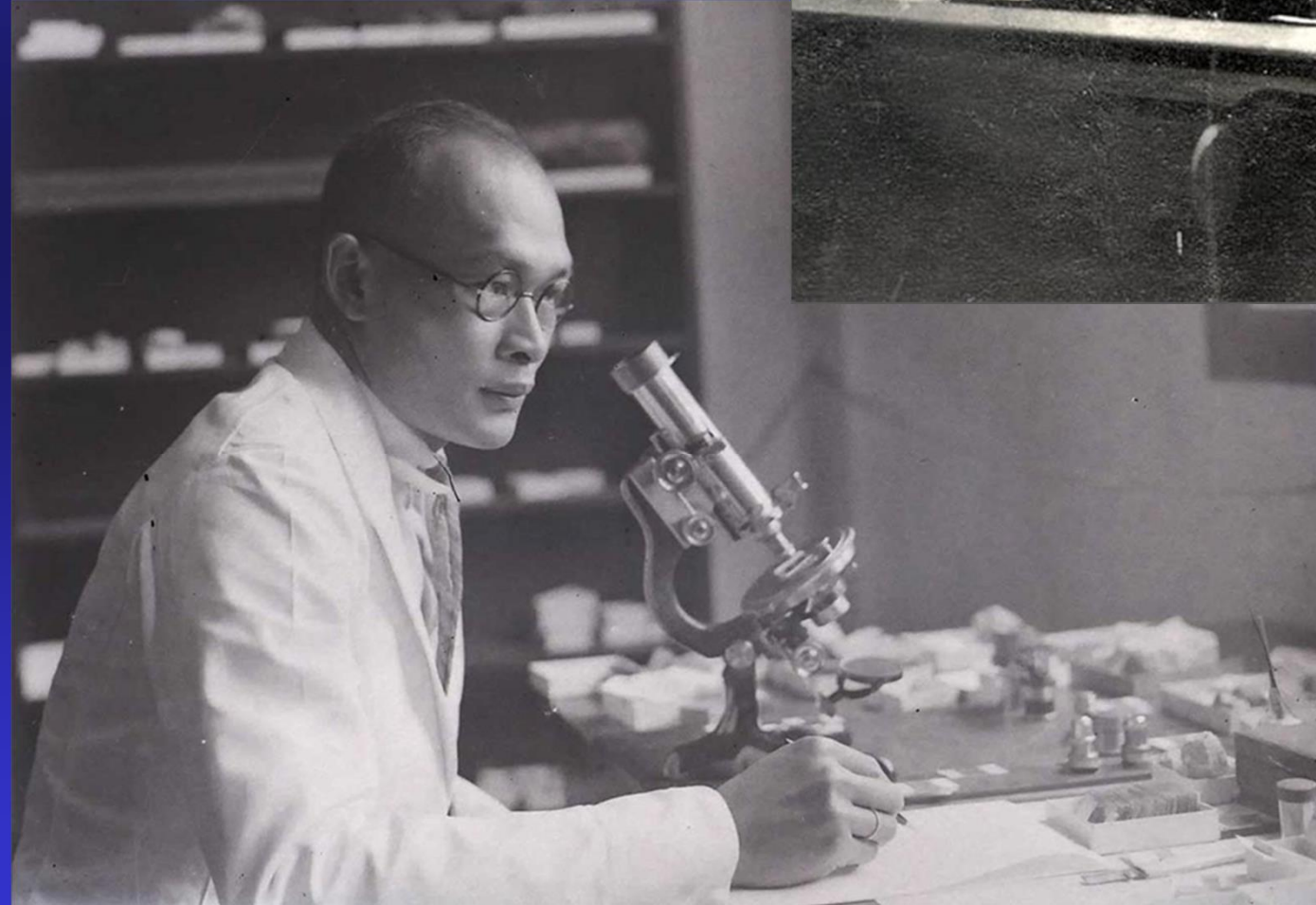
### **TAN SIN HOK**

*Internationally acclaimed pioneer in*

- Mesozoic radiolaria,*
- Neogene calcareous nannofossils*
- Evolutionary trends in Tertiary larger foraminifera*



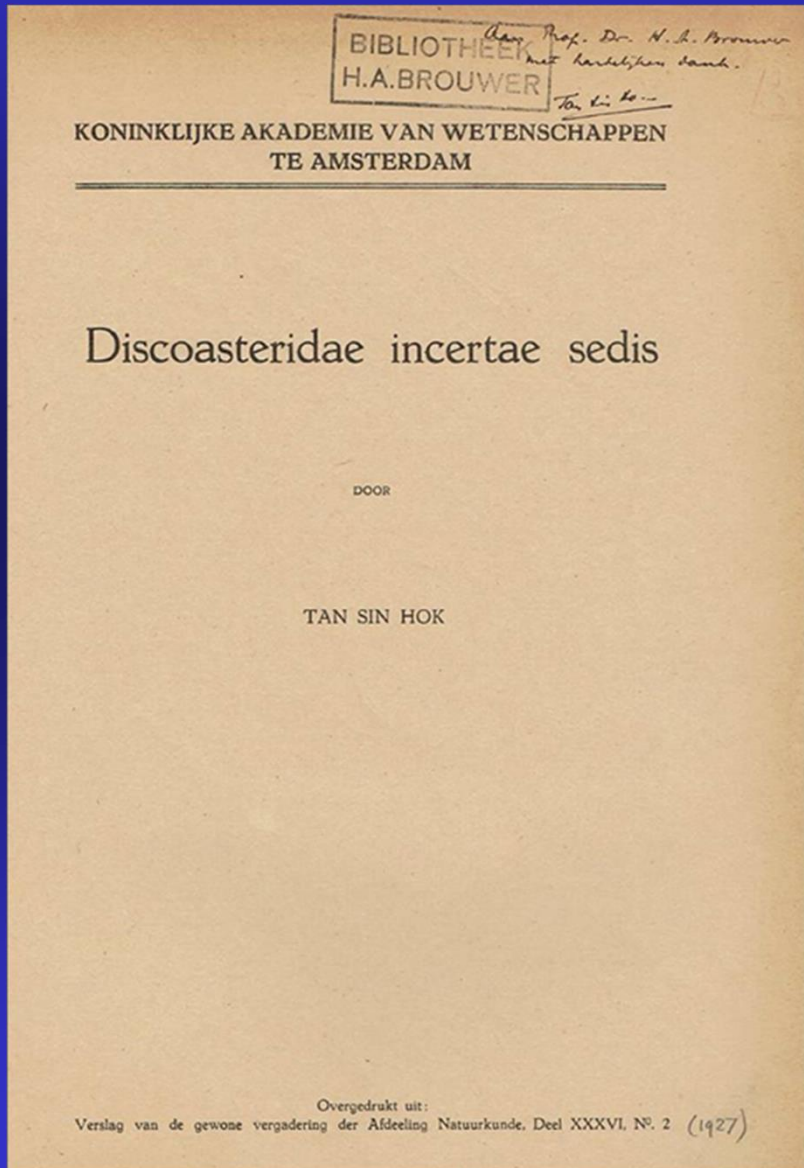
*Tan Sin Hok as a student  
in Delft in the 1920s.*



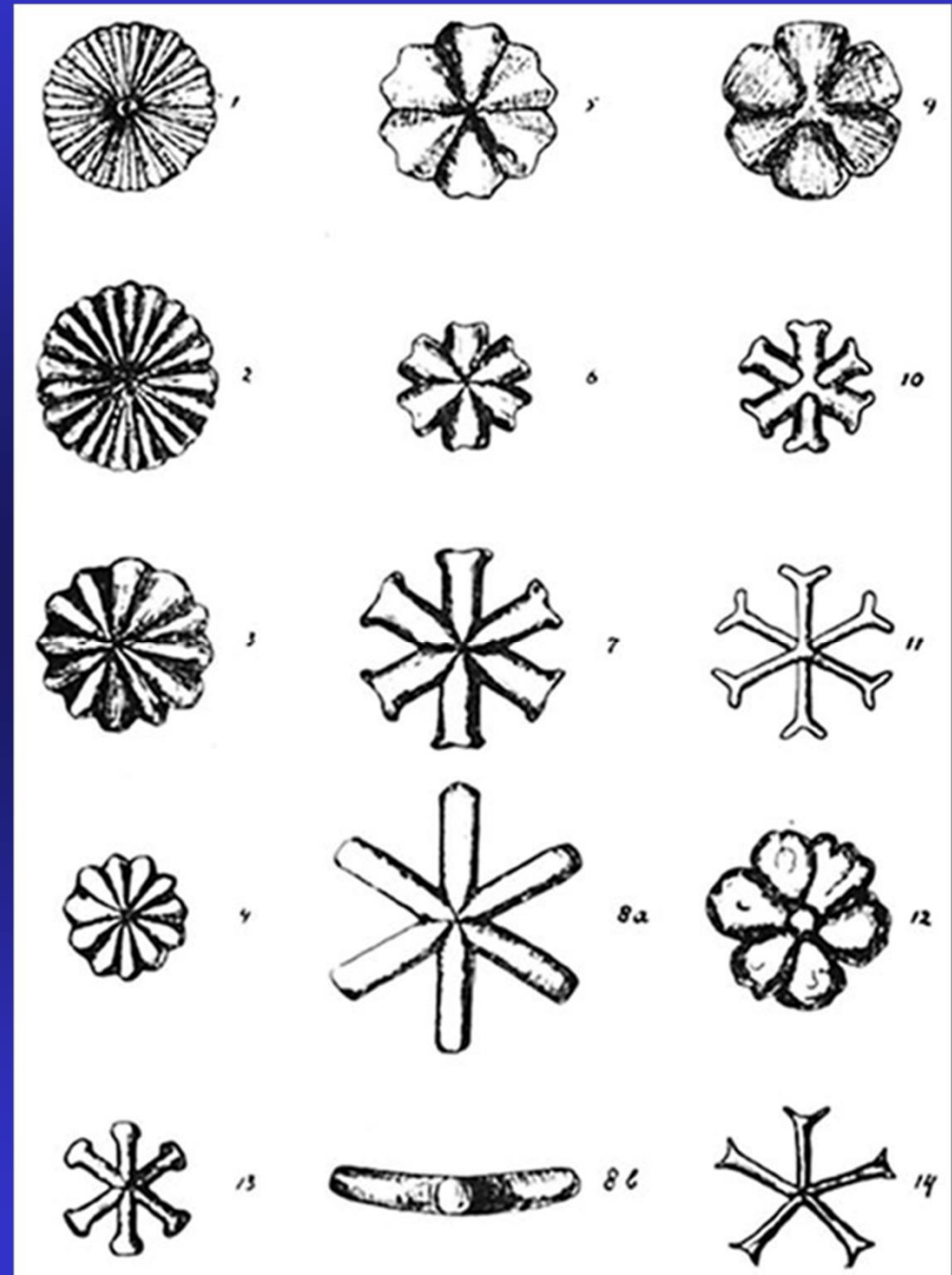
*Tan Sin Hok in Bandung  
in the 1930s*



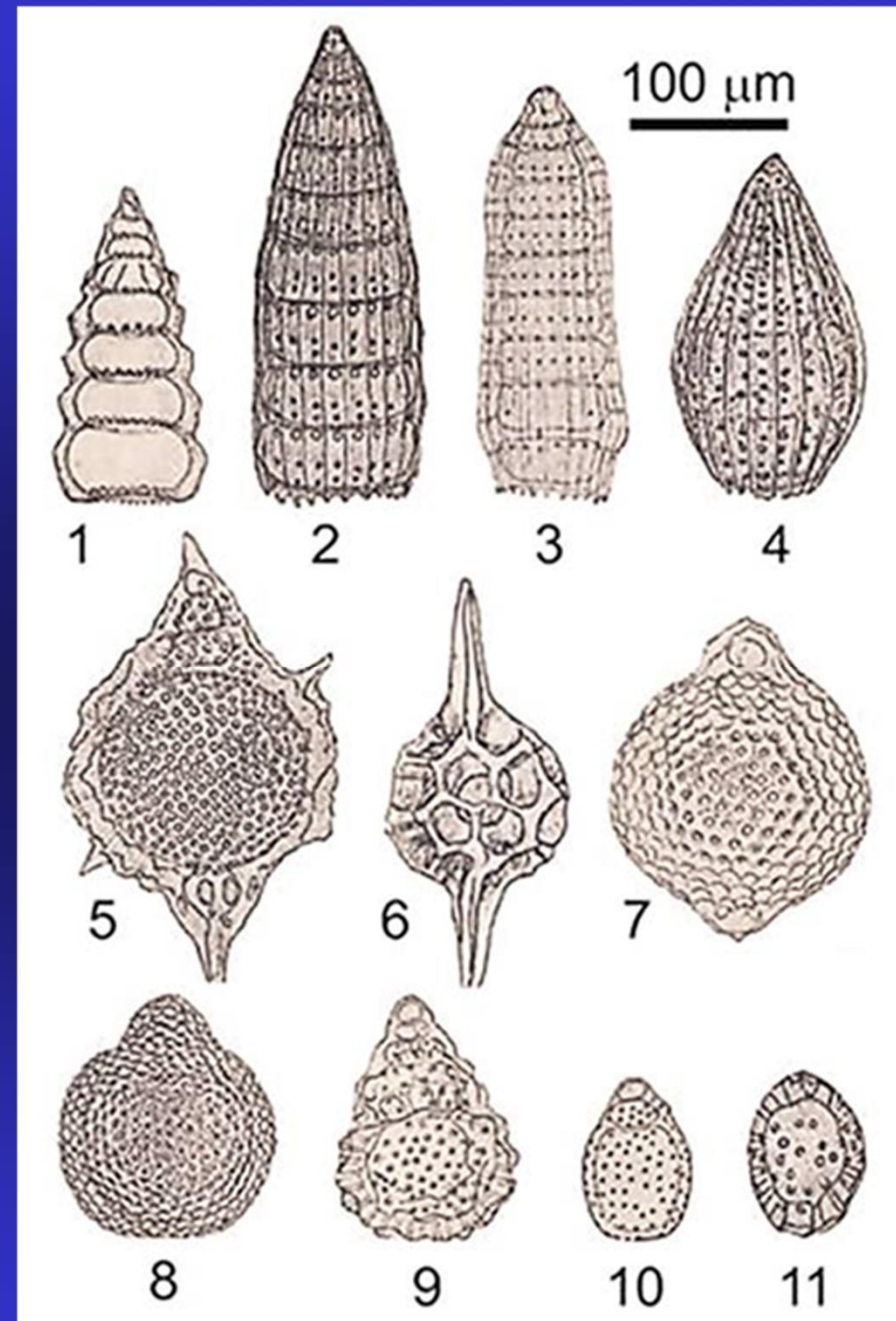
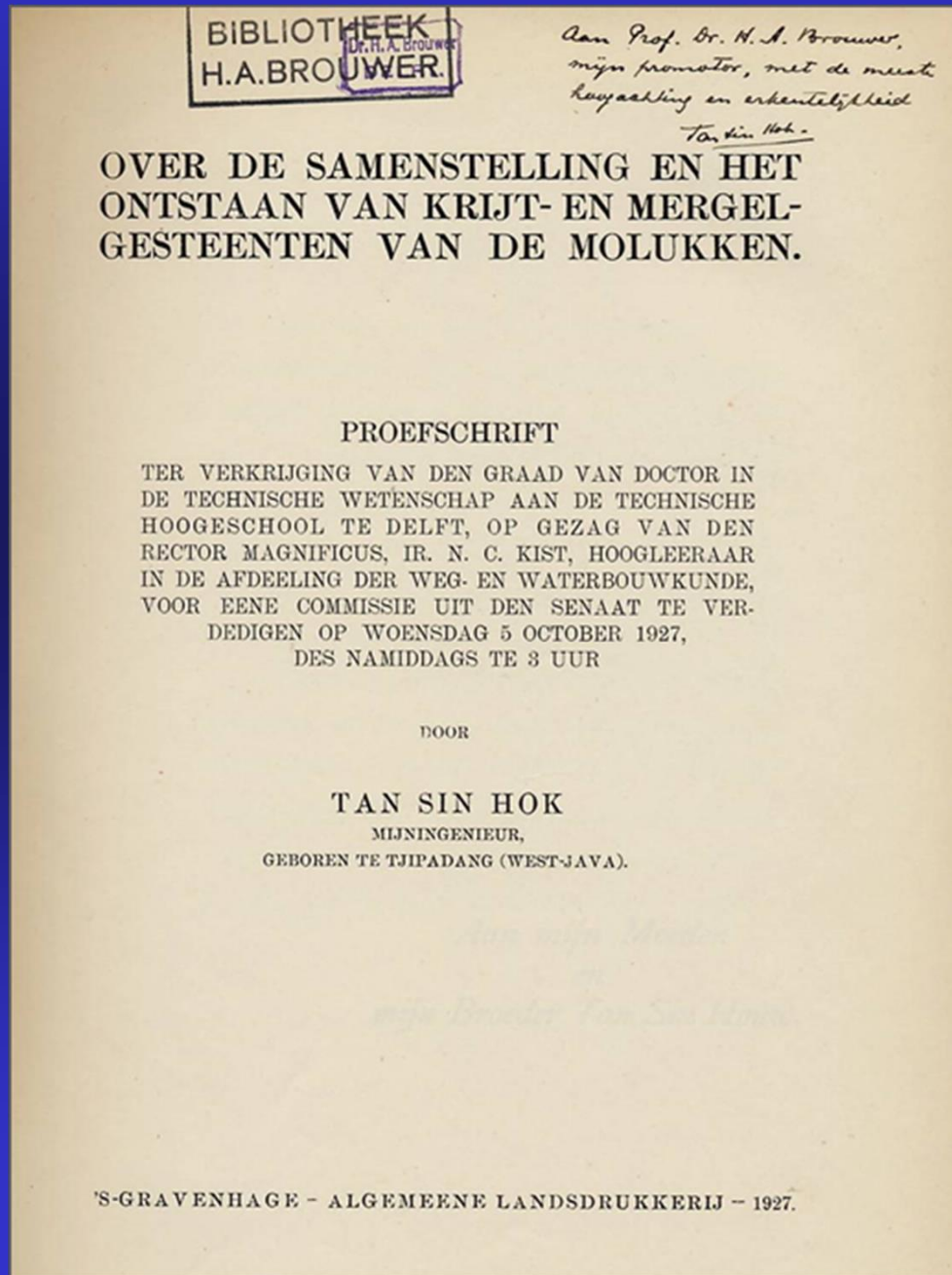
**Internationally acclaimed pioneer in  
Neogene calcareous nannofossils**



