SHORT NOTES

FOSSILS FROM THE SOUTH ORKNEY ISLANDS: II. MATTHEWS ISLAND

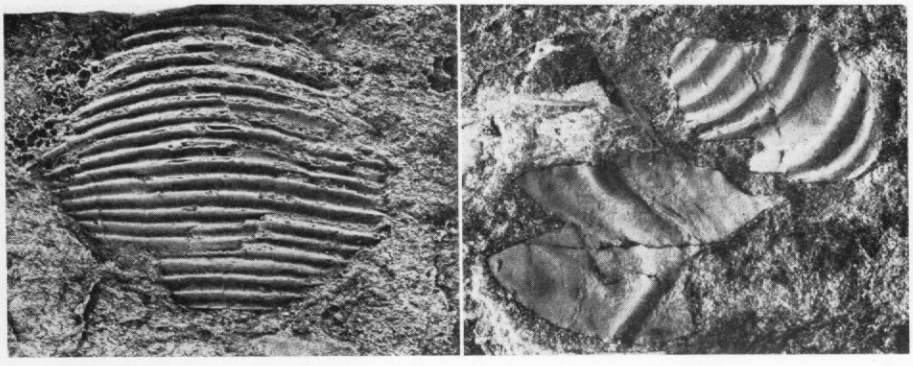
By M. R. A. THOMSON

ABSTRACT. A poorly preserved molluscan fauna in loose blocks of sandstone, derived from the Spence Harbour Conglomerate sequence of Matthews Island, is thought to indicate a Middle to Upper Cretaceous age.

Two slabs of highly micaceous flaggy sandstone (H.2101.2 and 3), collected by K. D. Holmes from a moraine at the southern end of Matthews Island, contain fragmentary remains of bivalves and ammonites. The lithology of the sandstone is closely similar to that of sandy intercalations within the Spence Harbour Conglomerate on Matthews Island, and the slabs are thought to have been derived from a 24 m. thick sandstone sequence exposed about 400 m. to the north-west (Thomson, 1971, figs. 6 and 7). Although no fossils have yet been found in the sandy intercalations *in situ*, the present specimens can reasonably be assumed to represent the first known invertebrate fossils indigenous to the Spence Harbour Conglomerate. A single belemnite from the Spence Harbour Conglomerate on Coronation Island is probably a derived specimen (Thomson and Willey, 1975).

None of the bivalves is very well preserved, although one isolated valve on specimen H.2101.3 is small (about 6 mm. high), feebly inflated and symmetrical, and it appears to have two small auricles, suggestive of the genus *Entolium*. Two small ovate moulds on the same slab may be the remains of some other species of bivalve.

Although they are fragmentary, the preservation of the ammonites is a little better than that of the bivalves. The smallest species is known from two obliquely crushed moulds which probably had original diameters of about 20–25 mm. The shell is moderately evolute and, in the early stages, is ornamented with fine (?) prosiradiate bifurcate ribs. On the outer whorl of both specimens the ribbing becomes coarser; the primary ribs are almost bullate and the secondaries may sometimes be replaced by intercalated ribbing. There are also suggestions of constrictions. A second ammonite species is preserved as a piece of external mould, probably from the ventral part of the shell, and it is ornamented with regular, closely spaced, sharp ribs (Fig. 1a). The curvature of the fragment suggests a rather inflated whorl section. Neither of these species is in any way diagnostic. The first has an ornament reminiscent of



a b

Fig. 1. a. Latex cast from an external mould of a ventral fragment of an indeterminate ammonite; ×1, coated (H.2101.3).
b. Two natural mould fragments thought to be from a "*Puzosia*"-like ammonite. The ventral side of the piece from the flank (bottom left) is towards the top; ×1, coated (H.2101.2).

some Berriasellidae (Upper Jurassic–Lower Cretaceous) or Hoplitidae (Middle Cretaceous), whereas the second could be compared to a wide range of ammonite forms spanning nearly the whole of the Jurassic and Cretaceous.

Several fragments on specimen H.2101.2 are probably part of the same individual and represent a third and more diagnostic species. The two best fragments (Fig. 1b) have different ornamentation. One is an almost smooth piece of internal mould with a deep angled constriction across its surface, and with faint indications of low rounded ribs having appoximately the same line as the constriction. The flatness of this fragment suggests that it is a piece from the flank of a whorl, an interpretation which is supported by the asymmetry of the ornament. The faint ribbing is apparently confined to one half of the fragment (? ventral) and, on the margin of that half, the constriction is wider (3+ mm.) than it is on the opposite margin (2 mm.). The second is a coarsely ornamented piece of external mould with curved, asymmetrically rounded ribs interrupted by a wide constriction. Its convexity and the symmetrical curvature of the ornament suggest that it is a piece of venter, probably from a different growth stage than the first fragment. However, the material is too fragmentary to be certain whether it represents an earlier or later growth stage than the flank fragment.

