

# Nicolas Boutakoff and Australia's North-West Shelf

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## Slide 1. INTRO

- This paper is the result of a collaboration between historian Yolande Collins, who was Boutakoff's goddaughter, geology consultant and journalist Peter Purcell, and myself. I am a post-graduate student in history at Melbourne University. A similar paper was presented by Peter to the American Association of Petroleum Geologists last month in Cartagena, Colombia, and today's slides are from that presentation. Peter lives in WA and cannot be here today.
- I shall present a chronological overview of the life of Nicolas Boutakoff, but I would like to briefly allude to the episode in his life for which he will be best remembered:
- Nicolas Boutakoff was a geologist with experience in France, Africa and the West Indies before he reached Australia and he was fluent in several languages. He was a successful geologist, but he sought greater recognition for his abilities. Some of his hopes were almost fulfilled when he visited the West Australian Rough Range oil discovery site in 1954: he imagined then and there the vast oilfield the North-West Shelf would prove to be—a dreaming that would bring great success to Woodside and bitter disappointment to himself.

## Slide 2. Louvain Doctorate 1929

- Nicolas Boutakoff was born in Washington DC in November 1903, the son of Alexander Boutakoff, the Russian Naval Attaché to the United States. The Boutakoffs were Russian aristocrats of high military rank.
- Nothing is known of Boutakoff's life before the family moved to Switzerland in 1914 for health reasons, leaving his father in command of the Kronstadt naval base. He was executed by the Bolsheviks on 1 March 1917 and died loyal to the Czar when he refused to recognize the revolutionaries.
- The family moved to Cannes, on the French Riviera, then a gathering place for the exiled Russian aristocracy. He received his secondary education there, before obtaining an American scholarship to study at the Catholic University of Leuven (Louvain) in Belgium.
- Boutakoff graduated with Honours in Geology, and earned a DSc in 1929 for work on a section of the French Alps. His thesis reveals his skill at geological mapping and his flair for illustrating complex geological structures. It also shows him to be firmly on the side of the 'fixists' in ignoring the newly-raging debate over Alfred Wegener's concept of continental drift.
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## Slide 3 Kivu: Karoo discoveries and geological map

- In 1929 Boutakoff joined a geological expedition to the Belgian Congo to map the area west of lakes Tanganyika and Kivu. His letters home to his mother provide vivid descriptions of his adventures and emotions, and his dreams of geological fame.
- His first reaction to Africa was typical in its European romanticism. 'This is not a voyage but a fairytale', he wrote. He likened Bukavu on Lake Kivu to the French Riviera.

- Barely 26 years old and often the only European in the mountains for weeks at a time, Boutakoff mapped the geology of about 30,000 km<sup>2</sup> on the western side of the Kivu Rift. He discovered vast new exposures of Karoo glacials, including fossiliferous beds (one of which was named for him), which established the local stratigraphy and the correlation with the South African Karoo. His excited letters speak, only half in jest, of the 'early and well deserved worldwide fame' he expected.
- Boutakoff returned to Europe in 1932, and he and Irene Sergueieff were married in Cannes that year. He taught paleontology at Leuven and began to compile the expedition reports. It did not go smoothly or quickly. Publication was delayed for years; because in 1935 he and Irene returned to Kivu to further explore the region and communication with the university was slow.

#### **Slide 4. In love in Africa 1935-6**

- Boutakoff made detailed studies of the Karoo glacials and Irene studied Paleolithic sites they found along the Ruzizi River south of Lake Kivu. She wrote a preliminary paper for the Royal Museum of the Belgian Congo, but the detailed report to accompany the 7,000 artifacts that they collected never eventuated. As a non-Catholic, Boutakoff could not be appointed to the staff of Leuven University, so he had to find a job.

#### **Slide 5 Trinidad 1937-48**

- In 1937 Boutakoff went to the West Indies with Kern Trinidad Oilfields Ltd. He spent the early years surface mapping in key basin areas. He stayed in Trinidad 12 years, becoming Chief Geologist in 1944, supervising drilling operations and working closely with the pioneering seismic surveying teams. Hans Kugler, the 'father of Trinidad geology' was one of his referees. He became a lifelong friend of Shell geologist Gerard Terpstra and the godfather of his daughter, Yolande.
- Irene met Leonard Charles van Dongen, a Dutch engineer working in Trinidad, whom she married after divorcing Boutakoff in 1944. Boutkoff was devastated by the loss of his wife.