**Neogene Calcareous nannofossils (Tan Sin Hok (1927))**



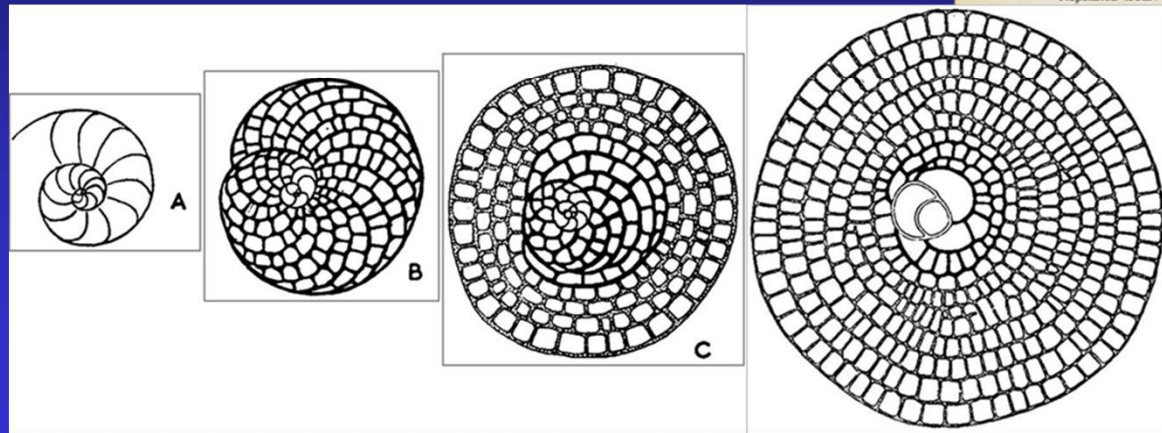
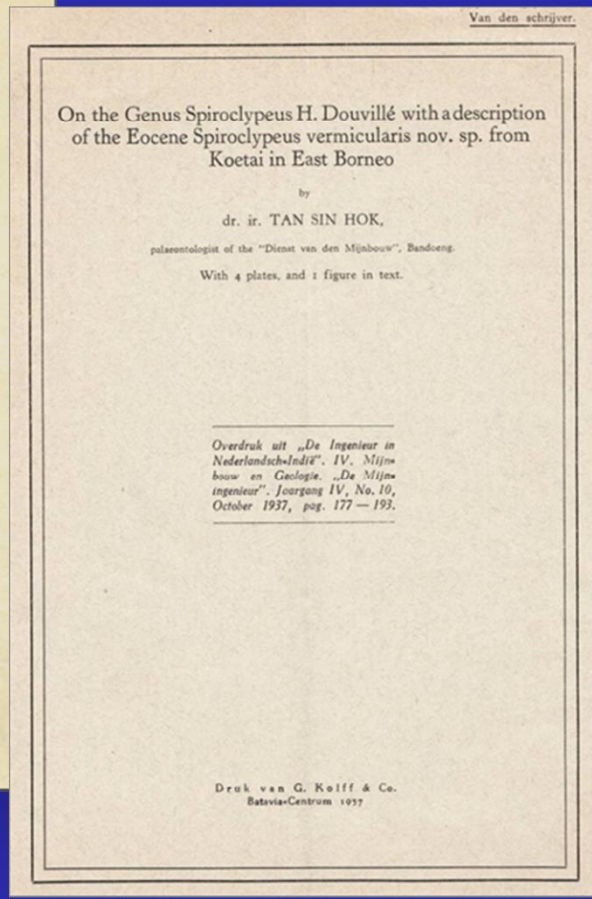
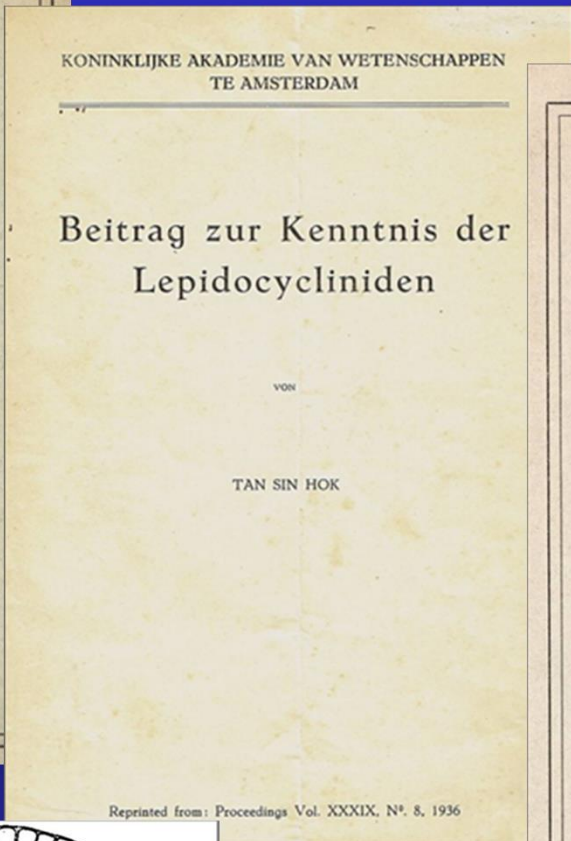
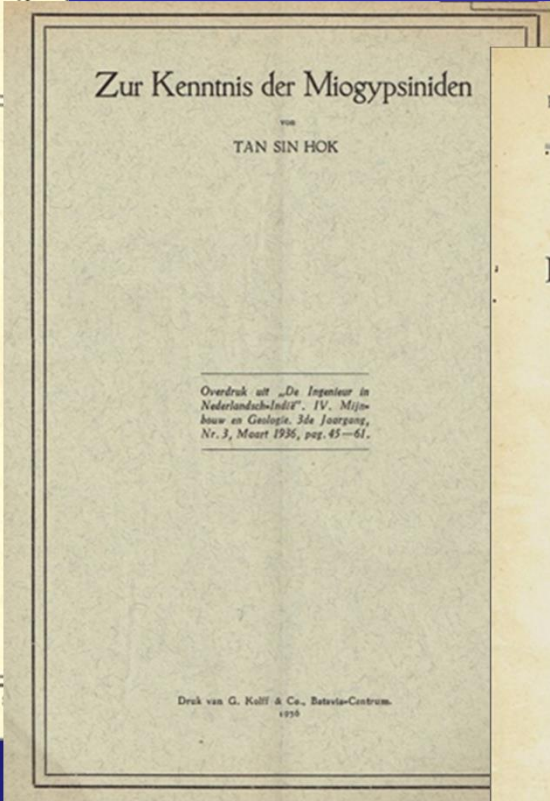
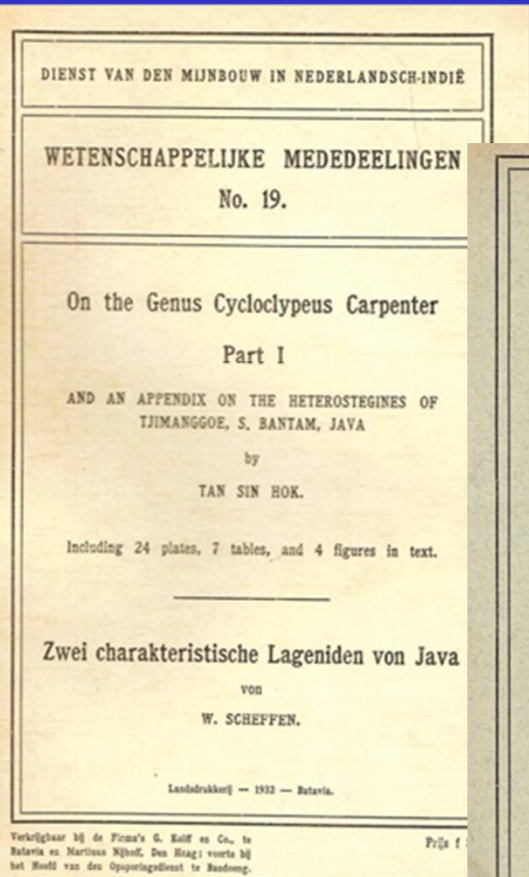
Internationally acclaimed pioneer in Mesozoic radiolaria



Early Cretaceous radiolaria (Tan Sin Hok, 1927)

# Micropaleontologists - Tan Sin Hok

**Internationally acclaimed pioneer in evolution patterns of larger foraminifera  
(significant practical value for age dating of Tertiary limestones)**



**Evolution from Operculina to  
Heterostegina to Cycloclypeus  
(Tan Sin Hok, 1927)**

# Micropaleontologists - Tan Sin Hok



Tan Sin Hok identity card issued by the City of Bandung during the Japanese Administration



The third and final grave of Tan Sin Hok at the Pandu Ereveld war cemetery,

Brieven uit voormalig Nederlands-Indië, 1928-1946  
Het digitale archief van de Stichting SBTS

## Brieven Tan-Schepers



Letters to the family: <http://www.brieven-tan-schepers.nl>

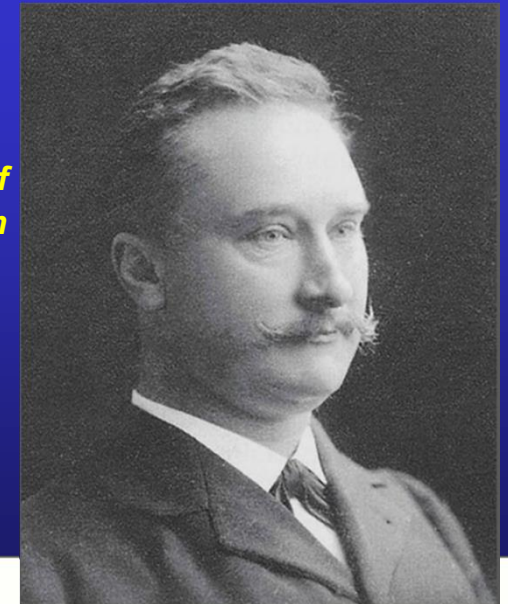
# Pioneers- Vol. 3: Mammal Paleontologists - E. Dubois

## PIONEERS OF MAMMALS- HOMINIDS

M. Eugene F.T. DUBOIS (1858-1940)

- \* Medical doctor with a passion for proving Darwin's Theory of Human evolution
- \* Excavations in Sumatra (1887), Java (1889-1895)

Dubois as Professor of Geology in Amsterdam in 1902



### PITHECANTHROPUS ERECTUS.

EINE

MENSCHENÄHNLICHE ÜBERGANGSFORM

AUS

JAVA.

VON

EUG. DUBOIS,  
KUNSTGEHILFE DES NEDERLANDSCH-INDISCHEN ARCH.

MIT ZWEI TAFELN UND DREI IN DEN TEXT GEDRUCKTEN FIGUREN.

BATAVIA  
LANDESDRUCKEREI  
1894.  
NACHDRUCK 1915  
G.E. STECHERT & CO (ALFRED HAFNER)  
NEW-YORK.

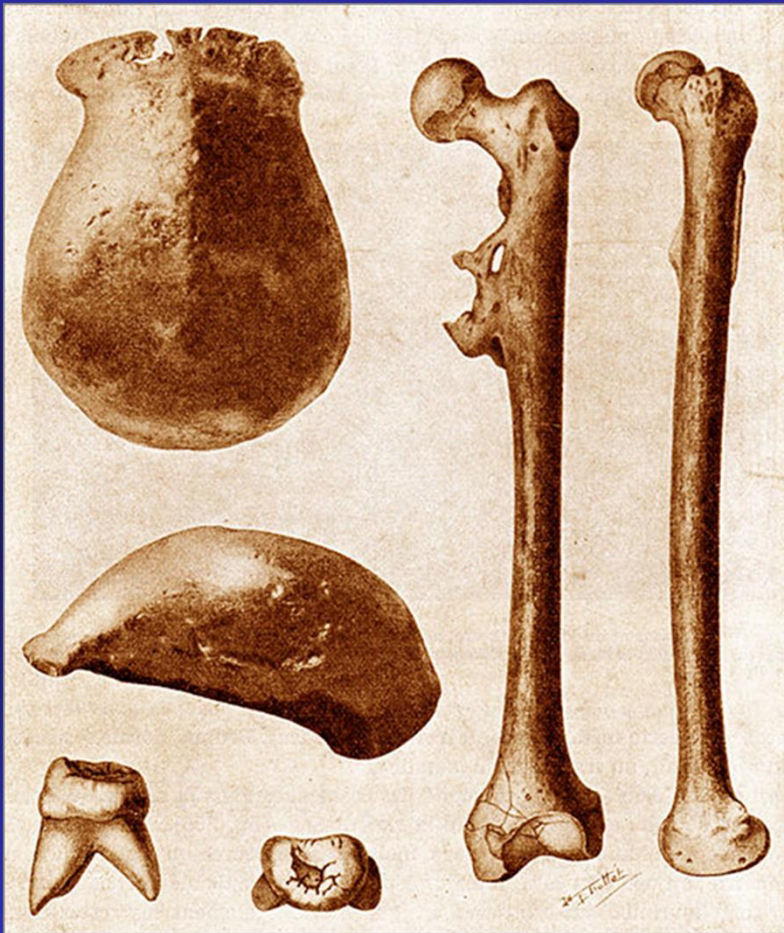


The Trinil excavation site along the left bank of the Solo River in Central Java in 1900



