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A History of Early Antarctic Fossil Discoveries in Support of the Supercontinent Gondwana

Clary, R.M.¹, and Sharpe, T.²

¹Mississippi State University, Box 5448, Mississippi State, MS 39762 USA; rclary@geosci.msstate.edu

²Centre for Lifelong Learning, Cardiff University, UK

First proposed by Eduard Suess (1831-1914), the supercontinent Gondwana included the present-day continents of South America, Africa, Australia, India, and *Antarctica*. Alexander Du Toit (1878-1948) expanded Suess' work in his 1937 book, *Our Wandering Continents; An Hypothesis of Continental Drifting*. Correlating evidence to support the inclusion of Antarctica in the Gondwana supercontinent would result from the stratigraphic and paleontological data collected within early polar expeditions.

Early rock and fossil specimens of Antarctica were recovered by the 1829-1831 Antarctic Expedition sponsored by the United States of America. The expedition included a scientific program, supported by the Lyceum for Natural History of the City of New York. James Eights (1798-1882) produced quality scientific work, including a geological description of the Shetland Islands, and the first fossil of the Antarctic—carbonized wood [1, 2]. The Norwegian expedition of 1893-1894, under Carl Anton Larsen (1860-1924), also found petrified wood fossils on Seymour Island. The wood hinted of a warmer climate in Antarctica's past, and sparked scientific interest [3].

Within the Heroic Age of Antarctic Exploration (1897-1922), additional fossils were uncovered. Cretaceous ammonites, molluscs, echinoderms and leaves were collected on Seymour Island, and additional plant fossils at Hope Bay, by geologist Nils Otto Gustaf Nordenskjöld (1869-1928) during the Swedish South Polar Expedition of 1901-1904. Ernest Henry Shackleton's (1874-1922) British Antarctic Expedition 1907-1908 also would contribute additional geological and palaeontological evidence from the frozen southern continent: Frank Wild (1873-1939) uncovered an archaeocyathid in an erratic, and fossil wood and coal seams near Beardmore Glacier [4, 5].

However, the most significant fossil evidence would result from Robert Falcon Scott's tragic British Antarctic Expedition of 1910-1913. The expedition's geological parties investigated and collected rock and fossil specimens, including fossil fish from the Beacon Sandstone [6]. Undoubtedly, the most valuable fossil evidence would come from the doomed polar party. When the search party found Scott's tent 8 months after the team perished on their return trip from the South Pole, they recovered about 16 kg (35 lbs) of geologic specimens. Although the polar team perished 18 km (11 miles) from their supply depot, the geological specimens were considered valuable enough to be hauled to the very end. In addition to coal samples, the specimens contained the first specimens of *Glossopteris*, which would be used by Alfred Wegener (1880-1930) for the reconstruction of Gondwana and the theory of continental drift. Ironically, Wegener lectured on continental drift to the Frankfurt Geological Society as Scott approached the South Pole.

References:

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