

ON A NEW SPECIES OF *HOEGISPORIS* COOKSON

by ISABEL C. COOKSON

ABSTRACT. A new species of the microspore genus *Hoegisporis* is described from Australian Cretaceous deposits and its stratigraphical significance considered.

WHEN the genus *Hoegisporis* was first established (Cookson 1961) a clear indication was given that, in all probability, two distinct forms were being included in the type species *H. lenticulifera* Cookson. Since that time more examples of both forms have been found with the result that it is now possible confidently to define a second species of *Hoegisporis* from Australian Cretaceous deposits. The erection of this new species, to be described below under the name *Hoegisporis uniforma*, necessitates the removal to it of the specimen figured earlier as a paratype of *H. lenticulifera* (Cookson 1961, pl. 76, fig. 4).

Genus HOEGISPORIS Cookson 1961

Hoegisporis uniforma sp. nov.

Plate 9, figs. 1-5, 7-9

Hoegisporis lenticulifera Cookson 1961, pl. 7, fig. 10, Nat. Mus. Victoria P20511.

Holotype. Plate 9, fig. 2, Univ. W.A. Geol. Dept. no. 51413.

Age and Occurrence. Western Australia (1) Perth Basin. (a) Gingin area. Probably Albian; Moora Bore between 86 and 170 ft., Regan's Ford on the Moore River, 'Wapets' seismic shot holes L 8 at 240 ft., L 9 at 306 ft., and M₂ at 55 ft. (b) Perth area. Probably Aptian; Rakich's Bore, Caversham at 350-55 ft., Attadale Bore at 619 ft. Probably Albian; West Guildford Bore at 300 ft., Rakich's Bore, Caversham between 120 and 150 ft., Power House Bore at 640 ft., Kenwick School Bore at 90 ft., Mt. Lyell Bore at 886 ft. (c) Fremantle area. Probably Albian, Jandakot Bore at 450 ft. (2) Carnarvon Basin. Probably Albian, Lower Gearle Siltstone, 'Wapets' Rough Range no. 1 Bore at 2,750 ft.

South Australia. Probably Aptian, 'Santos' Ltd'. Oodnadatta Bore between 1,032 and 1,052 ft.; probably Albian, Oodnadatta Bore at 327, 347, 387 ft.

Description. Microspore flattened, variously crumpled, outline of favourably preserved specimens approximately circular in polar view and frequently somewhat wavy. Exine about 1.5 μ thick, intectate, finely, densely, and uniformly pilate; pila about 0.9-1.2 μ long; equatorial thickenings 6-12 in number, their outlines circular in surface view.

Dimensions. Holotype—diameter 75 μ . Range—diameter 39-80 μ , equatorial exinous thickening c. 8-18 μ in surface view.

Comment. *H. uniforma* can be readily distinguished from *H. lenticulifera* by the constant and complete absence of the clavac which are invariably present, although in varying numbers, in *H. lenticulifera* (Pl. 9, fig. 6). In three examples of *H. uniforma* a large opening of irregular outline is present on one of the surfaces (Pl. 9, fig. 7). Whether this represents a natural opening or an artificial break is not known. Both species are of infrequent occurrence.

The stratigraphical distribution of the two species of *Hoegisporis* is of interest since there is evidence that the vertical distribution of both is distinctive and restricted. This is demonstrated by the occurrence of these species in (a) the Osborne Formation in the Perth and Fremantle areas and (b) equivalent Cretaceous beds in the Gingin area of the Perth Basin, Western Australia (McWhae *et al.* 1958, p. 116). In each area *H. uniforma* has been recovered only from the lower beds, probably of Aptian–Albian age, and *H. lenticulifera* from the upper portion of each sequence, the age of which approximates to Upper Albian–Cenomanian.

In addition both species are associated with certain types of Dinophyceae in all the deposits studied. *H. lenticulifera* is associated with one or more species of *Ascodinium* Cookson and Eisenack 1960, a genus which, on the present knowledge, appears to be restricted to Mid-Cretaceous deposits (Cookson and Hughes 1964). *H. uniforma*, in contrast, is associated with such Australian Lower Cretaceous types as *Hystriosphæridium arundum* Eisenack and Cookson 1960, *Apteodinium maculatum* Eisenack and Cookson 1960, *Pseudoceratium turneri* Cookson and Eisenack 1958 and occasionally (Oodnadatta Bore, S. A., between 1,032 and 1,052 ft.) *Dingodinium cerviculum* Cookson and Eisenack 1958.