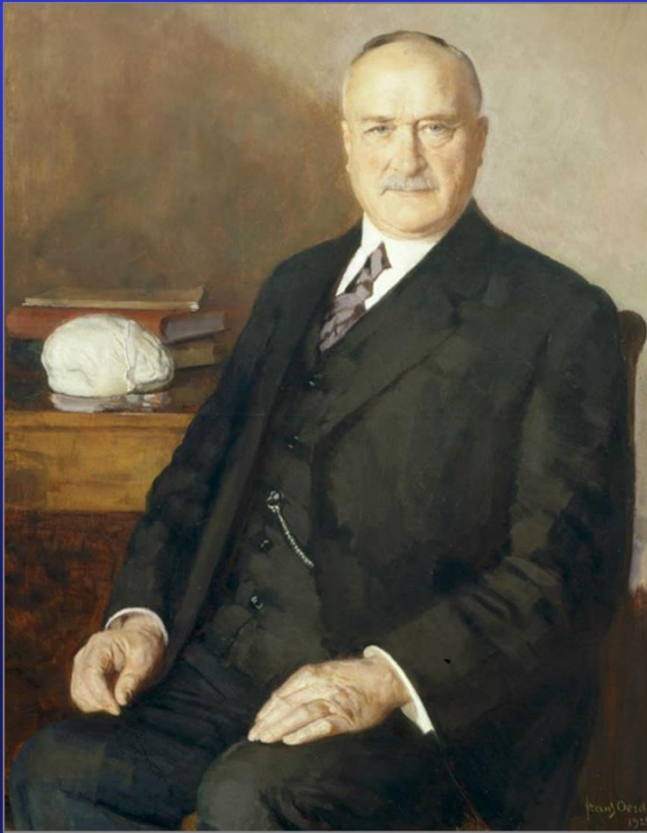
## Mammal Paleontologists - E. Dubois

**Trinil excavation: Skull cap found in 1891 (much smaller brain volume than modern man), and a straight thighbone (femur) in 1892 suggesting it walked upright.**



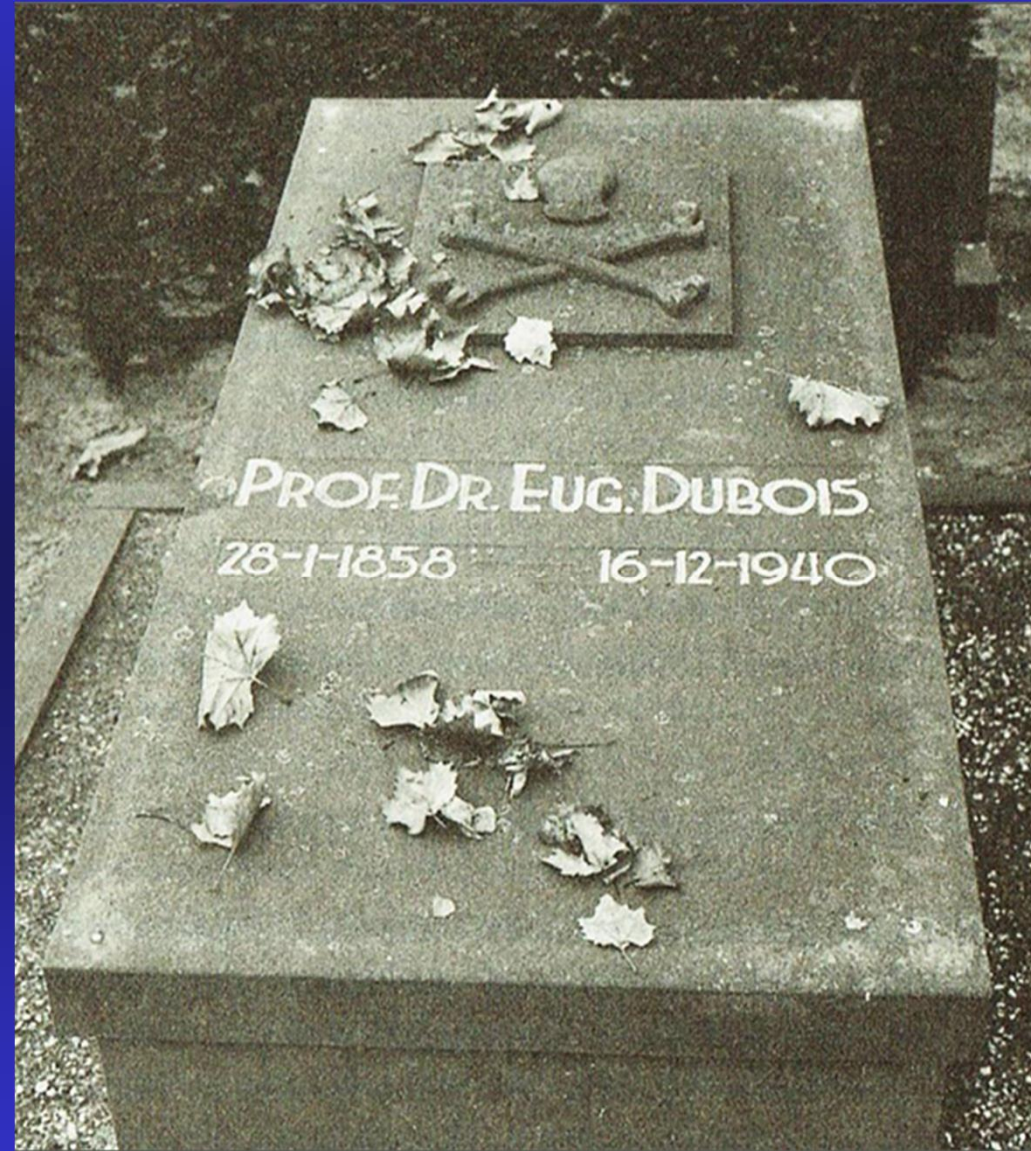
**Monument for P.e. (= Pithecanthropus erectus) along the Solo River  
Designed and placed by Dubois in September 1894 to permanently mark  
the Trinil discovery site across the river ('175m ONO'= 175 m to ENE).**

## Mammal Paleontologists - E. Dubois



Portrait of E. Dubois in 1928, at age 70

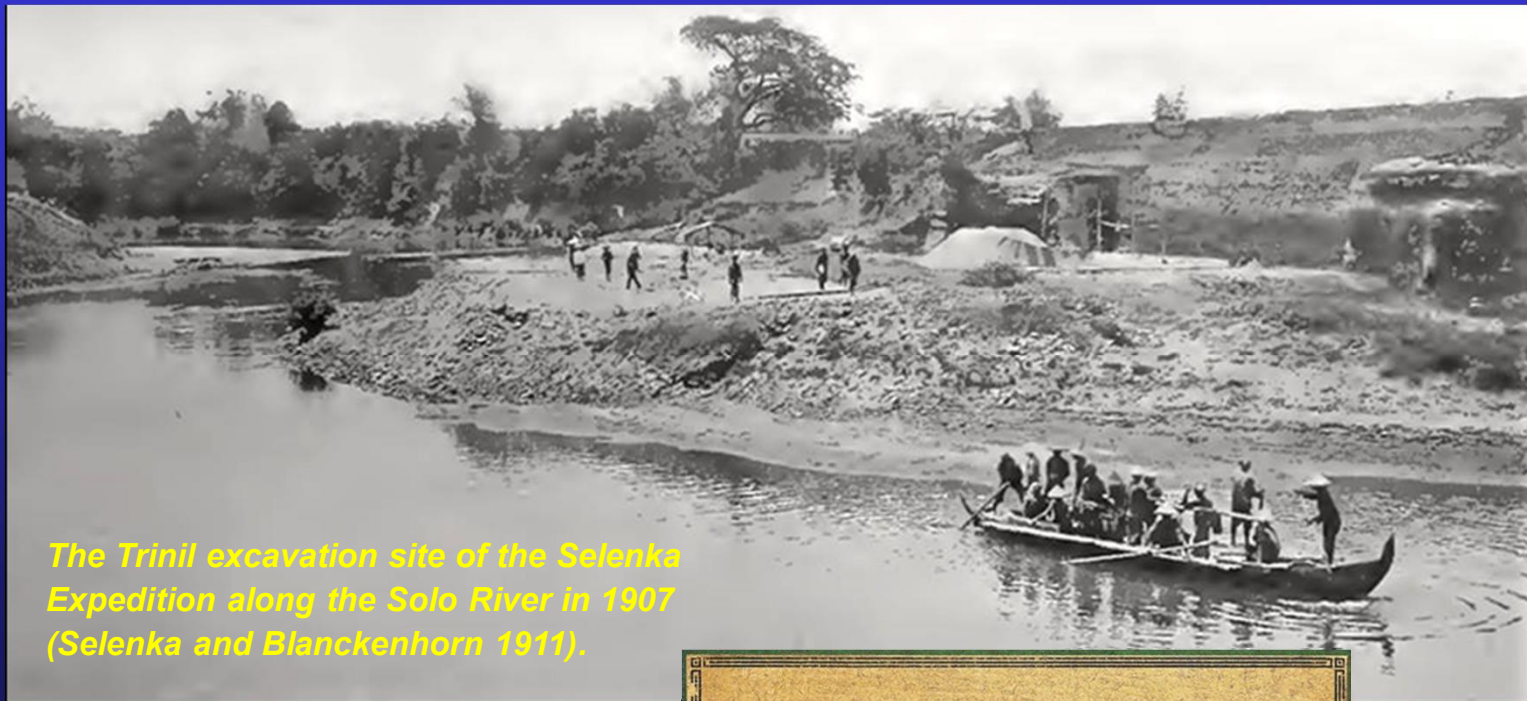
Grave of Eugene Dubois in Venlo cemetery  
- with Pithecanthropus skull and thigh bones



# Mammal Paleontologists - L. Selenka

## PIONEERS OF MAMMALS- HOMINIDS

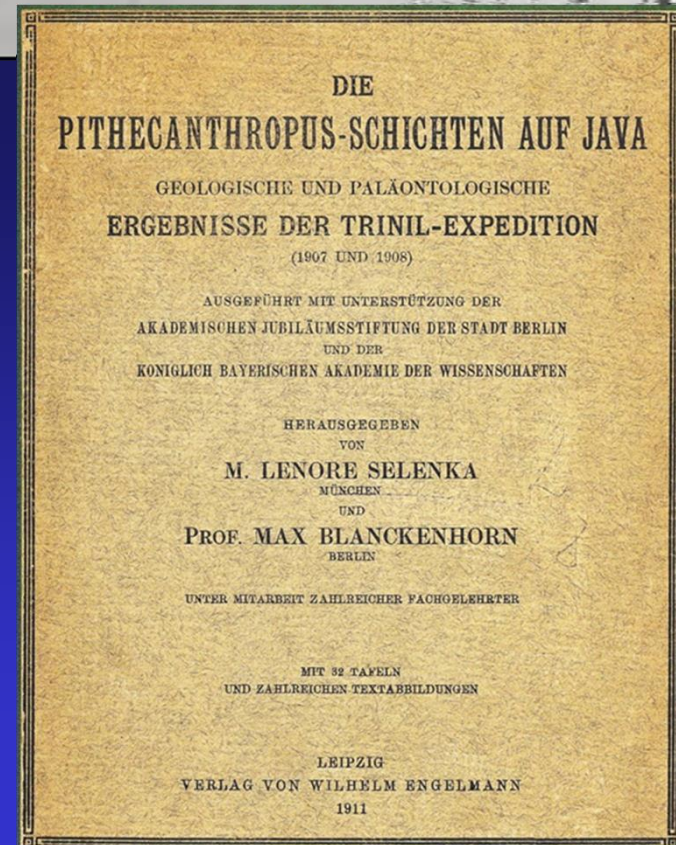
M. Lenore SELENKA



*The Trinil excavation site of the Selenka Expedition along the Solo River in 1907 (Selenka and Blanckenhorn 1911).*



*Skull and tusks of Stegodon at Trinil (Selenka and Blanckenhorn 1911).*





# Mammal Paleontologists - R. von Koenigswald

## PIONEERS OF MAMMALS- HOMINIDS

**G.H. Ralph VON KOENIGSWALD (1902-1982)**

- \* *Vertebrate paleontologist with the Dienst van den Mijnbouw (Geological Survey), from 1931-1946.*
- \* *Professor of Paleontology at University of Utrecht, 1948-1968*
- \* *In 1968 moved to Senckenberg Institute in Frankfurt, with all his collections*

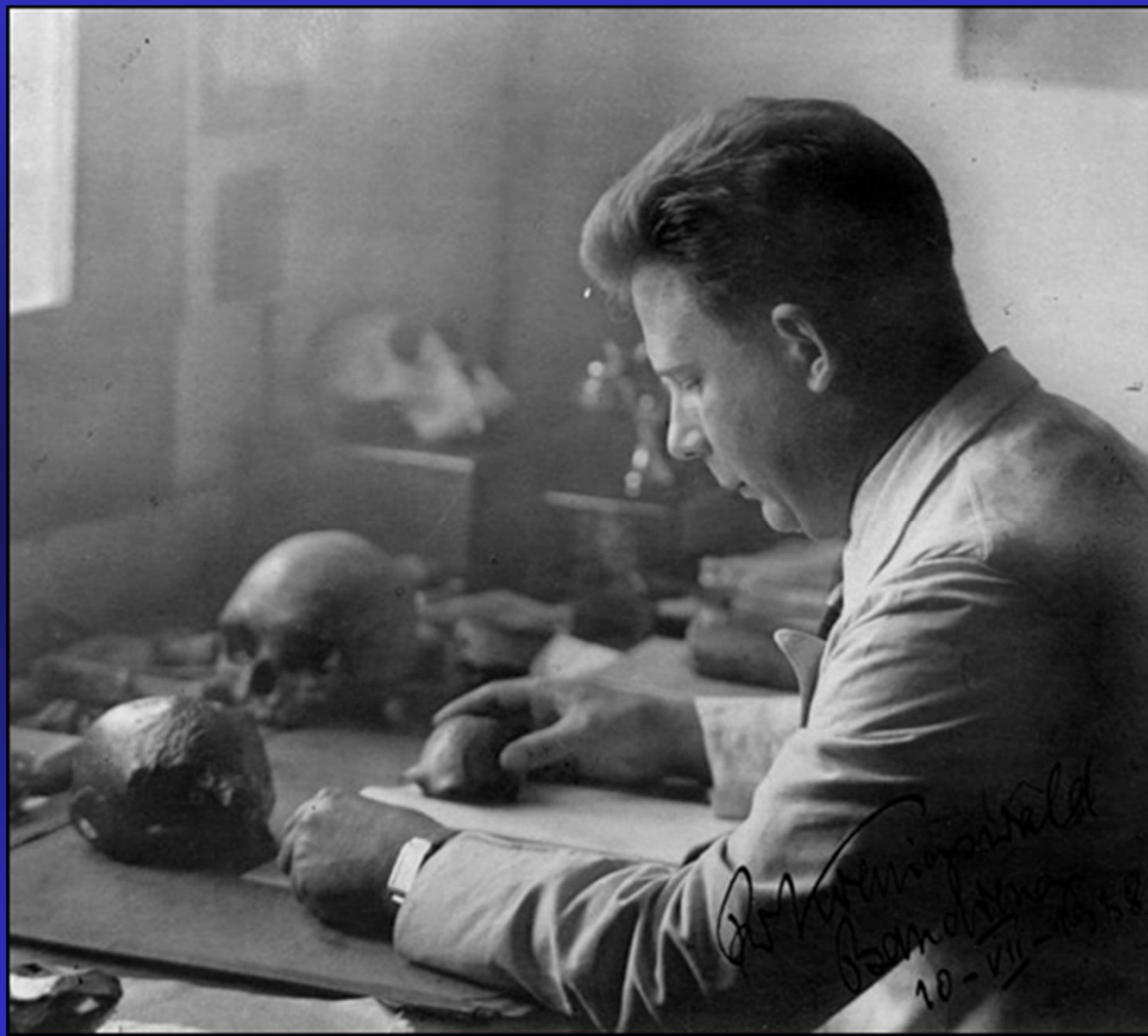
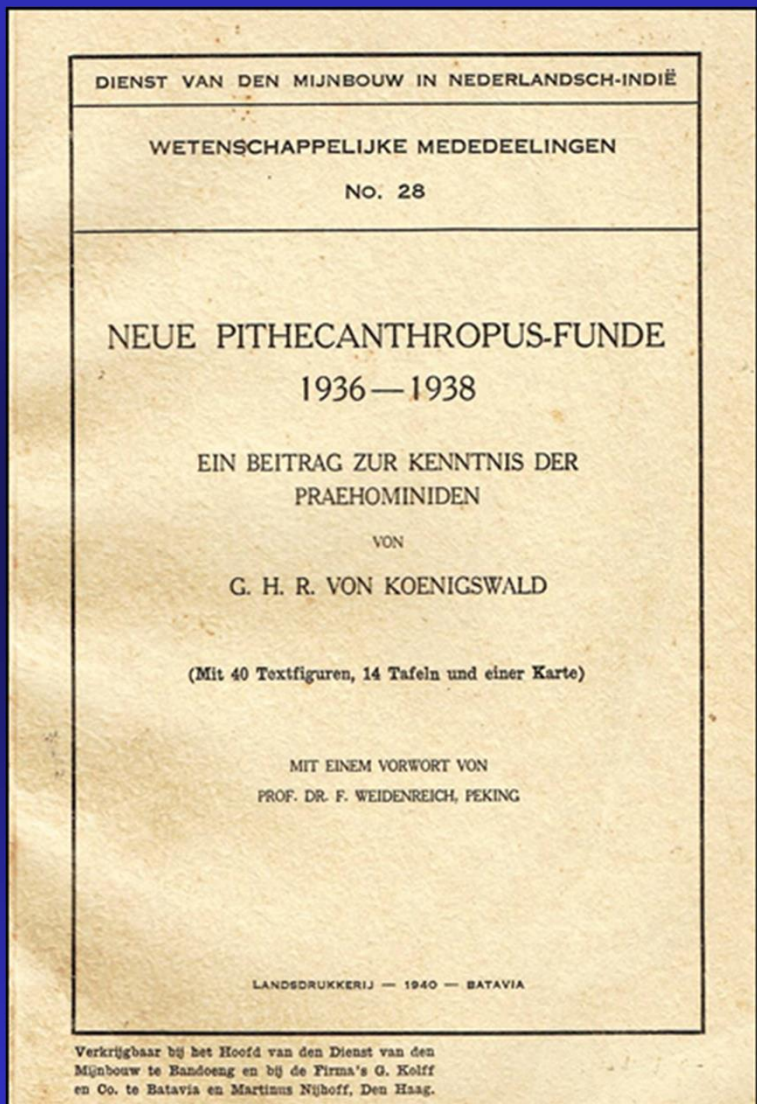


