

Sprigg, Glaessner and Wade and the discovery and international recognition of the Ediacaran fauna

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Sprigg and the Ediacara fauna discovery

The first Precambrian fossils in Australia upon which the Ediacaran biota was recognized were found in the Ediacara Hills, Flinders Ranges, South Australia in 1946 by former geology student of the University of Adelaide, Reg C. Sprigg (1919 -1994). Sprigg's mentor, Professor Sir Douglas Mawson, had dampened his enthusiasm over an earlier find because of the perceived difficulties in accepting evidence for Precambrian fossils based on the discredited Tea Tree Gully work of Edgeworth David (Branagan

2005, Sprigg 1989, p.). This meant that Sprigg's original age assessment verged on the cautious side. In giving the first descriptions of many Ediacara fossils - his Early Cambrian ["Eocambrian"] jellyfishes', including the iconic *Dickinsonia*, Sprigg (1947, 1949, 1956) chose only local and informal publication. He did acknowledge "advice" from Curt Teichert. The importance and full significance of the fauna was not fully realized internationally, however, until the pivotal series of papers by Professor Martin F. Glaessner (1906-1989, *e.g.*, Cloud, 1990; McGowran 1994) and his students, notably Mary J. Wade (1932-2005; Turner 2005), and colleagues such as Preston Cloud.

. Sprigg himself had introduced Glaessner to the material at the Perth ANZAAS Conference in 1947 and had donated most of his finds to the Geology Department in Adelaide, including the iconic type specimen of *Mawsonites* that was actually collected by Sprigg's business partner Dennis Walter. Glaessner and Wade became directly involved in the late 1950s with another student Brian Daily (1931-1986, Jago & Pledge 1987) after further finds were made by amateurs Hans Mincham and Ben Flounders with subsequent South Australian Museum and University of Adelaide mounted expeditions (Glaessner, 1959, 1961, 1979, 1981, 1984). Glaessner with Daily verified the Precambrian age for the Ediacara horizons. Glaessner's reputation, and his European-trained background, with long experience of invertebrate palaeontology, seemed to ensure that his espousal of the Precambrian fauna was accepted. Glaessner chose internationally recognised American and European journals to publicise the fossils (*e.g.* *Scientific American*, *Palaeontology*, *Geologische Rundschau*). This strategy put the fauna onto the international stage. Sprigg's contribution was 'rewarded' with various named

taxa, *e.g.*, *Spriggina*. Despite Sprigg's early efforts, in most people's minds the words 'Ediacaran' and Glaessner & Wade became synonymous.

Wade, one of the few post-war women palaeontology students, had chosen to enrol in the department headed by Sir Douglas Mawson at the University of Adelaide in 1947. She took to Geology with gusto and majored in geology and zoology, gaining a demonstratorship, she took six years (1954-1959) to complete her Ph.D. on Tertiary forams, supervised by Glaessner (Turner 1997, 1998); she then joined him in describing Ediacaran fossils. Wade wrote two major papers with Glaessner and at least seven single-authored works (see Glaessner 1984; Wade, 1968, 1969, 1970, amongst others), which culminated in her contribution on the Scyphozoa to the *Traité de Zoologie*. (Wade, 1997)

Sprigg, however, was not involved in this phase of the research, which was a source of regret for him (Sprigg 1989), but his career took a different turn as he continued with the Geological Survey in its search for uranium as part of Cold War paranoia and then later as he set up companies, GeoSurveys and Santos, and finally 'Arkaroola' in the Flinders Ranges as a geological and faunal reserve. As his notes of 29/1/47 state, he was practical about just what one could do in a day: "A man that cometh to a cross roads must turn his back upon the one way to follow the other" (a quote from *The King's Henchmen*). Sprigg, however, being the ever-pragmatic individual, noted (1989) that despite initial doubt being cast on his interpretations of the Ediacaran fauna and its Precambrian age, its preservation and life environment (Wade, 1969; Seilacher, 1984, Runnegar, 1992), his finds were "epochal."

Glaessner did not publish his final seminal work *The Dawn of Animal Life* until his last decade and Wade was due to assist with a revised second edition before he died.

However, neither **he** nor Wade **were to work further** despite remaining staunch advocates of the Ediacarans all belonging to groups with living relatives – jellyfish, annelid worms, arthropods, etc., **contrary to** the **changes** in thinking about the phylogenetic and ecological significance of the biota that appeared in the 1980's and beyond (*e.g.*, the 'Vendobiota' of Seilacher, 1983), **which became the province of other workers.**

Family, friends and colleagues of Sprigg, Glaessner and Wade are thanked for their help and candid discussions, especially Doug and Marg Sprigg, Dennis Walter, Larry Harrington, Hans Mincham and Richard Jenkins, and especially the late Mary Wade, who has always given us inspiration with her story. The thoughts expressed here are, however, our own. Funding from the Australian IGCP Committee Grant-in-Aid Scheme, which enabled participation of ST in the IGCP 493 Prato meeting, is acknowledged as well as funds from ARC Discovery grant no. DP0453155 to PV-R and ST.

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