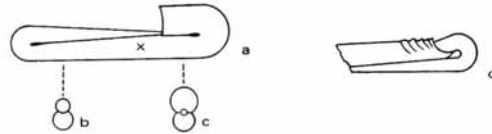


OCCURRENCE OF THE AMMONITE *PTYCHOCERAS*
ADPRESSUM (J. SOWERBY) IN THE UPPER
ALBIAN OF KENT, ENGLAND

by JULIAN D. HOLLIS

ABSTRACT. The small heteromorph ammonite *Ptychoceras adpressum* (J. Sowerby) is abundant at one horizon near the middle of the Varicosum Subzone (*Mortoniceras inflatum* Zone) in Kent. Previously it was only known in Britain from Folkestone, Kent. It also occurs less frequently low in the Varicosum Subzone. The species was probably adapted to a benthonic habitat.

THE rich and diverse Upper Albian ammonite fauna of Kent includes many strange heteromorph forms, including the peculiar *Ptychoceras adpressum* (J. Sowerby 1814). Its shell, which is seldom over 2 cm long, consists of two straight, parallel septate shafts and a short recurved body-chamber. It was probably the last representative of the Lower Cretaceous family Ptychoceratidae Meek, which was widespread in the Tethys but seldom ranged as far north as Britain. The species has been described and figured from Folkestone by Spath (1941, pp. 656-659), as belonging to *Mastigoceras* Boehm 1925. This is generally regarded as a synonym of *Ptychoceras* (see C. W. Wright 1957). Other isolated occurrences of the species are from Ootmarsum, Holland (Boehm 1925) and doubtfully, from Escragnolles, Var, France (Parona and Bonarelli 1897). Although considered a rarity in the British Gault, recently opened exposures in the Varicosum Subzone show that it is in fact abundant at one horizon where it forms a useful stratigraphic marker. It may be present over the entire 90 km outcrop of the Kentish Gault.



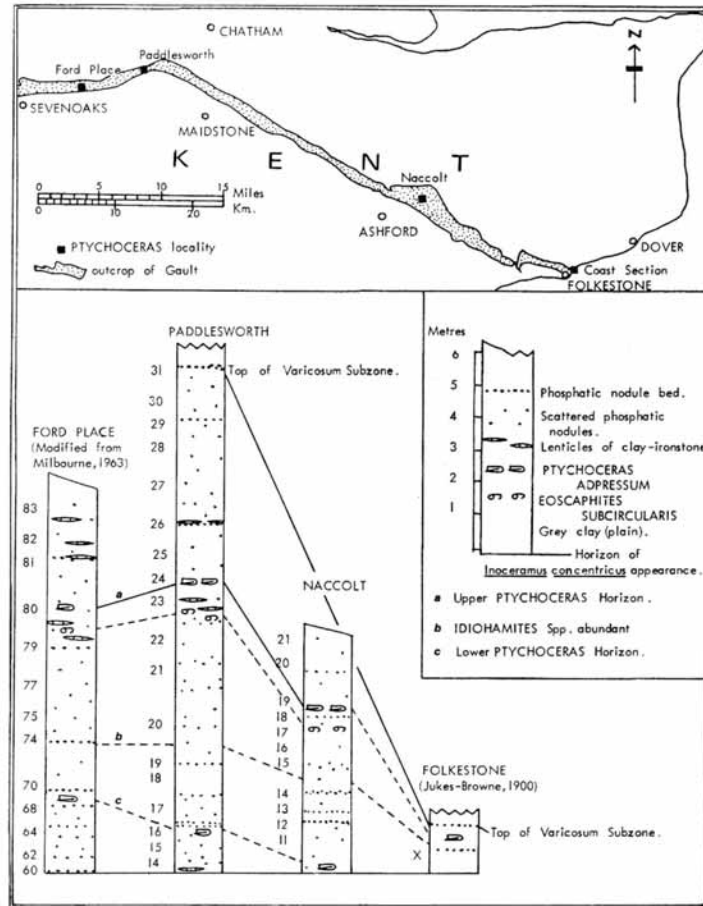
TEXT-FIG. 1. *Ptychoceras adpressum* (J. Sowerby), Upper Gault, Mid-Varicosum Subzone.
a, Reconstruction $\times 2$; nature of aperture not known. Last septum position shown by cross. *b*, *c*, Whorl sections through septate shafts and body-chamber, respectively.
d, Extreme example of constricted variety $\times 1.6$.