*R. von Koenigswald and F. Weidenreich on the way to Trinil, Java, in September 1938.*

# Mammal Paleontologists - R. von Koenigswald

## G.H. Ralph VON KOENIGSWALD

\* Several important new discoveries of Pithecanthropus hominid fossils in Central and East Java



**Dr. Ralph von Koenigswald at his desk at the Geological Survey in Bandung in 1938. In his right hand the small skull of 'Mojokerto child', a 1 Million year old Homo erectus, discovered in East Java in 1936**

## Mammal Paleontologists - R. von Koenigswald



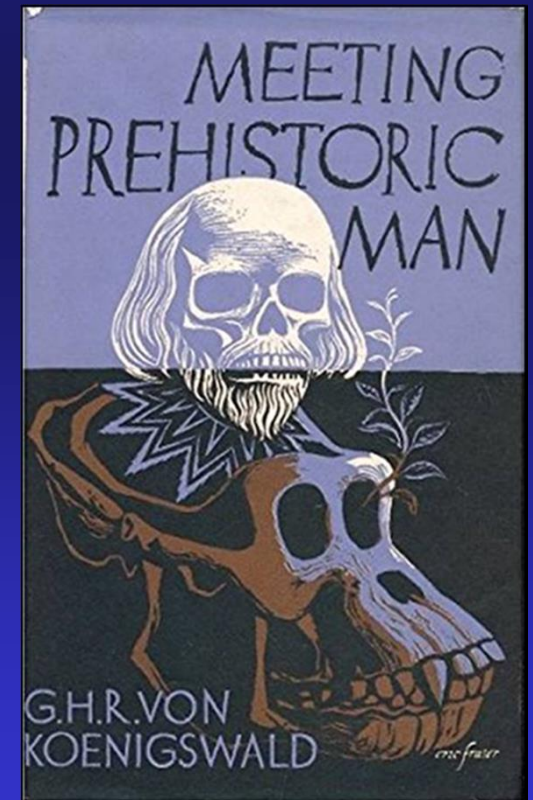
Four geologists who contributed to the knowledge of hominid fossils in Java, at the "P.e. Monument" in Trinil, July 1934:

Carel ter Haar,

Jan Duyfjes,

Ralph von Koenigswald

Jozef Zwierzycki



Von Koenigswald (1956) book

## ***Mammal Paleontologists - R. von Koenigswald***



***Meeting of Java paleoanthropology experts at the University of Utrecht in the 1960s.***

***From left to right : Teuku Jacob, Ralph von Koenigswald, Peter Marks and S. Sartono.***

***The Von Koenigswald hominid fossil collection from Sangiran, Java, in the Senckenberg Museum, Frankfurt***



# Pioneers- Vol. 3: Paleobotanists - H. Goeppert

## PIONEERS OF PALEOBOTANY

J. Heinrich R. GOEPPERT

(1800-1884)

\* Professor of Botany at University of  
Breslau (Wroclaw), 1831-1884

## DIE TERTIÄRFLORA AUF DER INSEL JAVA,

NACH DEN ENTDECKUNGEN DES HERRN FR. JUNGHUHN

BESCHRIEBEN UND ERÖRTERT

IN IHREM VERHÄLTNISSE ZUR

## GESAMMTFLORA DER TERTIÄRPERIODE.

VON

Johann Heinrich Robert Göppert,

DR. MED., CHIR. ET PHILOS., ORDENTL. PROFESSOR DER MEDICIN U. D. PHILOSOPH. FACULT.  
UNIVERS. ZU BRESLAU, DIRECTOR DES BOTANISCHEN GARTENS, MITTEN DER KÖNIGL.  
PREUSS. ROTEN ADELSDIENST DRITTER KLASSE MIT DER SCHLEIFE, PROFESSOR DER SCHULE, GEBI.  
P. NATURL. CULTUR, HERRSCHER ANDERER VIELERER VEREINE UND ACADEMIEN, ZU ALTENBURG,  
MAGDEB., HAMBURG, BERLIN, BOM, DANZIG, ERFURT, DRESDEN, FRANKFURT, GÖRLITZ, H.  
LEIPZIG, HAMBURG, HANNOVER, KÖNIGSBERG, MORAU, PARIS, PETERSBURG, PRAG,  
WÜRZBURG, TRIEN, WÜRZBURG, ETC. WIRKL. CORRESP. U. ERENWÜRDIGER.

MIT VIERZEHN FARBIG GEDRUCKTEN TAFELN.

HERAUSGEGEBEN AUF VERANLASSUNG UND MIT UNTERSTÜTZUNG

des Ministerium's der Koloniën.

IN GRAVENHAGE.

Verlag von C. W. Nieling,

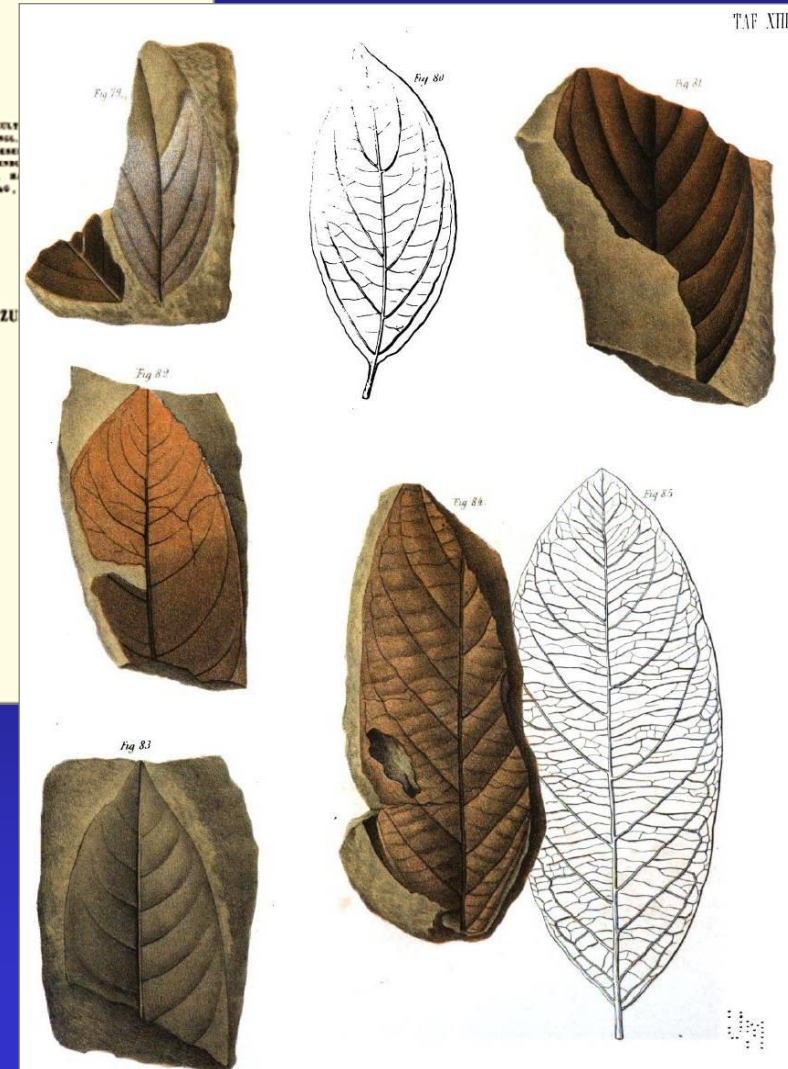
1854.

'The Tertiary Flora of Java Island,  
after the discoveries of Mr. Fr.  
Junghuhn' (J.H.R. Goeppert, 1854).

\* First study of Neogene plant  
fossils from Java



Neogene fossil leaves from  
Java (Goeppert, 1854).



# Pioneers- Vol. 3: Paleobotanists - W. Jongmans

## PIONEERS OF PALEOBOTANY Wilhelmus J. JONGMANS (1878-1957)

\* Known for studies of the Permian  
'Cathaysian' Jambi Flora from Sumatra,  
1925, 1935

### DIE PALÄOBOTANISCHEN ERGEBNISSE DER DJAMBI-EXPEDITION 1925,

VON  
Prof. W. J. JONGMANS.

(Mit 58 Tafeln).

Overdruk uit het Jaarboek van het Mijnwezen  
in Nederlandsch-Indië 1930 „Verhandelingen”

LANDSDRUKKERIJ - 1935 - BATAVIA

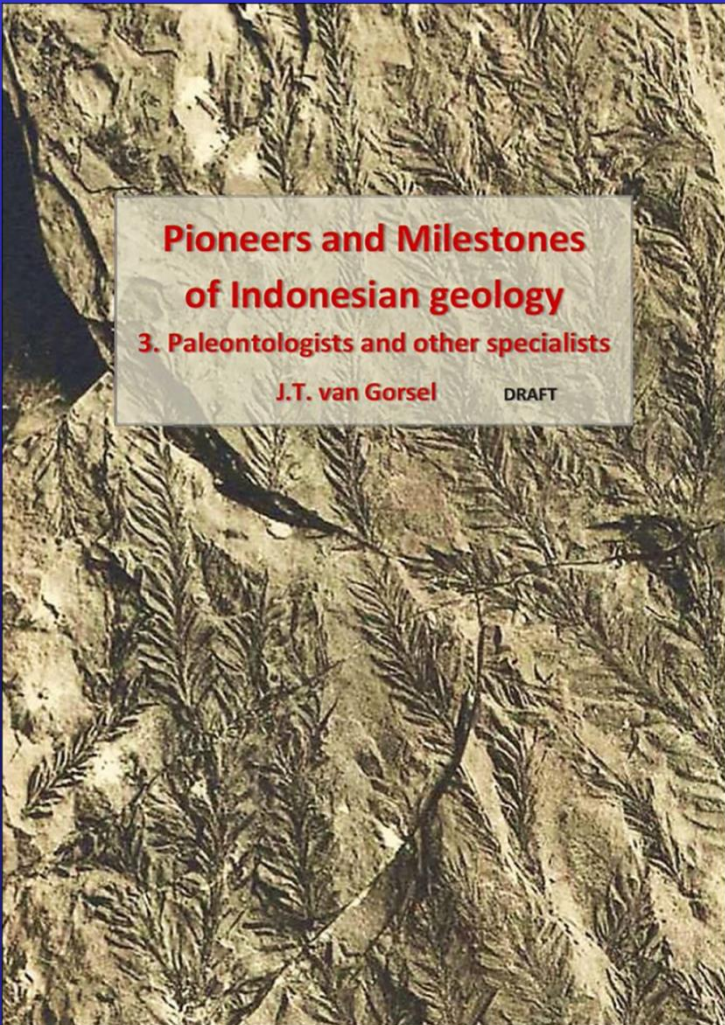
The Paleobotanical results of  
the 1925 Jambi Expedition  
(Jongmans, 1935).

Early Permian 'Jambi Flora' plant fossils  
from Sungai Garing, Sumatra (Jongmans  
and Gothan 1925; mainly *Pecopteris* spp.)

W. J. JONGMANS und W. GOTHAN: Beiträge zur Kenntnis der Flora des Oberkarbon  
von Sumatra.



Prof. W.J. Jongmans in the 1950s



**Pioneers and Milestones  
of Indonesian geology**

**3. Paleontologists and other specialists**

**J.T. van Gorsel** DRAFT

**PETROGRAPHERS**

*Willem Frederik GISOLF*

*Paul ESENWEIN*

**GEOCHEMISTS**

*Eduard H. VON BAUMHAUER*

*Hubertus W.V. WILLEMS*

*Wilhelminus B.C. VAN TONGEREN*

**AGROGEOLOGISTS**

*E.C. Julius MOHR*

*Josef Martin Karl SZEMIAN*

**GEOPHYSICISTS**

*Felix A. VENING MEINESZ*

*Hendrik P. BERLAGE Jr*

*Anne Reinier RITSEMA*

**GEO MORPHOLOGISTS**

*Antonie J. PANNEKOEK*

*Herman Th. VERSTAPPEN*

**ARCHEOLOGISTS**

*H. Robert VAN HEEKEREN*

*Theodorus L. VERHOEVEN*

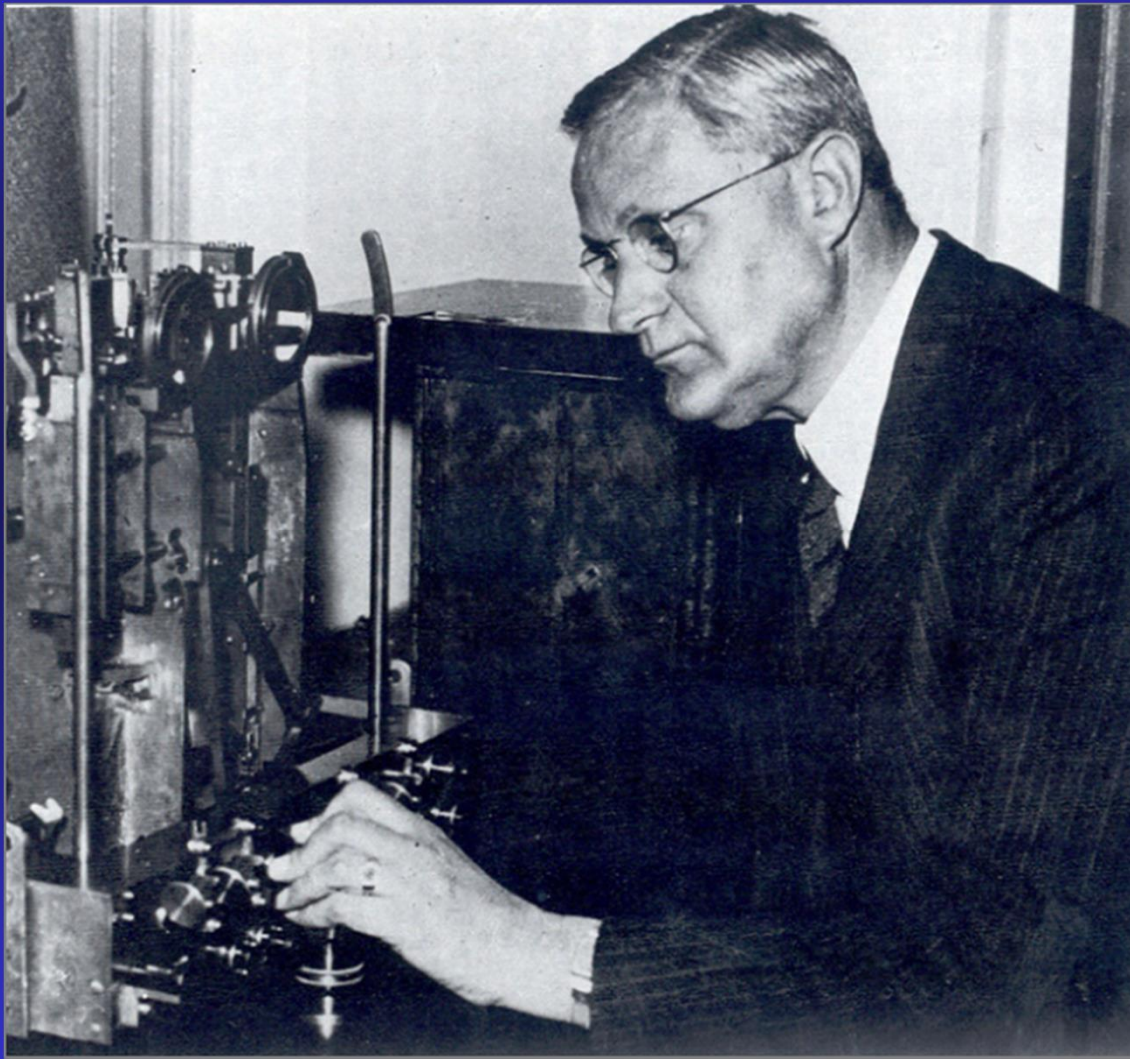
***GEOFYSICISTS***  
***(Gravity, Seismology)***