Deep wide constrictions, such as those on the above fragments, are limited to relatively few ammonite groups. The angular bend near mid-flank and the (?) ventral ribbing exclude the present species from the Tetragonitidae and suggest possible affinities to some Phylloceratidae (especially *Holcophylloceras* Spath), or to some Desmoceratacеae and particularly the sub-family Puzosiinae. If the flank fragment has been correctly orientated, and the constriction is slightly projected on the venter, it (the constriction) is angled aborally probably near or just above mid-flank. An identity with *Holcophylloceras* is therefore considered to be unlikely because the constrictions in that genus are sinuous and are usually angled adorally near mid-flank. Furthermore, the ornament on the ventral fragment is much coarser than that on the described species of *Holcophylloceras* known to the author. It is suggested that the features preserved on these fragments accord better with the Puzosiinae than any other ammonite group. Apart from the more sharply angled constriction, the features preserved compare tolerably well with *Puzosia subplanata* (Schlüter), genotype of *Puzosia s.s.* Bayle (cf. Moore, 1957, p. *L*364, fig. 476.5a and b), in which relatively coarse ribbing disappears on the adult body chamber. In *Kitchinites* Spath, however, the shell is first smooth and ribbing appears later. *K. darwini* (Steinmann) from the Quiriquina beds of Chile (Steinmann and others, 1895, pl. 5, fig. 3a and b) and the Campanian of Vega Island (Howarth, 1966, figs. 2a and b, 3b and 4) has constrictions which are only slightly less angled than those of the present fragments, but it does not appear to have such a coarse ornament on the venter.

Conclusions

This sparse fauna, obtained from loose blocks derived from the Spence Harbour Conglomerate sequence on Matthews Island, is too poorly preserved to determine its age precisely. However, the fauna is clearly Mesozoic and it is suggested that one of the ammonite species present has characters which apppear to conform better to those of the Puzosiinae than those of any other group. The general similarities to "*Puzosia*" *s.l.* suggest a Middle to Upper Cretaceous age. A more specific resemblance is noted between this species and *Kitchinites darwini*, already known from the Campanian of Vega Island, north-east Antarctic Peninsula, but the fragmentary material does not allow any firm conclusions to be drawn.

The age ranges of the component formations of the Mesozoic in the South Orkney Islands are only broadly known but the above conclusion, in conjunction with data from Coronation Island (Thomson and Willey, 1975), allow the following scheme to be tentatively proposed:

Spence Harbour Conglomerate	Middle to Upper Cretaceous
Gibbon Bay Shale	(?) Lower Cretaceous
Calcareous grit sequence (not exposed *in situ*)	Upper Jurassic to lowest Cretaceous.

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NOMENCLATURAL NOTES ON SOUTH GEORGIAN VASCULAR PLANTS

By D. W. H. WALTON

ABSTRACT. A list of currently accepted names for South Georgian vascular plant species is given together with references to synonyms for certain species. Comments are made on the genera *Hymenophyllum*, *Acaena*, *Juncus* and *Uncinia*.

TAXONOMIC work during the past few years has resulted in changes of name and status for a number of the species occurring on South Georgia. For the convenience of all interested in the island's flora and with a need for up-to-date nomenclature, the following list has been compiled of the currently accepted names for the native vascular species. The current names for the alien vascular species will be found in Walton and Smith (1973). Where a change of name has occurred from those published in Greene (1964), the previous name is given in brackets in the list below.

Pteridophyta

Lycopodium magellanicum Sw.—for synonyms see Looser (1961), Moore (1968).
Hymenophyllum falklandicum Baker—for synonyms see Diem and Lichtenstein (1959).
Blechnum penna-marina (Poir.) Kuhn—for synonyms see Allan (1961), Moore (1968), Sota (1970).
Cystopteris fragilis (L.) Bernh.
Polystichum mohrioides (Bory) C. Presl var. *plicatum* (Poepp.) C. Chr.
Grammitis kerguelensis Tard.—for synonyms see Tardieu-Blot (1962), Sota (1966).
Ophioglossum crotalophoroides Walt. (*O. opacum* Carmichael)—for synonyms see Clausen (1948), Moore (1968).

Angiospermae—Dicotyledones

Ranunculus biternatus Sm.
Colobanthus quitensis (Kunth) Bartl. (*C. crassifolius* (D'Urv.) Hook. f.)—for synonyms see Moore (1970).
Colobanthus subulatus (D'Urv.) Hook. f.