#### **Slide 6. Great Circle Strain Pattern**

- Around this time Boutakoff resumed work on his global tectonic concepts, using new bathymetric maps to plot the major Earth lineaments. He believed that the pattern of lineaments was proof of strain in the Earth's crust caused as it had contracted and expanded. He believed he had made a major discovery, but inherent to these beliefs was a rejection of continental drift.

#### **Slide 7. Australia**

- In 1948, he became a British citizen and moved to Australia to join the Victorian Geological Survey. It was a move that had life-changing consequences. After his years in Europe, Africa, and Trinidad, post-war Melbourne was a bit of a shock.
- At the Survey, he worked on geological mapping of the Portland district, a sedimentary basin in south-west Victoria. He authored the report on this major piece of work, but it was not published until 1964, two years after he had left the Survey. Another task was assessing the petroleum potential of Victoria, and he published several important papers.
- The Director of the Survey was David Thomas, a hard-drinking Welshman and hard rock geologist, and what might have had its origins in differing opinions hardened into devastating antagonism: It was described by colleagues as a poisonous atmosphere. Thomas did not believe there was any oil in Victoria, so Boutakoff's position as the oil specialist must have been tenuous. What is perhaps surprising is that he did not find any recognition within the

Melbourne geological fraternity, which might have been expected to be supportive of a skilled and experienced migrant. However, this was the era when 'New Australians' were expected to assimilate as quickly as possible and difference was treated with suspicion and hostility. Why Boutakoff remained there requires explanation.

- His personal life was far happier. In 1950 he married Russian-born Latvian Irina (Irene) Tilts. Irene was a strong, patient and good-natured woman, and the marriage was a happy one. Boutakoff also had good friends in the Russian community, notably Vladimir Mihailov (Michels), Chief Designing Engineer with the State Rivers and Water Supply Commission and university lecturer Olga Oleinikov.
- Speaking to those who knew him through his years at the Geological Survey, one sees two very different sides of the man in different cultural mirrors. Colleagues at work described him as aloof and aristocratic, but he received their respect for his abilities. It is tempting to view any aristocratic tendencies as a reflection of his up-bringing and a sense of entitlement from birth. However, Anglo-Celtic Australians, then as now, do not view these qualities favorably. To his friends, he was the soul of warmth and consideration, generous of spirit, and a witty conversationalist.

#### **Slide 8. Deformed sphere experiments 'confirm' global tectonic model**

- During 1950-2, he rewrote his treatise, now called *The Pattern of Earth Failure*, and conducted experiments deforming model spheres with plastic cores and various coatings to simulate the Earth's crust. Boutakoff believed the fracture patterns that formed on the spheres simulated the lineaments observed on the Earth. He submitted his manuscript to the Geological Society of America (to which he had been elected a Fellow) but his response to the required changes was ambiguous and it was never published. He continued to refine his treatise until shortly before his death, long after plate tectonics had swept the field.

#### **Slide 9 Boutakoff's North-West Shelf bathymetric contour map**

- The discovery of oil at Rough Range in Western Australia in 1953 changed Boutakoff's life. He was sent there to see what lessons might apply to Victorian exploration. He visited Cape Range anticline, a peninsula jutting 80 km into the Indian Ocean, and explained that Barrow Island, beyond the horizon, was another major anticline. As they stood there looking north, Boutakoff saw the possibility that similar structures, potentially oil-bearing, could extend all the way to Timor, and be revealed on the ocean floor by topographic highs
- The official lesson was simple, he reported: the success of the joint venture was the result of the methodical and informed exploration. Victorian explorers had to follow that example. The personal lesson was even clearer: the offshore North West Shelf would likely prove a vast oil province, and he wanted a share of it.
- Back in Melbourne, he purchased copies of an Admiralty Chart *North West Coast of Australia* and began contouring the bathymetric values.
- What emerged was a series of mostly submerged ridges and troughs, trending NE/SW along the edge of the Australian continental margin. The main ridge system could be traced from Cape Range, where he had first stood, to Barrow Island and Rowley Shoals. Scott Reef, Ashmore Reef and Sahul Bank. Boutakoff interpreted the ridges as large geanticlinal folds and proposed that their location between the complexly structured Island of Timor, where oil seeps were known, and the gently folded sediments onshore Australia, where oil was now proven, made them, as he put it, ideally 'suitable for considerable accumulation of petroleum'.