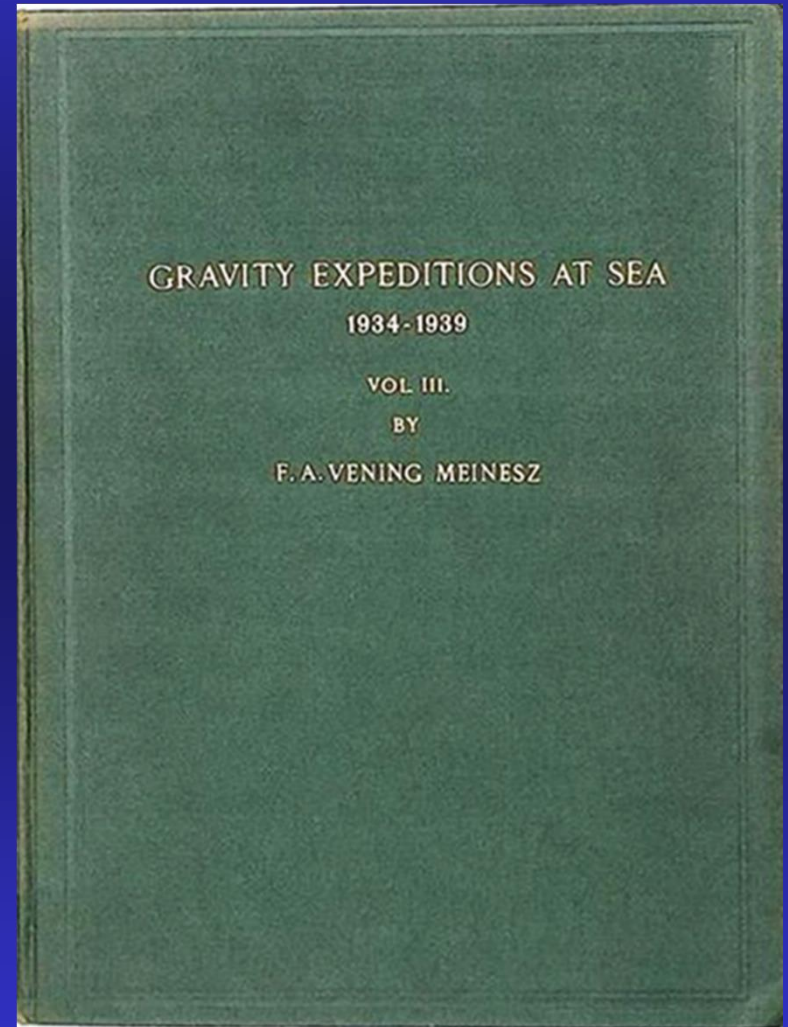
## Geophysicists - F. Vening Meinesz

**Felix A. VENING MEINESZ (1887-1966)**

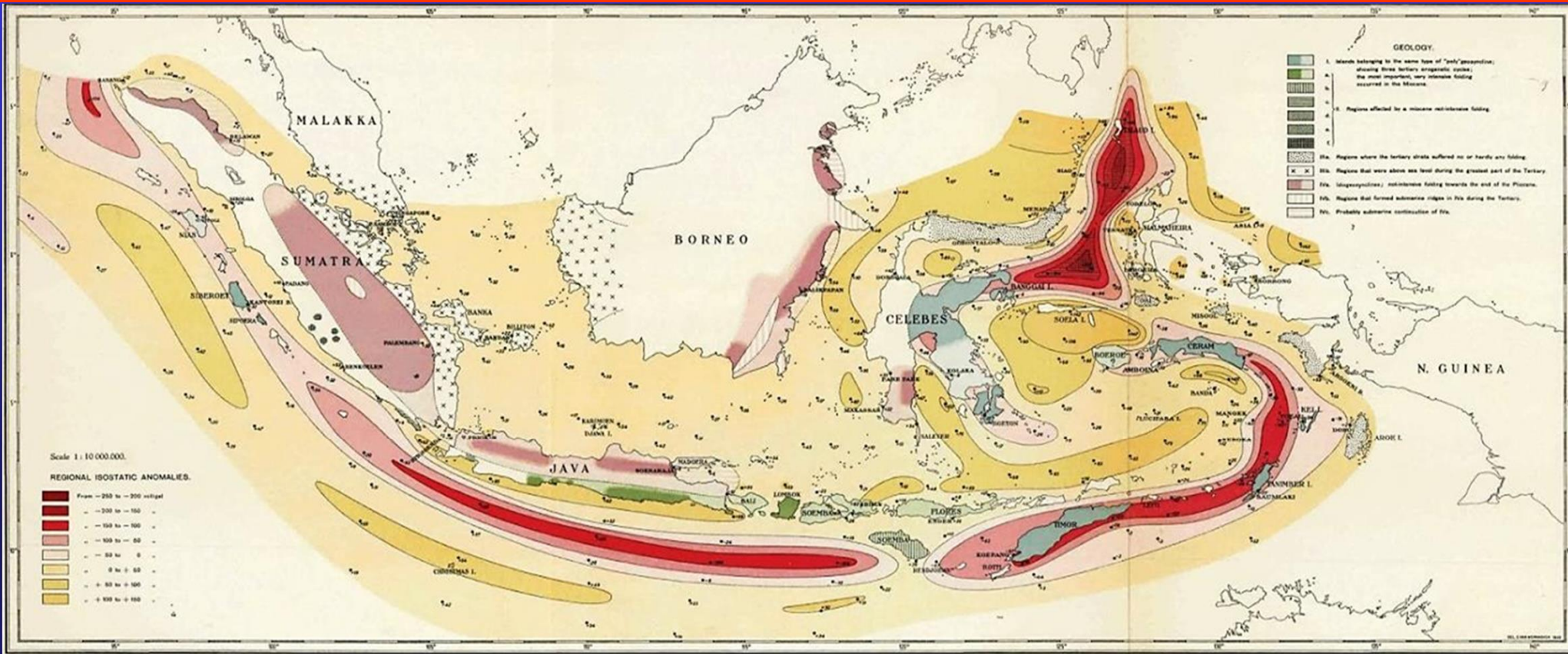
- \* From 1927-1957 Professor of Geodesy, Cartography and Geophysics at the Geographic Institute of the University of Utrecht and from 1937-1957
- \* Known mainly for his pioneering marine gravity surveys conducted from Dutch navy submarines in 1923-1939



**Vening Meinesz at work in a submarine with his marine gravimeter (the 'Golden calf')**

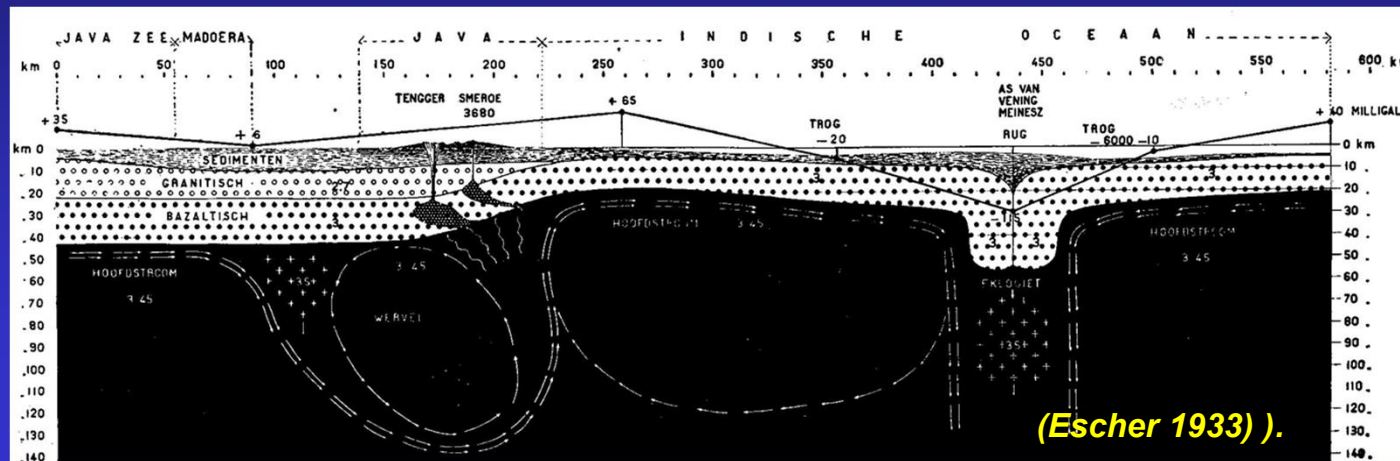


# Geophysicists - F. Vening Meinesz



\* 'Vening Meinesz belts', long narrow zones of unusually low isostatic gravity anomalies over the trench and accretionary prism of Sunda- Banda arc and Molucca Sea (in red; now known as subduction zones).

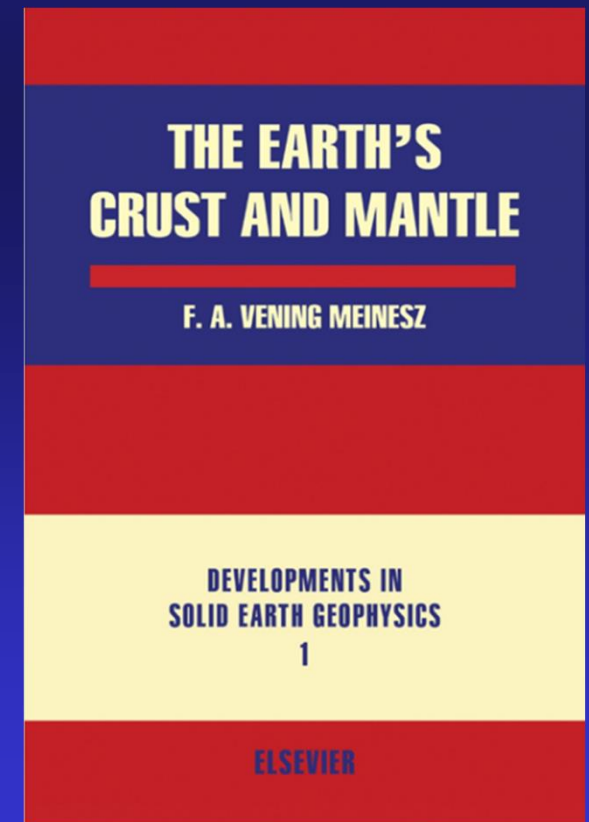
\* Interpreted by V.M. as zones of active 'downwelling' or 'crustal downbuckling' (Vening Meinesz 1933, 1934)



# Geophysicists - F. Vening Meinesz

## **VENING MEINESZ and THE CONTINENTAL DRIFT THEORY: Fixists vs Mobilists**

- 1. In the 1920's the Theory of Continental Drift of A. Wegener (1915) was quite popular with influential Dutch geologists of that time (Molengraaff, Brouwer, Van Waterschoot van der Gracht, etc.) (but not Verbeek, Van Bemmelen). Wegener's model of 'sial' (continental) blocks 'drifting' over long distances over 'sima' (oceanic) crust regions could explain many geological features like foldbelts, ocean basins and biogeographic and paleoclimatic patterns.**
- 2. From his 1920s-1930s gravity work Vening Meinesz correctly concluded that:**
  - (1) zones of (oceanic) crust with negative anomalies were obviously not in isostatic equilibrium, which was probably because they were actively depressed ('downbuckling')**
  - (2) this also implied that oceanic crust was quite rigid, and unable to deform and compensate any loading locally**
- 3. Vening Meinesz' observations of rigidity of oceanic crust caused support for the Wegener theory to diminish. It now seemed physically impossible for continental blocks to move like icebergs in the ocean through super-strong oceanic crust. This became the main reason for him and his co-workers like Kuenen and Umbgrove in the 1930's to reject the possibility of Continental Drift.**
- 4. In the early 1960's, as Plate Tectonics with its subduction process started to emerge, V.M. was less opposed to Continental drift, and allowed for mantle convection currents to be a driving force of continental movements (Vening Meinesz, 1964)**

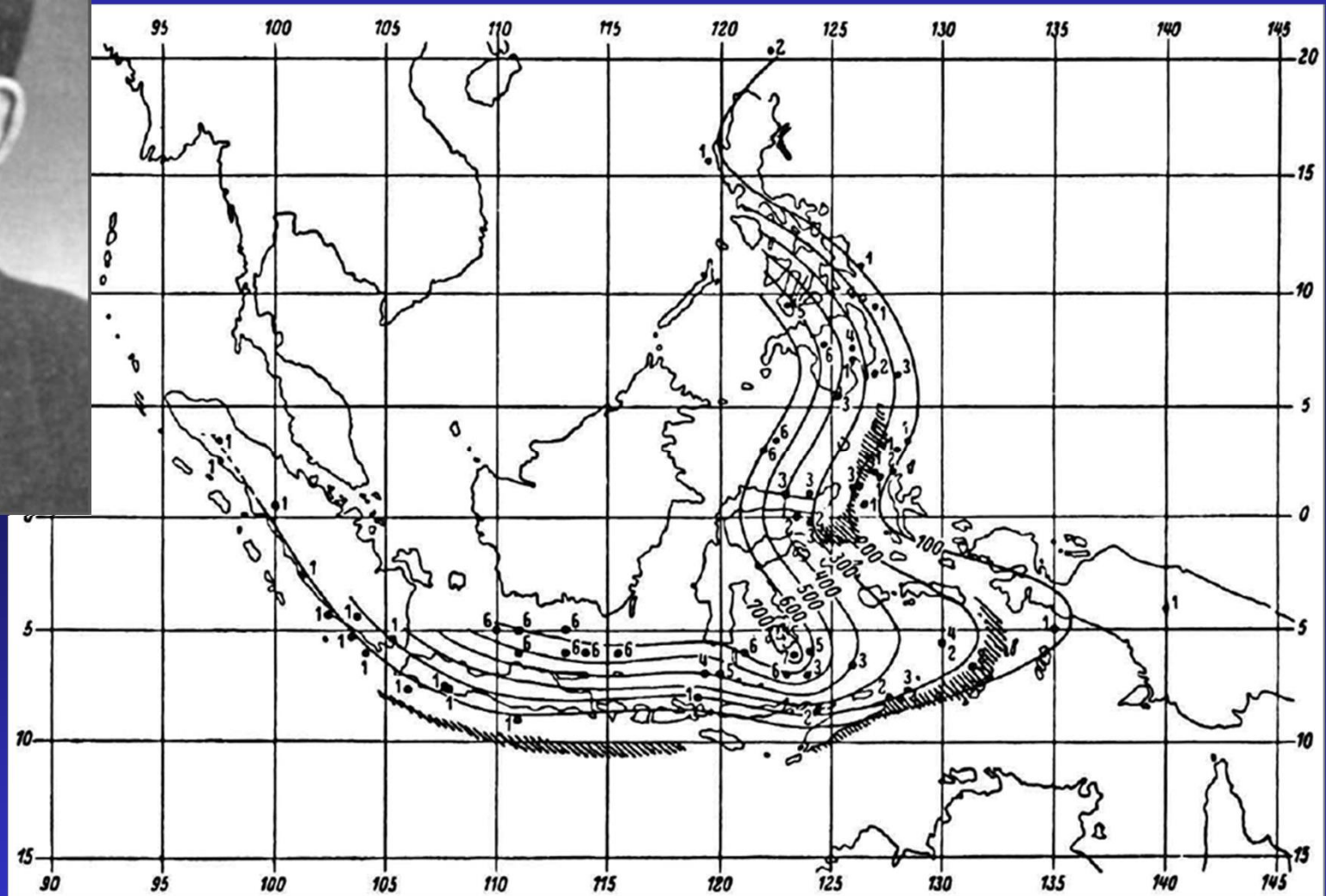


## Geophysicists - H.P. Berlage

**Hendrik P. BERLAGE Jr (1896-1968)**

**\* Seismologist at the Koninklijk Magnetisch en Meteorologisch Observatorium in Batavia from 1925-1950.**

**\* Recognized a Wadati-Benioff zone before Wadati and Benioff**



**Locations of intermediate and deep earthquake hypocenters in the Indonesian region (Berlage, 1937; depths in 100s of km).**

