

A biographical sketch of Seward R. (Ted) Brown

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On July 7, 1985 over 300 people gathered at the Lake Opinicon Field Station of Queen's University to dedicate a new building. The opening of this modern laboratory facility was in honour of the retirement of Prof. Ted Brown – a fitting tribute to a man who had dedicated much of his life to research and teaching.

Prof. Brown's affiliation with Queen's University has been a long one. After having been born and raised in Nova Scotia, and following five years of decorated service in the Canadian Armed Forces, Ted Brown came to the Queen's Biology Department for his undergraduate training. He received his Bachelor of Arts in 1951 and, shortly thereafter, he completed his Master's research at Lake Opinicon on littoral zone production (Brown, 1952). He then returned to his secondary school, the prestigious Pictou Academy in Nova Scotia, as a high school teacher. Nonetheless, his interest in limnology had been kindled, and during his summers he would return to Kingston to work as a research assistant with the new limnology professor at Queen's – Dr. Jack Vallentyne.

In the early 1950's, Dr. Vallentyne was starting work on sediment cores from the small, meromictic Little Round Lake. His main interests were amino acids in lake sediments, but he was also finding the degradation products of what were believed to be photosynthetic pigments. It was these 'biochemical fossils' that would be the focus of Ted Brown's scientific career. In 1954 he was accepted to work towards a doctorate with Prof. G. E. Hutchinson at Yale University on the sedimentary chlorophylls of Little Round Lake.

It was during the Yale years (1954–1959) that Ted Brown did his original work on the algal and bac-

terial chlorophylls and their derivatives in Little Round Lake. The identification of the chlorophyll derivatives was the first challenge, and in many cases this was accomplished by comparison with experimentally produced derivatives. In order to quantify these results, extinction coefficients had to be determined from ^{14}C labelled chlorophylls and a series of derivatives. Previously, only six extinction coefficients were known. This clearly required an integrated approach. In realistic terms this meant that he received degrees in both the chemical and biological sciences (Brown, 1962). The Yale years were not spent working entirely on sedimentary pigments. Ted found time to collaborate on studies of mammalian skin pigments (Foster & Brown, 1957), as well as on the construction of a new piston corer that was specially designed for the collection of surficial lake sediments (Brown, 1956). His skills as a teacher continued to be used as a lecturer in zoology in the newly developed Master of Arts and Teaching Program.

Ted Brown's days at Yale were coming to an end. Back in Canada, Jack Vallentyne was leaving Queen's and in 1959 Ted was offered his position. In addition, he was given the responsibility of Director at the Queen's University Biology Station at Lake Opinicon. He would continue to be Director until 1972, a period of marked expansion for both Queen's and the Station. Despite these commitments, Ted continued his university teaching and research.

Chlorophylls and their diagenesis (e.g. Millson *et al.*, 1965; Brown, 1968a; Daley, 1973; Daley *et al.*, 1973a, b; Daley & Brown, 1973a, b) continued to be the main research focus in the Brown lab, and the pioneering work that he and his students did soon



Fig. 1. Prof. S. R. Brown assembling the Brown Corner at Little Round Lake, Ontario.

led to paleolimnological applications (e.g. Brown, 1969; Gray, 1974; Brown *et al.*, 1977; Daley *et al.*, 1977). In the early 1960's the specificity of many carotenoids was being established, and the study of their diagenesis was also underway (Beaulieu, 1969; Leavitt, 1985). Soon both bacterial (Brown, 1968) and algal (Brown & Colman, 1973) carotenoids were added to the suite of indicators that paleolimnologists could use to trace the history of organisms that did not leave morphological fossils. The full application of these holistic studies is only now being realized (McIntosh, 1983; Brown *et al.*, 1984; and many papers in preparation).

Biochemical paleolimnology was always a central theme in the Brown lab. Nonetheless, Ted realized that fossil pigments were only one aspect of our understanding of lake dynamics. He encouraged students to explore diverse areas. For example, it was under Ted's tutelage that Tippett (1963) completed his now classic study on the annual nature of varved sediments. Always realizing that one could never divorce a lake's present from its

past, he supervised a wide array of projects encompassing both chemical (McNeely, 1973) and biological (e.g. Lewis, 1965; Daley, 1968; Daley *et al.*, 1973c; Munro, 1978; Jones, 1981; Rosemarin, 1982; Craig, 1983) facets of lakes. Moreover, he continued to foster the integrated use of many lines of evidence in interpreting lake histories (Smol, 1982; Smol *et al.*, 1983, 1984; Boucherle *et al.*, 1986).

Prof. Brown is retiring from teaching this year, but his research and writing will continue. Just as it was appropriate to dedicate a new laboratory to him, it is equally appropriate that this Symposium honours his pioneering and influential work in paleolimnology.

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