### **Slide 10. The Woodside application map and permit 1962-3**

- On 1 March 1955, in partnership with Thomas Ward, a successful New York oilman and a close friend from Trinidad days, and several others, including PD McKenzie, former chairman of Woodside (Lakes Entrance), Boutakoff formed a company called Northern Holdings Pty Ltd to acquire exploration leases over these areas. To hide his involvement, because he was still employed at the Survey, the company was set up through a Melbourne accounting firm. Ward's task was to sell the project to Gulf Oil, as he had done previously with leases in Kuwait.
- The applications to the Western Australian and Northern Territory authorities were made in May 1955. The West Australians immediately asked for clarification of the 'internal set-up, particularly the American side, and the capital' of the company. And that was the end of that. To reveal the set-up would expose Boutakoff's involvement. To reveal their finances could only show they had none. The application was abandoned and the company wound up in 1958.
- By then Boutakoff had become interested in the potential for an elaborate mining and industrial development based on brown coal and limestone deposits in coastal Victoria at Gelliondale. That project also failed to find the large industrial interest that he hoped for.
- It has been suggested by a geologist who knew him that Boutakoff lacked the business acumen to succeed with these ventures. He was a man of science somewhat out of his depth in the cut and thrust of the business world.

### **Slide 11 Woodside management 1963**

- In July 1962 Boutakoff resigned from the Survey and became Chief Geologist at Woodside (Lakes Entrance) a small Victorian exploration company then wanting to find payable leases. His job was to study potential offshore areas and select the most promising. He confided in General Manager Rees Withers about his past work on the North West Shelf and believed they had made a gentleman's agreement that, in exchange for his ideas and maps, Woodside would give him a million shares, provided they got the lease and farmed it out. Two months later, Woodside filed an application over the vast offshore area (367,000 km<sup>2</sup>) now known as the Northern Carnarvon and Browse basins. It was for the same area Boutakoff had applied for in 1955, and used the same Northern Holdings map.
- His presentation to the 1963 APEA conference in Brisbane put the North West Shelf on the oilman's map. In the audience were representatives of Burmah Oil and Shell, both of whom expressed interest. He and Withers travelled to Europe and met with Burmah and Shell senior management and, by October 1963, both companies had signed. Burmah became the new operator.
- For Boutakoff, the euphoria was short-lived. His request for his share bonus was flatly rejected. Withers denied any deal. Geoff Donaldson, Woodside's Chairman, insisted that Boutakoff had been instructed to study the area, did so as an employee, and was therefore not entitled to anything.

### **Slide 12 Timor Oil consulting**

- Boutakoff severed his connection with Woodside and spent several years consulting for Timor Oil. He was bitter about Woodside but seemed happy enough otherwise.
- It was only in 1972, after Woodside's major gas discoveries, and the high share price that would have made him a rich man, that his sense of betrayal by Woodside, particularly Rees Withers, became all-consuming. He prepared a detailed dossier outlining his claim, including

all relevant correspondence, and submitted it to the Burmah and Shell boards. To no avail: his compromise proposal for an ex gratia payment of \$200,000 was also rejected.

- The pursuit of this reward, as he saw it, became quite obsessive. Everyone he knew that had been connected with the project was drawn into his quest. But they could only confirm his involvement, not his entitlement to the reward. There was nothing to be done, of course, a point former Shell Manager Jacques Dozy made to him: 'A written statement is lacking. No amount of tears from well-wishing people like myself can remedy that omission'.
- In retirement, he devoted five of his final years to compiling a lengthy report on the Shroud of Turin for the beleaguered members of the Russian Orthodox Church in Russia. It was an occupation for his 'ever-questing brain'.
- His wife died from cancer in 1976, aged 54. The loss was devastating for Boutakoff, who died a year later, and was buried beside her in Templestowe Cemetery, Melbourne.
- Of course, he was wrong about the North-West Shelf structure. There wasn't a series of compressional folds: they were horst blocks along the rifted continental margin. But he was right about the petroleum potential: the North-West Shelf has enormous reserves.
- Nicolas Boutakoff was a complex man shaped by his experiences here and in the other countries where he lived. We hope this short work will contribute to a wider appreciation of his life and pioneering role on Australia's North West Shelf, now one of the world's main hydrocarbon producing regions.