**The hypocentres are located along a plane that dips to the NW and W.**



**Pioneers and Milestones  
of Indonesian geology**

**4. Petroleum and Mining Industries,  
Post-1945 Restart**

**J.T. van Gorsel**

**DRAFT**

## **EARLY PETROLEUM ENTREPRENEURS**

**Jan REERINK**

**J.B. August KESSLER**

**Jacobus H. MENTEN**

**Aeilko J. ZIJLKER**

**Adriaan STOOP**

**W.H. DE GREVE Jr**

## **PETROLEUM GEOLOGISTS**

**F.C.B. Hugo BUCKING**

**Cesare PORRO**

**Hans CLOOS**

**Willem C. KLEIN**

**A. Arnold HEIM**

**G. Leonard SMIT SIBINGA**

**Hans R. GRUNAU**

**Jacobus J. HERMES**

**Carl SCHMIDT**

**Hans HIRSCHI**

**Herman WITKAMP**

**Friedrich WEBER**

**Lajos VON LOCZY Jr.**

**Ernst KUNDIG**

**Horst F.J. VON BANDAT**

## **MINERS, PROSPECTORS, MINING GEOLOGISTS**

**Tin: John Francis LOUDON**

**C.H.J. WILHELM**

**Gold: Johann Wilhelm VOGEL**

**Reinier Dirk VERBEEK**

**Samuel John TRUSCOTT**

**Petrus Joannes JANSEN**

**C.E.G.H.M.L. HUNDESHAGEN**

**Hendrik TERPSTRA**

**Hermann SIBER**

**Coal: W.H. DE GREVE Sr**

**C. H. VAN RAALTEN**

**James MOTLEY**

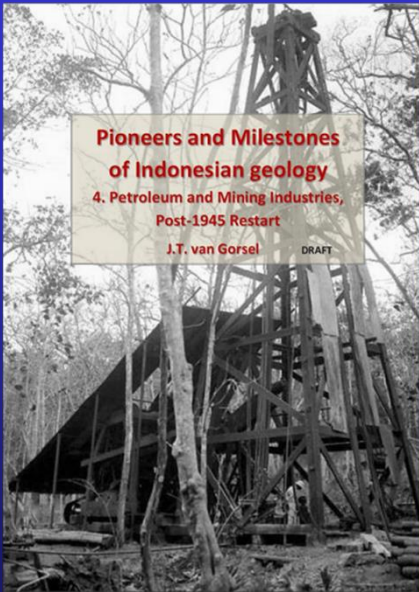
**K.G.J. ZIEGLER**

# **PETROLEUM**



*Discovery well of the Pamolan (Ledok) oil field  
in 1893 in Rembang zone , NE Java  
- by A. Stoop's Dordtsche Petroleum Mij  
- oil gusher from a reservoir at 91m depth*

# Petroleum Entrepreneurs late 1800s



**\* All of the earliest oil fields in Indonesia were discovered by entrepreneurs, drilling surface oil and gas seeps, without input from petroleum geologists**

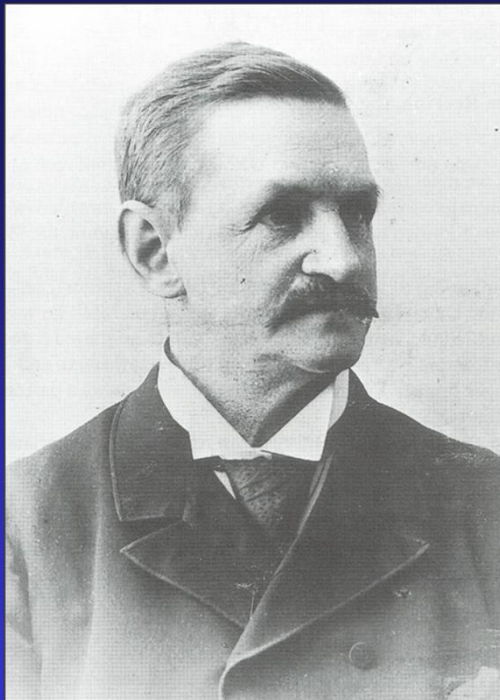
**Jan REERINK** 1873 *Tjibodas Tanggat, Cirebon, C Java. (First oil production in Indonesia)*

**Aeilko J. ZIJLKER** 1884 *Telaga Said field, North Sumatra (Koninklijke Olie/ Royal Dutch)  
(First commercial oil production in Indonesia)*

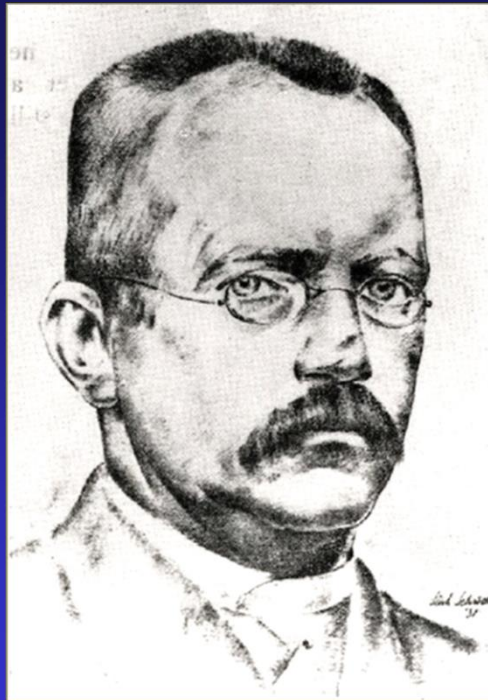
**Adriaan STOOP** 1888 *Kuti Field, 1893 Ledok, NE Java (Dordtsche Petroleum Mij)*

**Jacobus H. MENTEN** 1897 *Sanga-Sanga field, East Kalimantan (on a Menten concession,  
in partnership with British Shell Transport & Trading Co.)*

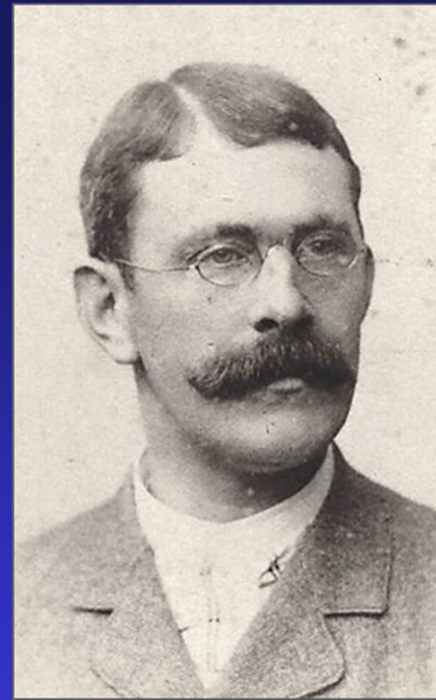
**W.H. DE GREVE Jr** 1897 *Bula Field, NE Seram (Boela Petroleum Maatschappij)  
First field in Eastern Indonesia)*



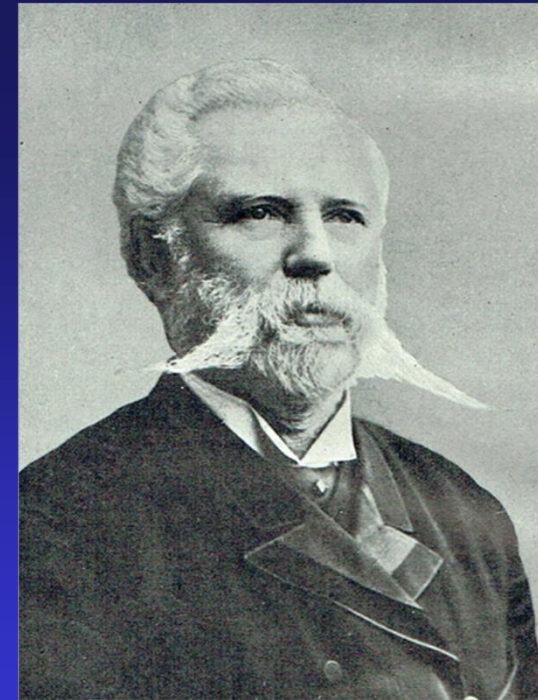
**Jan REERINK**



**Aeilko J. ZIJLKER**

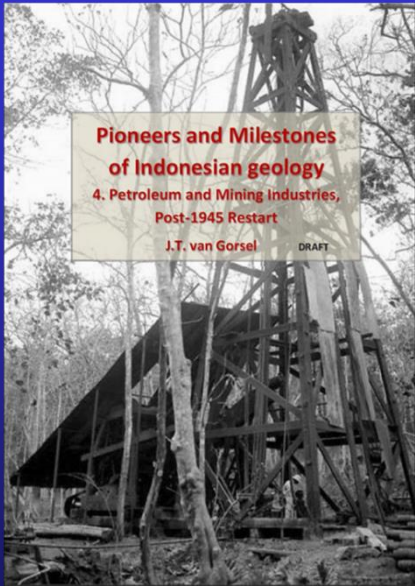


**Adriaan STOOP**



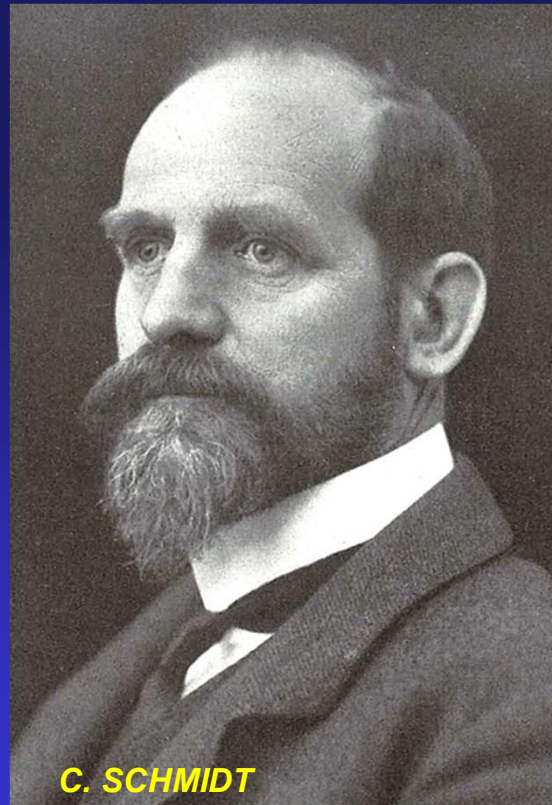
**Jacobus H. MENTEN**

## Petroleum Geologists from ~1900



### THE VERY FIRST PETROLEUM GEOLOGISTS, 1898- ~1900: ANTICLINES !

- \* *The first three petroleum geologists in Indonesia arrived in 1898/1899, after the 'traditional' strategy of drilling around oil-gas seeps started to fail in Sumatra*
- \* *They were German, Swiss and Italian and had experience in oilfields of Galicia and Russia (Baku), and were familiar with the 'Anticlinal Theory of Oil accumulation'*
  - F.C.B. Hugo BUCKING (1898, North Sumatra, for August Jansen, Deli Maatschappij)
  - Carl SCHMIDT and Cesare PORRO (North Sumatra, Royal Dutch, 1898-1899)
- \* *They saved 'Koninklijke Olie' (Royal Dutch) from bankruptcy in 1899, by identifying the productive Perlak Anticline.*





# Petroleum Geologists from ~1900

## EARLY PETROLEUM GEOLOGISTS, 1900- ~1910

*\* In the early 1900s the 'Koninklijke' and other companies hired European contract geologists to map anticlines in all known sedimentary basins of Indonesia. Most of them were Swiss or German, later also Dutch, Polish, Hungarian, etc.*

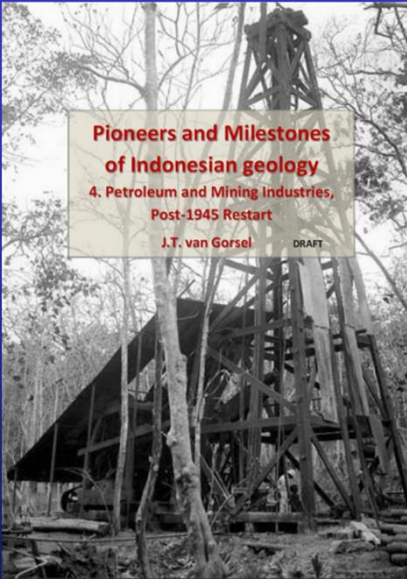
**August TOBLER:** 1900-1903 - South Sumatra for Koninklijke Petroleum (Royal Dutch);  
1903- 1904 for Moeara Enim Petroleum

**Josef T. ERB:** 1900-1910 (Royal Dutch); in South Sumatra, North Borneo

**Hans HIRSCHI:** 1901-1909 (Royal Dutch); in Sumatra, Borneo, East Timor

**August BUXTORF:** early 1900's (Royal Dutch); East Kalimantan

**Johannes WANNER** 1902-1911 (Royal Dutch): Seram, Sumatra, Misool, Sulawesi, Borneo



Pioneers and Milestones  
of Indonesian geology

4. Petroleum and Mining Industries,  
Post-1945 Restart

J.T. van Gorsel DRAFT



*Hirschi field party in Sumatra*

# Petroleum Geologists - A. Tobler

**August TOBLER (1872-1929)**

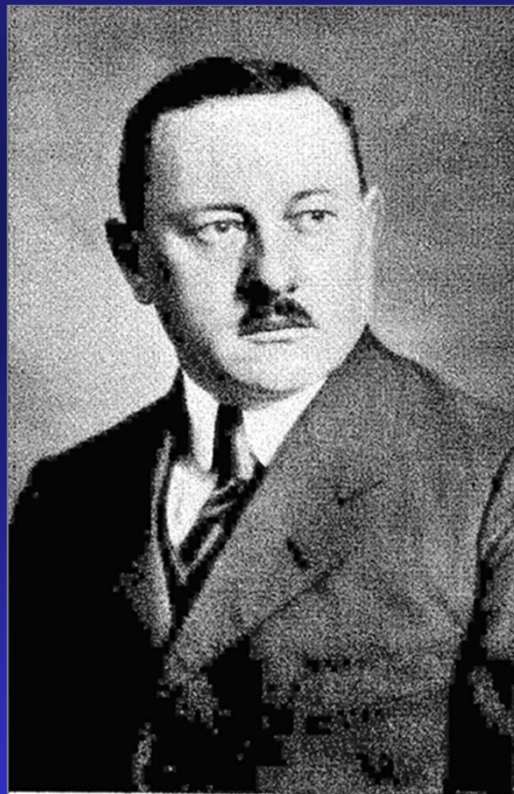
\* Student of Prof. C. Schmidt in Basel, Switzerland