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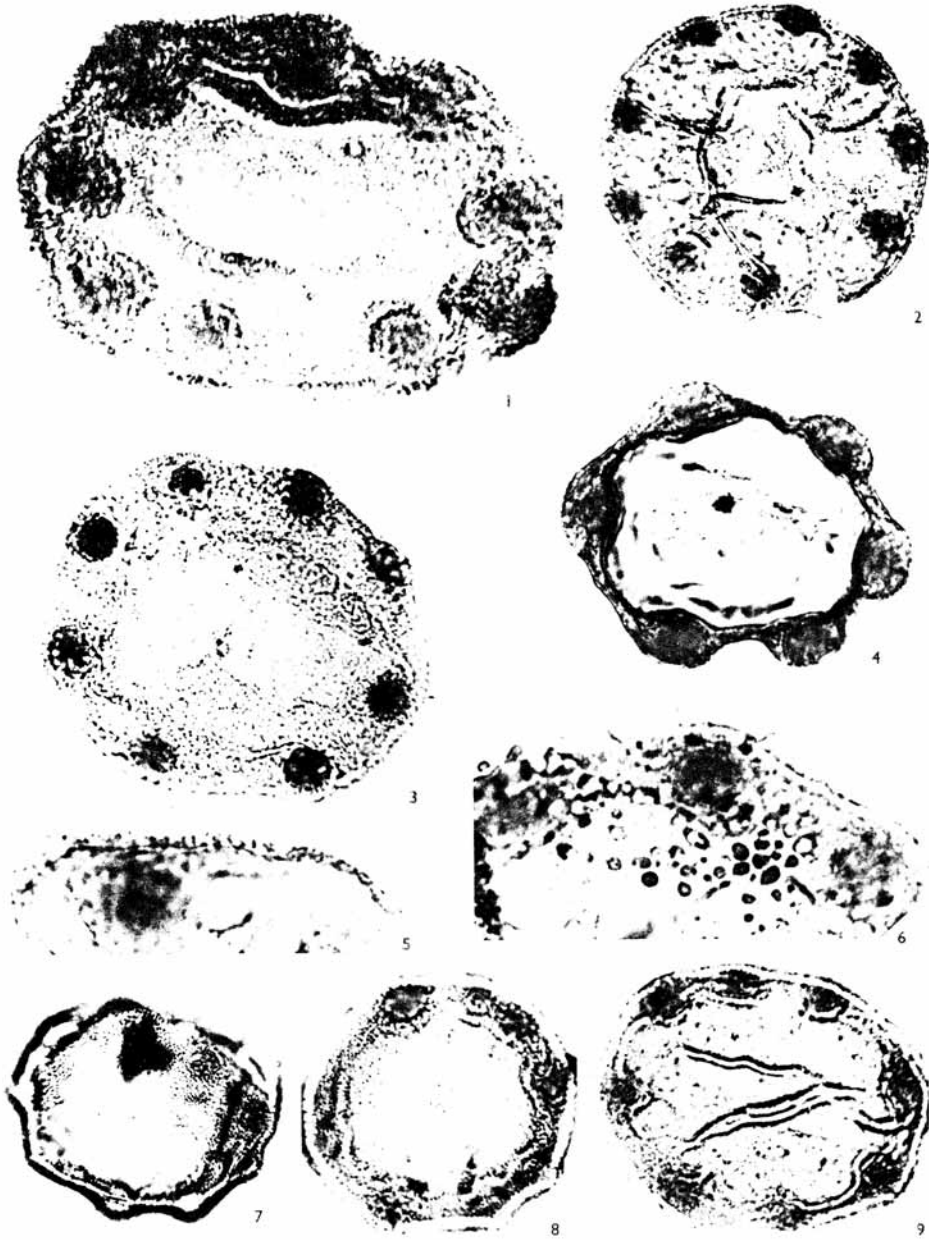
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ISABEL C. COOKSON
 Department of Botany,
 University of Melbourne,
 Australia

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EXPLANATION OF PLATE 9

The numbered specimens are housed in the Department of Geology, University of Western Australia. Figs. 1–5, 7–9. *Hoegisporis uniforma* sp. nov. 1, Power House Bore, W.A. at 640 ft., $\times c.$ 1000; no. 51412. 2, Holotype, Oodnadatta Bore, S.A. at 347 ft., $\times c.$ 690; no. 51413. 3, 4, 9, Jandakot Bore, W.A. at 450 ft., $\times c.$ 1000; nos. 51414–6. 5, 7, Moora Bore, W.A. between 86 and 100 ft. 5, details of exine, $\times c.$ 1350. 7, showing 'hole' on surface, $\times c.$ 730. 8, Regan's Ford, W.A. Seismic shot hole L 8 at 240 ft., $\times c.$ 1000.
 Fig. 6. *Hoegisporis lenticulifera* Cookson, Roberts Street Bore, near Perth, W.A.: portion of exine showing pila and clavae, $\times c.$ 1350; no. 51417.



COOKSON, Cretaceous microspores