Montia fontana L. ssp. *fontana*—for synonyms see Moore (1963).
Acaena magellanica (Lam.) Vahl (*A. adscendens* Vahl ssp. *georgiae-australis* Bitter)—for synonyms see Grondona (1964).
Acaena magellanica × *tenera*—see Walton and Greene (1971).
Acaena tenera Alboff
Callitriche antarctica Engelm. ex Hegel
Galium antarcticum Hook. f.

Angiospermae—Monocotyledones

Juncus scheuchzerioides Gaudich.—for synonyms see Lourteig (1968).
Juncus inconspicuus (D'Urv.) Hook. f.
Rostkovia magellanica (Lam.) Hook. f.—for synonyms see Allan (1961).
Uncinia meridensis Steyermark (*U. smithii* Philcox)—for synonyms see Hooper (1968).
Festuca contracta T. Kirk (*F. erecta* D'Urv.)—for synonyms see Zotov (1965).
Poa flabellata (Lam.) Hook. f.—for synonyms see Moore (1968).
Deschampsia antarctica Desv.—for synonyms see Moore (1970).
Phleum alpinum L.
Alopecurus magellanicus Lam. (*A. antarcticus* Vahl)—for synonyms see Moore (1968), Moore (1973).

Notes

Hymenophyllum. Confusion has arisen over the correct name for the species on the sub-Antarctic islands. Moore (1968) recorded *H. falklandicum* for South Georgia as did Greene (1964). The maps of Lourteig and Cour (1963) show *H. peltatum* as the species occurring from South America to New Zealand. Recently, Hnatiuk (1972), in a paper recording *Hymenophyllum* from Macquarie Island, stated that *H. falklandicum* is synonymous with *H. peltatum*, supporting the assessment of Lourteig and Cour (1963). In the major monograph of the Southern Hemisphere species of *Hymenophyllum* (Diem and Lichtenstein, 1959) the two taxa are treated as quite distinct, *H. falklandicum* occurring only in South America, the Falkland Islands and South Georgia, whilst *H. peltatum* is much more widely distributed throughout the Southern Hemisphere. D. M. Moore (personal communication) has maintained both species in his forthcoming check list of Fuegian vascular plants. Whilst it is recognized that the two species are rather close morphologically, the South Georgian plants are retained here as the distinct species *H. falklandicum*.

Acaena. Recent extensive revision of synonymy within Sect. *Ancistrum* Bitter of this genus by the author has established that the correct name for the species originally called *A. adscendens* Vahl (Greene, 1964) and later *A. decumbens* (Gaert.) D. W. H. Walton (Walton and Greene, 1971) is *A. magellanica* (Lam.) Vahl. This taxon is highly variable and has been described under a very large number of names. A supplement to the synonyms given by Grondona (1964) will be published shortly by the author.

Juncus. Moore (1968) and Lourteig (1968) both treated *J. inconspicuus* as a synonym of *J. scheuchzerioides*, Moore suggesting that it was only a depauperate form of the latter species. The characters used by Greene (1964) to separate it from *J. scheuchzerioides*, viz. sessile 1(—2) flowered inflorescences, small size of plants, broad hyaline margins to the inner perianth and difference in the ripe capsule shape, have been examined by the author in a wide range of material including transplant experiments and growth in a nutrient-rich medium. It is concluded from these studies that the taxon is not a depauperate form of *J. scheuchzerioides* but a distinct species. Nevertheless, depauperate plants of *J. scheuchzerioides* do occur and these may easily be confused with *J. inconspicuus* if both species are only in a vegetative state.

Sterile material of a septate species of *Juncus* noted by Greene (1964), has usually been referred to *J. scheuchzerioides*. Recent field observations by the author and T. V. Callaghan have established that the sterile plants are always much more robust and generally much larger than those of *J. scheuchzerioides*, whilst there are differences in rhizome colour, diameter and growth pattern. Plants of this taxon should be referred to as *Juncus* sp. until flowering material allows specific identification.

Uncinia. The endemic species *U. smithii* was reduced to synonymy with *U. meridensis* by Hooper (1968), giving that species a distribution of South Georgia, Tristan da Cunha and Venezuela. The species shows close affinities with *U. sinclairii* Hook. f. and *U. elegans* (Kuk.) Hamlin from New Zealand, and *U. macrolepsis* Decne. from South America, but it appears that a major revision of *Uncinia* is necessary before it can be decided whether *U. meridensis* should itself be relegated to synonymy.

The type collections of *U. meridensis* have been examined. Although the plants are much smaller than those of *U. smithii*, they agree in details of habit, utricle form and ciliation, whilst there is only a slight difference in the shape of the glumes. It would seem likely that this species will be found in the southern Andes or Tierra del Fuego.

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