\* Multiple geological mapping contracts in Sumatra and Java between 1900-1912

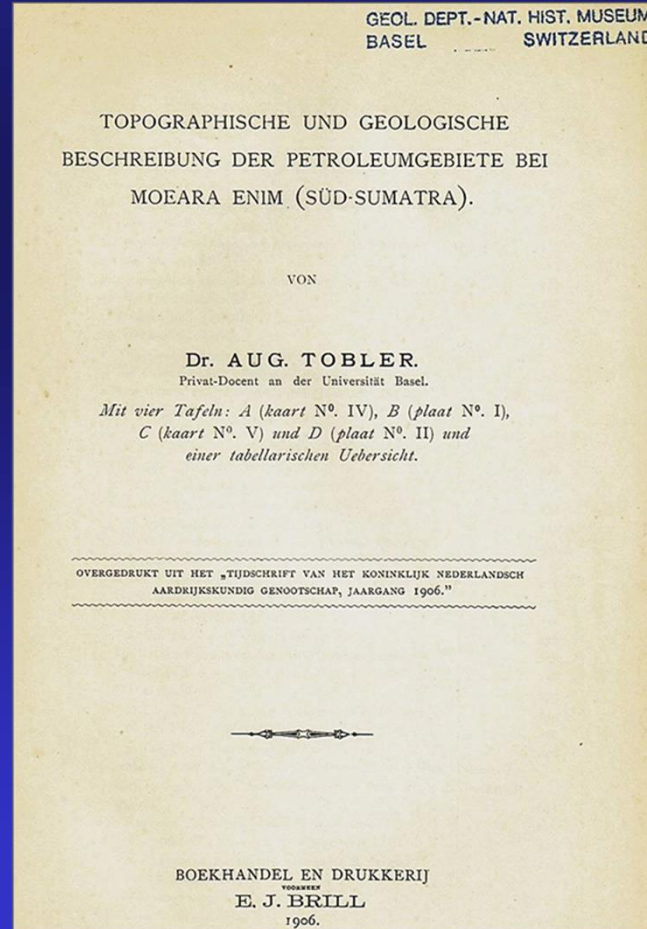
- 1900-1903: mapping the oil-bearing anticlines in Muara Enim area in South Sumatra for the Koninklijke Nederlandsche Mij. tot Exploitatie van Petroleumbronnen in Nederlandsch-Indie (= 'Royal Dutch')

- 1903-1904: same for the Petroleum-Maatschappij Moeara Enim

- 1906-1912 : mapping of Jambi basin and adjacent Barisan Range of South Sumatra for the Dienst van het Mijnwezen (Geological Survey): major progress in understanding of geology



*Aug. Tobler*



**Tobler (1906), Muara Enim report**

# Petroleum Geologists- A. Tobler

## GEOLOGISCHE KARTE

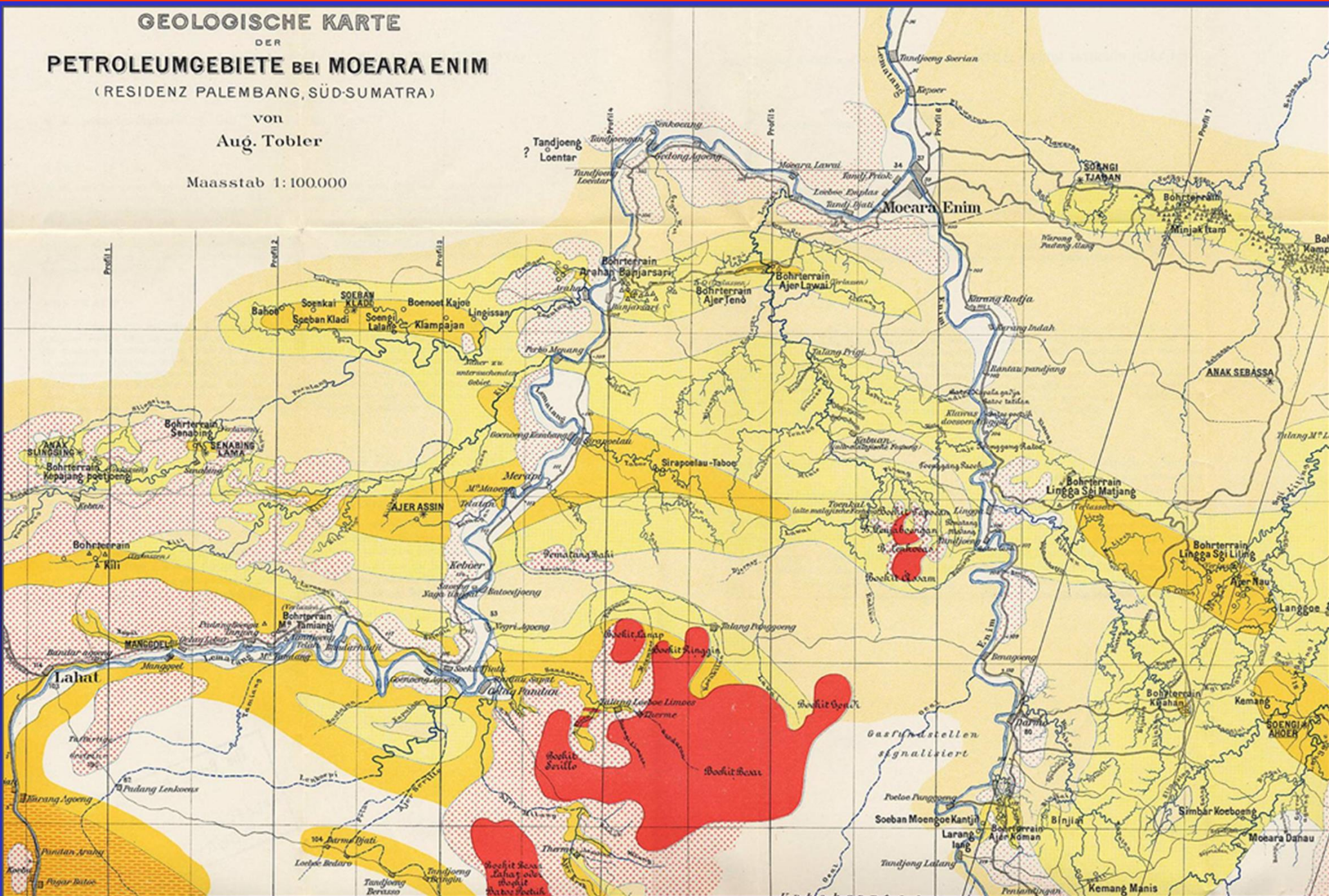
DER

## PETROLEUMGEBIETE BEI MOEARA ENIM

(RESIDENZ PALEMBANG, SÜD-SUMATRA)

von  
Aug. Tobler

Maasstab 1:100.000



Tobler (1906), Muara Enim mapping

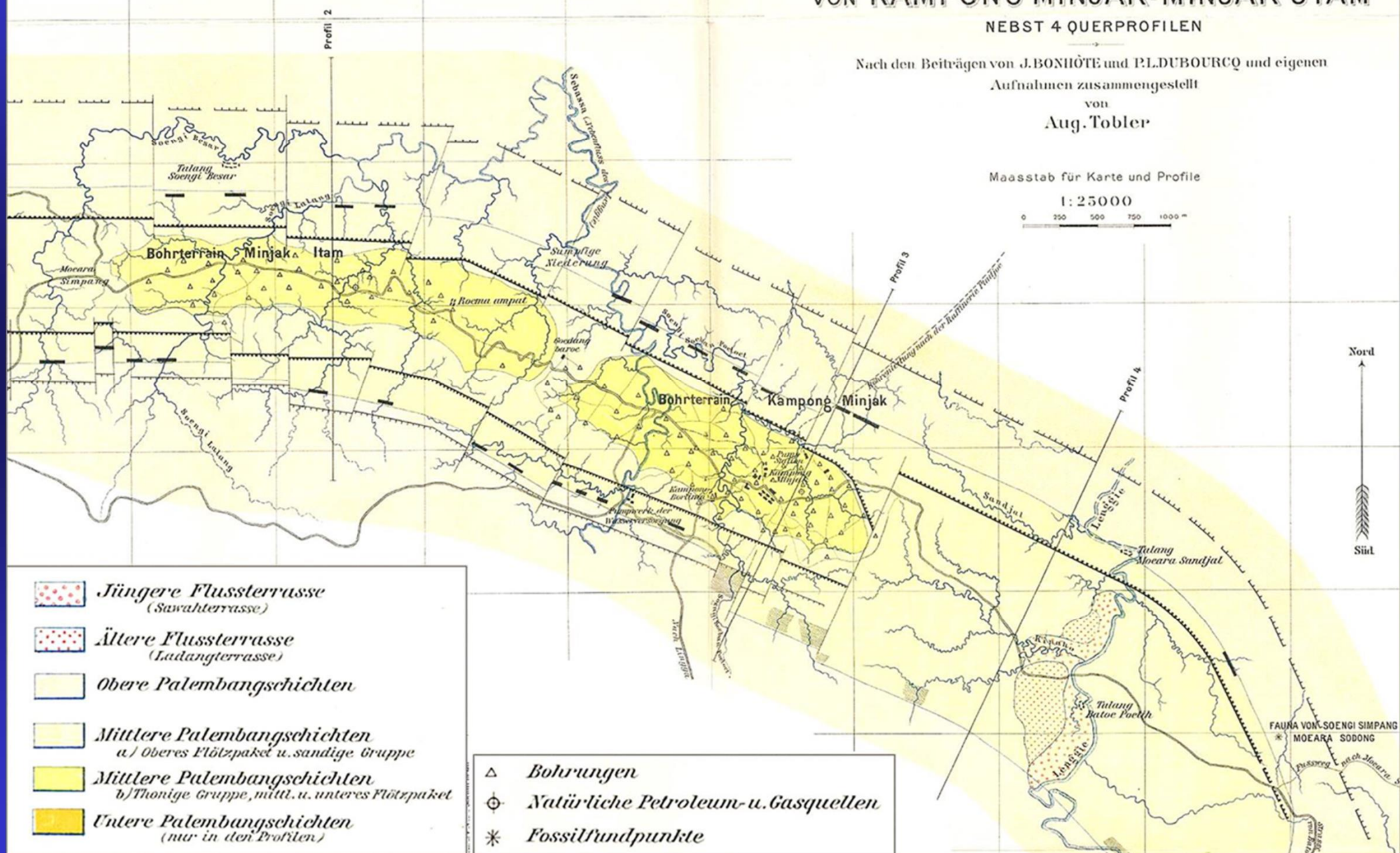
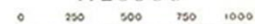
## Muara Enim mapping, S Sumatra Kampong Minjak oil field/ anticline detail (Tobler, 1906)

### GEOLOGISCHE KARTE DER PETROLEUMGEBIETE VON KAMPONG MINJAK-MINJAK JTAM NEBST 4 QUERPROFILIEN

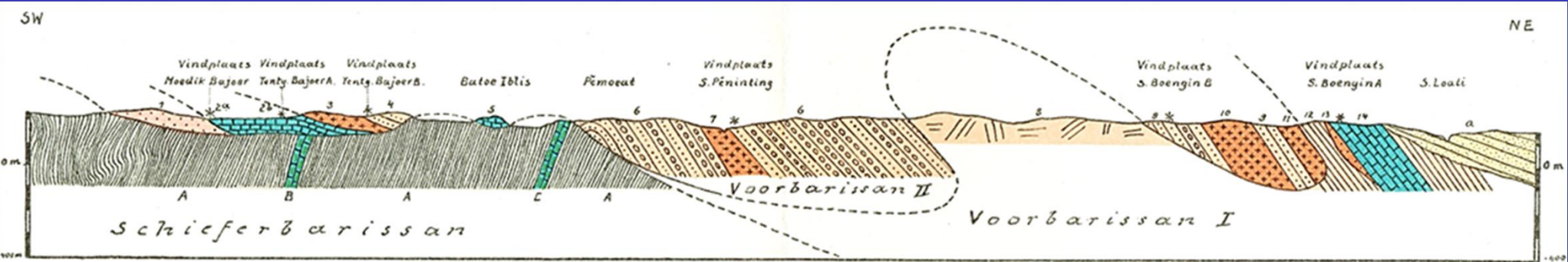
Nach den Beiträgen von J. BONHÖTE und PL. DUBOURCQ und eigenen  
Aufnahmen zusammengestellt  
von  
Aug. Tobler