Occurrence

1. Ford Place Pit, Wrotham (Nat. Grid reference TQ 636591):
 - (*a*) Mid-Varicosum Subzone, middle of Bed 80 (of Milbourn 1963). Poorly exposed. (9 specimens collected).
 - (*b*) Low Varicosum Subzone, approximately 0.3 m below bed rich in *Nielsenicrinus*; ? Bed 69 (28 specimens).
2. Paddlesworth Pit, Snodland (TQ 692617):
 - (*a*) Mid-Varicosum Subzone, Division 24 on text-fig. 2. (Abundant—over 1500 specimens).
 - (*b*) Low Varicosum Subzone, Division 15. (Very rare—5 specimens.)

[*Palaeontology*, Vol. 14, Part 4, 1971, pp. 592-594.]

3. Naccolt Pit, Wye. (TR 049445):
 - (a) Mid-Varicosum Subzone, Division 19 on text-fig. 2. (Abundant—over 250 specimens).
 - (b) Basal Varicosum Subzone, Division 11. (Very rare—5 specimens.)
4. Folkestone Coast (TR 243365):
 - (a) Varicosum Subzone, horizon and abundance not specified (Jukes-Browne 1900 and Spath 1941, p. 659). Section now obscured.
 - (b) Auritus Subzone. Price (1874) (quoted by Jukes-Browne 1900, p. 82) recorded *Ptychoceras* sp. from his Bed XI and regarded it as peculiar to that bed. It has not been possible to substantiate this occurrence.



TEXT-FIG. 2. *Ptychoceras adpressum* localities in the *Mortoniceras inflatum* Zone of the Gault and correlation of occurrences. Figures to left of columns refer to beds or divisions.

At the first three localities, the mid-Varicosum Subzone *Ptychoceras* horizon is a grey clay about 0.5 m thick. It contains scattered phosphatic nodules and fossils. *Idiohamites turgidus* var. *subannulata* Spath is a common associate probably confined to this horizon. At all three pits, the clay up to 2 m below yields *Eoscaphtes subcircularis* Spath, which is particularly common at Naccolt. Lenticles of clay-ironstone are present at the same level at Ford Place and Paddlesworth.

The *Ptychoceras* horizon is most extensively exposed at Paddlesworth, although specimens are equally abundant at Naccolt. Apart from the rare occurrences in the low Varicosum Subzone, *P. adpressum* appears to be restricted to the bed in the mid-Varicosum Subzone.

When fresh, many *P. adpressum* are preserved as uncrushed pyrite moulds; however, very crushed pyrite-impregnated clay moulds are more common and are easily overlooked. Body chambers are scarce and no complete individuals have been seen. Most specimens are merely septate shafts around a centimetre long.

Specimens from Paddlesworth are identical to those from Folkestone figured by Spath. Fragments of the initial shaft usually show septa and the second shaft possesses a marked dorsal furrow. About 3% of individuals show a more or less strong constriction after the commencement of the second shaft, very similar to that shown by Spath (1941, text-fig. 241 *i, j*). He remarked that this constricted variety is 'almost like a miniature replica of *Ptychoceras puzosianum*, d'Orbigny'. Faint costation is seen on the second shaft of some individuals, but most are smooth.

Specimens tend to be clustered, and it is tentatively suggested that the adults were benthonic. On a square metre of bedding surface at Paddlesworth were two groups of closely spaced adult individuals; one with seven specimens, the other with five. In addition, four isolated adult individuals occurred on the square. Juveniles may have been pelagic, thus explaining their virtual absence from the fossil assemblage. The occurrence of the species at restricted horizons may reflect brief immigrations of stock from more southern waters into temporarily favourable environments.

Acknowledgements. I would like to thank Dr. J. M. Hancock for his most useful and constructive criticism; also Mr. A. Gale for his help and interest in the field.

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Typescript received 25 April 1971