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**Bibliography and Index
of Paleozoic Crinoids
1986-1990**

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INTRODUCTION

The purpose of this volume is to list all systematically treated or illustrated Paleozoic Crinoidea for the years 1986 through 1990. Initially it was planned to include the Coronate Echinoderms; however none were illustrated or systematically treated during the 1986 through 1990 interval. Although I do not agree with the identification of many of the species or genera as indexed, I am not attempting to reassign them. I leave that up to later workers who are systematically treating the species involved. I hope that this compilation facilitates their work as it does my own.

This volume continues and updates *Memoir 137, Bibliography and Index of Paleozoic Crinoids 1942-1968* (Webster, 1973), Microform Publication 8 *Bibliography and Index of Paleozoic Crinoids 1969-1973* (Webster, 1977), Microform Publication 16 *Bibliography and Index of Paleozoic Crinoids 1974-1980* (Webster, 1986) and Microform Publication 18 *Bibliography and Index of Paleozoic Crinoids and Coronate Echinoderms 1981-1985* (Webster, 1988). In addition to papers published from 1986 through 1990, 13 papers (Aisenverg, *et al.*, 1983; Brower, 1985; Dickins, *et al.*, 1977; Gupta, 1981; Hashimoto, 1984; Hecker, 1983; Milicina, 1973; Minato and Minoura, 1977; Minato, *et al.*, 1979; Minato *et al.*, 1982; Paillard, 1985; Pitakpaivan *et al.*, 1969; and Sun and Szetu, 1947), overlooked or unavailable to me earlier, are indexed. Unfortunately efforts to complete the indexing and make it available within two or three years of the period covered in the title results in not obtaining copies of some of the papers published during the period covered. In particular, papers published in eastern Europe and Asia are not always cited promptly, if ever, in the citation service

publications. Thus they are overlooked until found in a reference or someone discovers them in their research and calls my attention to them

The bibliography cites 209 papers, articles, and monographs of which 176 are indexed. Non-indexed papers (33) are included because they have significant sections treating crinoids in some manner or the entire paper treats some aspect of the crinoids. They concern stratigraphic data (Gupta, 1981; Kues, 1986; Prokop, 1987; Jell, *et al.*, 1988; Donovan, 1988b; Ahluwalia, 1989; Donovan, 1989c; Sevastopulo *et al.*, 1989), systematic position of the crinoids (Malakhov, 1989; Solovjev, 1990), extinctions (Eckert, 1988a; Paul, 1988; Smith, 1988), evolution (Roux, 1987a, 1987b; Stukalina, 1987, 1988a), paleocommunities (Titus, 1986; Ausich and Meyer, 1990), paleoecology (Bottjer and Ausich, 1986), historical developments (Crossman and Woodson, 1989; Hecker, 1983), new localities (Chen, 1990), morphology (Donovan, 1988a; Schneider, 1988; Donovan, 1989b; Wiegmann and Sveshnikov, 1989), review articles (Stukalina, 1988b), and references cited in the introduction (Bassler and Moodey, 1943; Webster, 1973, 1977, 1986, 1988).

The average number of papers published during the 1986-1990 period is 38.9. This is a decrease from the 42.6 publications per year average for the period 1971-1985.

The format of the index part of this volume follows (Webster, 1988). This volume consists of two parts. Part I contains both identified and unidentified cups, crowns, and non-columnal parts of the Crinoidea. Part II lists identified and unidentified columnals assigned to the Crinoidea. In both parts type species are preceded by an asterisk (*). The appendix lists new genera introduced in the literature indexed; genera based on columnals are preceded by the symbol "ø".

Reported geologic epoch, or range to epoch, for each species follows European or other local terms, if the species is reported from outside North America, and follows United States terms for those recorded from North America. If the species is reported

from both Europe and North America, either the original report of epoch name or the latest author's terminology is followed, usually the latter. If no epoch name was given, but a formation is reported in the paper cited, I have followed the correlation charts of the Geological Society of America, the American Association of Petroleum Geologists, and state geological surveys, or other current stratigraphic studies for the United States.

The geologic range and geographic distribution of genera are based on all the species still recognized in the genus by tabulating Bassler and Moodey (1943), Webster (1973, 1977, 1986, and 1988), and this work by removing species assigned to other genera. The geologic age and geographic occurrence listed for species and unidentified specimens are those given by the author cited. For synonymy compilation of some species, reference must be made to Bassler and Moodey (1943), Webster (1973, 1977, 1986, 1988) and this volume.

Precise locality data for each species are not included in this volume. Locality data therefore must be obtained by reference to the papers cited. Locality data are given only for the state in the United States and for the province in Canada, Australia, and China. For Russia, India, and a few other countries, localities are listed by geologic region, province, or local geographic feature. Otherwise, only country names are given. All localities are reported as given by the author cited.

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