Maasstab für Karte und Profile

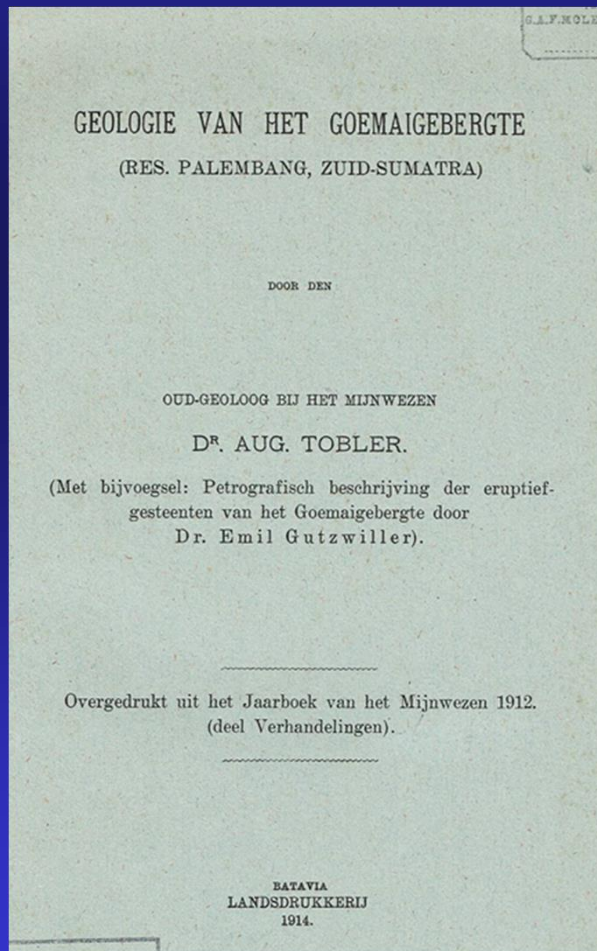
1:25000



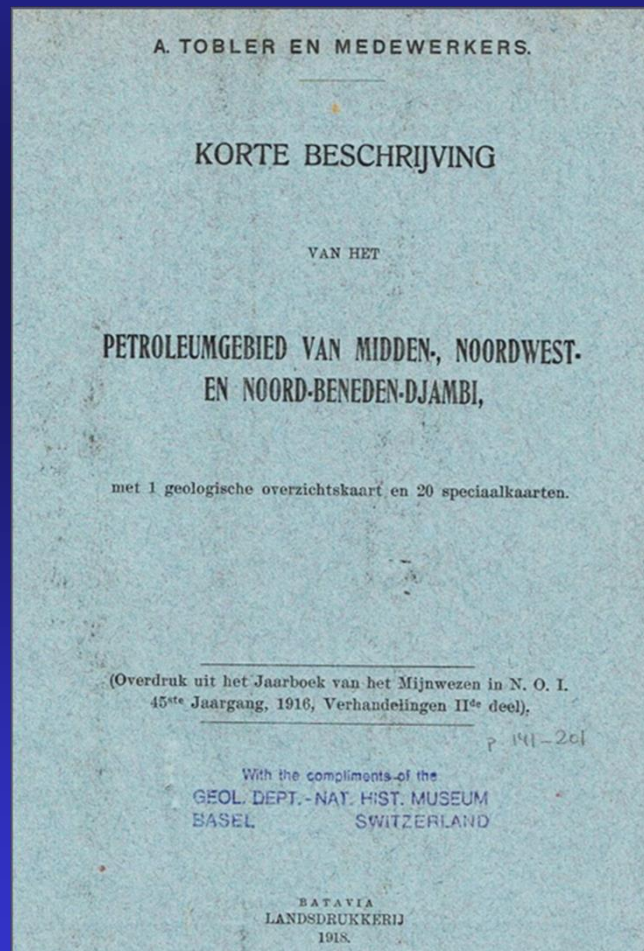
# Petroleum Geologists - A. Tobler



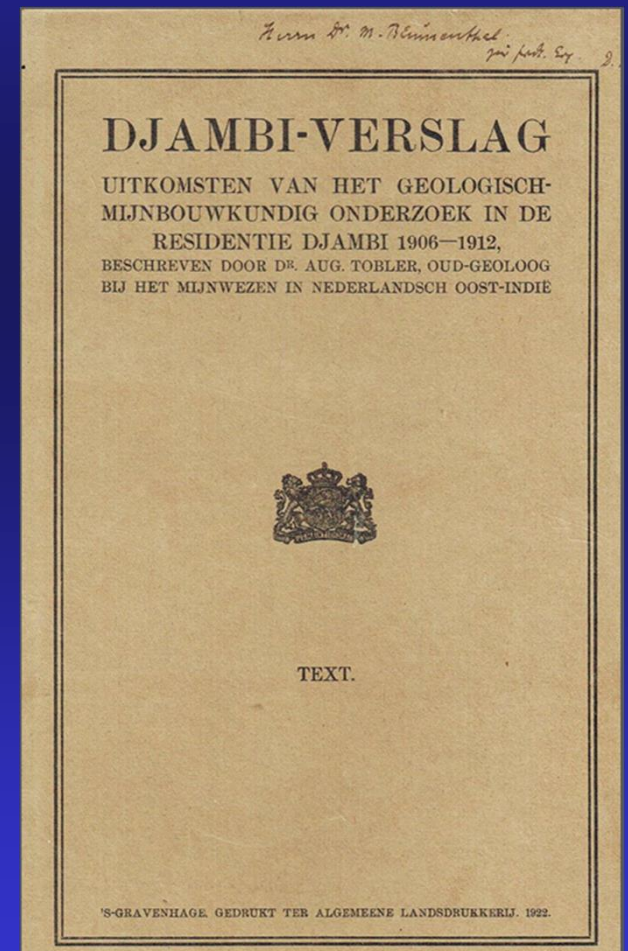
Tobler (1917) SW-NE cross-section, interpreted as nappe structure in the Jambi part of the Barisan Mountains



Tobler (1914)- Gumai Mts



Tobler (1918)- Petroleum areas Jambi



Tobler (1922)- Geology Barisan Range, Jambi

# Petroleum Geologists, ~1910-1930s

Pioneers and Milestones  
of Indonesian geology  
4. Petroleum and Mining Industries,  
Post-1945 Restart  
J.T. van Gorsel DRAFT

## SECOND GENERATION OF PETROLEUM FIELD GEOLOGISTS, 1910-1930s (BPM, NKPM)

- Hans CLOOS (1911-1913)
- Herman WITKAMP (1904-1921)
- Friedrich WEBER (1910-1930)
- Arnold HEIM (1911-1940)
- Willem Carel KLEIN (1913-1919)
- Lajos VON LOCZY (1922-1928)
- Ernst KUNDIG (1927-1931)

Petroleum geology before seismic:  
Digging trenches in areas of poor  
outcrops to map anticlinal structures

ONZE KOLONIALE MIJNBOW.  
POPULAIRE HANDBOEKJES OVER NEDERL.-INDISCHE MIJN-  
BOUW-PRODUCTEN, ONDER REDACTIE VAN DR. J. DEKKER.

### II DE PETROLEUM

DOOR  
H. WITKAMP,  
MIJNINGENIEUR.

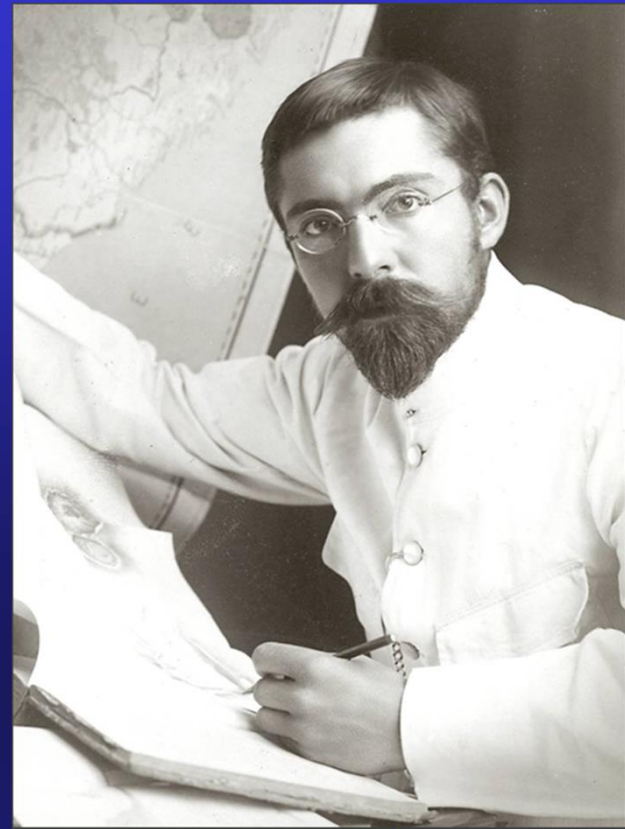


HAARLEM  
H. D. TJEENK WILLINK & ZOON  
1917



## **Petroleum Geologists- Arnold Heim**

**Arnold Heim, Swiss BPM geologist and photographer**



**Heim in BPM office,  
Sumatra, 1911**



**North Sumatra mapping 1928:  
Steeply dipping Pretertiary rocks, unconformably  
overlain by flat-lying Eocene sandstones**



**BPM drilling rig at Sungei Bakul, South Sumatra**

# Petroleum Fields

EARLY OIL FIELDS

BPM Pangkalan Soesoe oil field in North Sumatra,





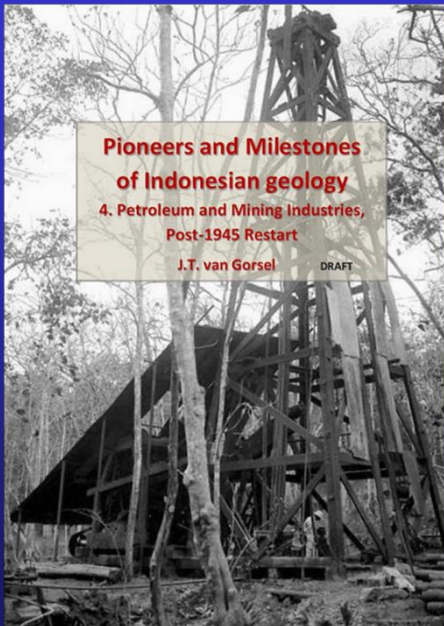
# ***Petroleum Fields***

## ***EARLY OIL FIELDS***



***Concession Louise (Sanga-Sanga field), early 1900s***

# ***MINING***



**Pioneers and Milestones  
of Indonesian geology**

4. Petroleum and Mining Industries,  
Post-1945 Restart

J.T. van Gorsel DRAFT

## **MINERS, PROSPECTORS AND GEOLOGISTS**

**Tin:** John Francis LOUDON  
C.H.J. WILHELM

**Gold:** Johann Wilhelm VOGEL  
Reinier Dirk VERBEEK  
Samuel John TRUSCOTT  
Petrus Joannes JANSEN  
C.E.G.H.M.Ludwig HUNDESHAGEN  
Hendrik TERPSTRA  
Hermann SIBER

**Coal:** W.H. DE GREVE Sr  
James MOTLEY  
K.G.J. ZIEGLER  
Cornelis H. VAN RAALTEN

**Redjang Lebong gold mine,  
West Sumatra, ~1910**



# Pioneers- Vol. 4: Post- World War II Academic (re-)start

## POST -WORLD WAR II ACADEMIC (RE-) START

Staff and the first Indonesian students of the new Geology Department of THB/  
ITB, Bandung after the Japanese occupation and Indonesian Independence

M. Eugene AKKERSDIJK

Theo H.F. KLOMPE

Pieter MARKS

Dirk DE WAARD

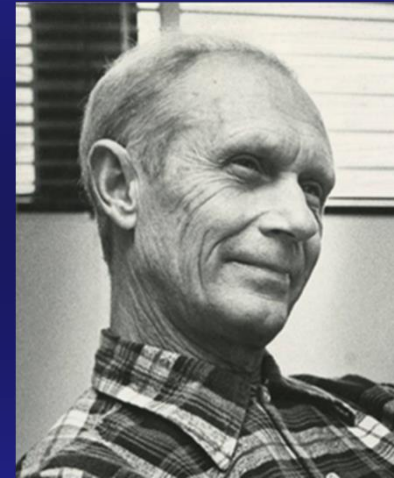
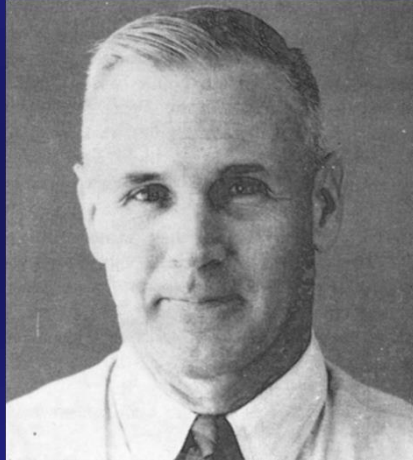
Rudolf A.J. OSBERGER

Soetaryo SIGIT

Jon A. KATILI

H.D. TJIA

S. SARTONO



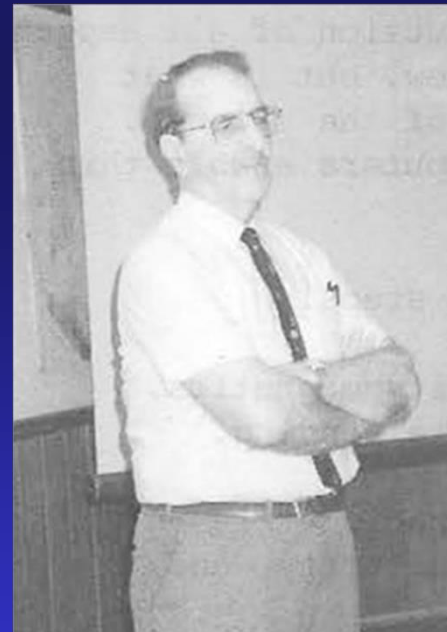
**PIONEERS OF PLATE TECTONICS - INDONESIA/ SE ASIA  
(1960s-1970s)**

**John A. Katili**

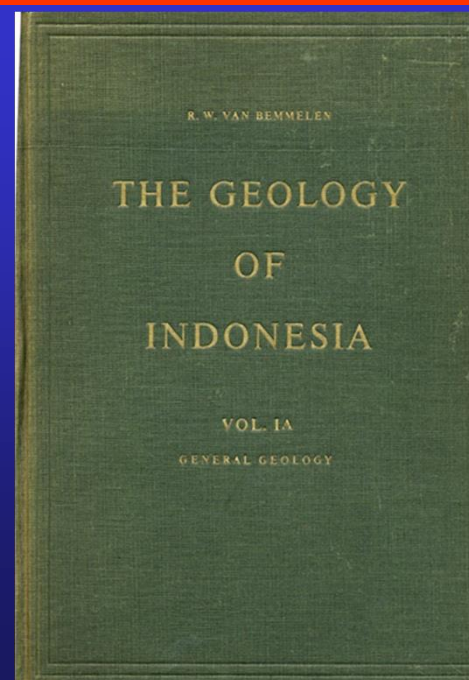
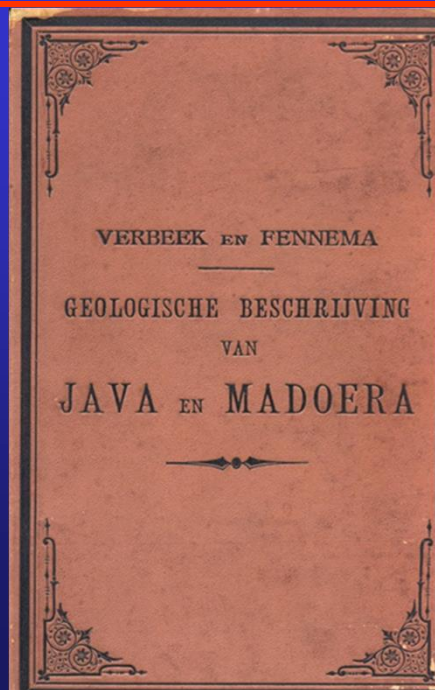
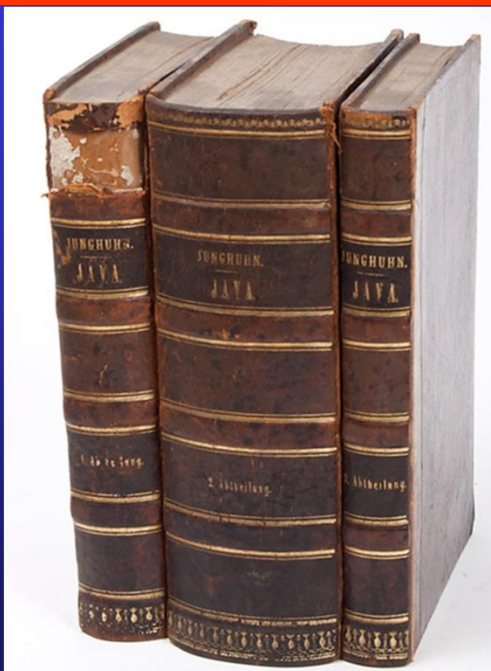
**Warren M. HAMILTON**

**Neville S. HAILE**

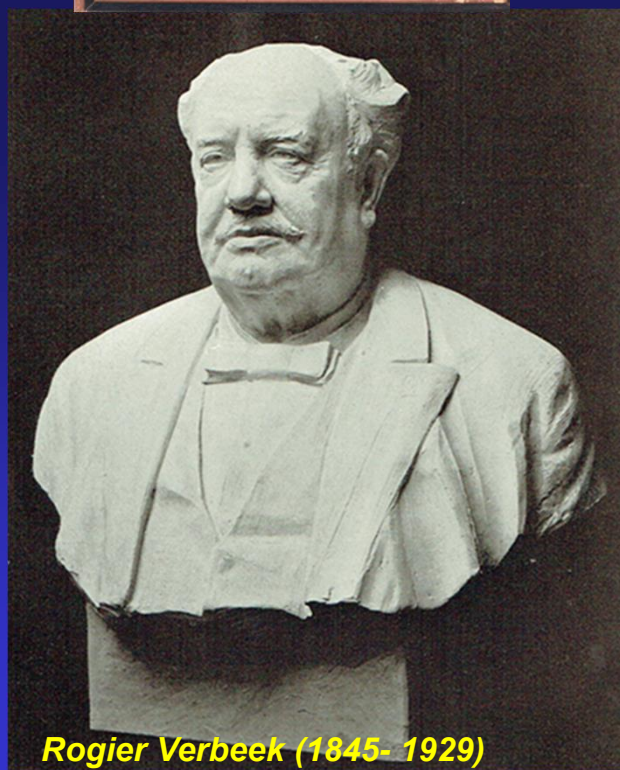
**Charles S. HUTCHISON**



# "WE CAN SEE FURTHER WHEN WE ARE STANDING ON STRONG SHOULDERS!"



**Franz Junghuhn (1809-1864)**



**Rogier Verbeek (1845- 1929)**



**Rein van Bemmelen (1904- 1983)**



***For Feedback and Comments e email :  
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***Also please visit: [www.vangorselslist](http://www.vangorselslist)***

***Snow-covered Wilhelmina Peak (Puncak Trikora) (Hubrecht, New Guinea Expedition, 1913)***