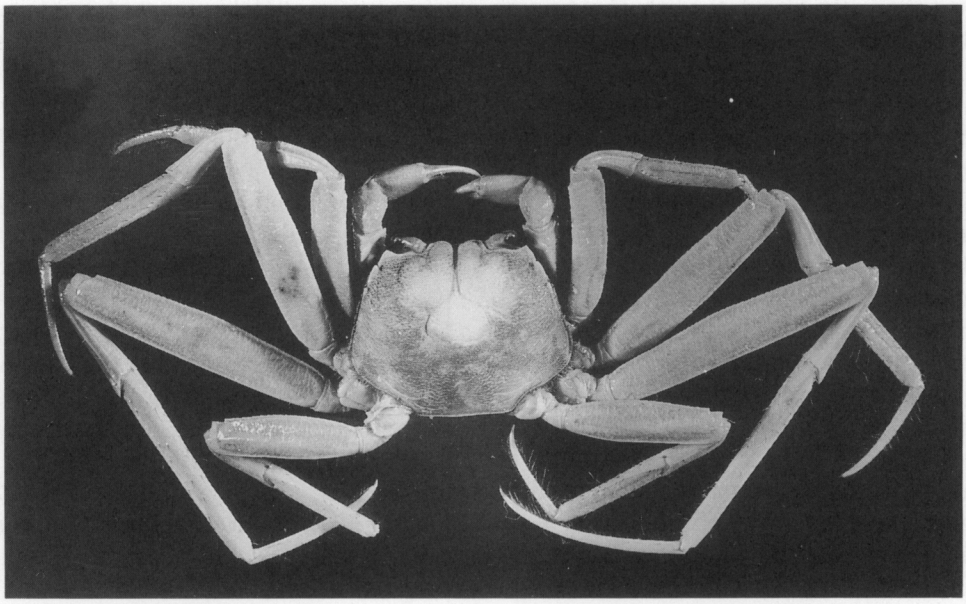

Fig. 5. *Sesarmoides ultrapes* new species. Holotype male, 28.6 by 22.8 mm (MNHN 24796), entire view.

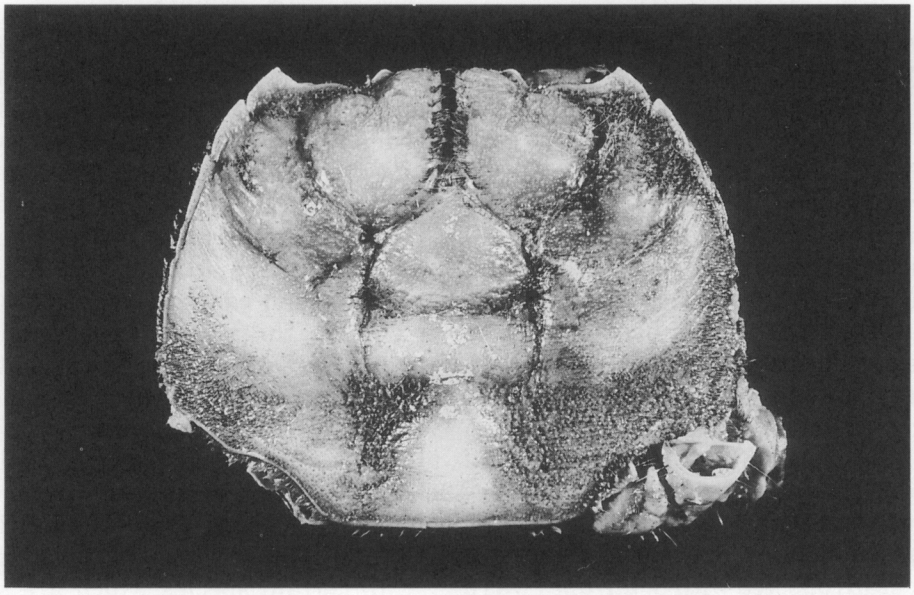

Fig. 6. *Sesarmoides ultrapes* new species. Paratype female, 39.6 by 32.1 mm (MNHN 24797), carapace.

also especially slender, with the fingers narrow and elongate, even in males.

Sesarmoides ultrapes seems to be closest to *S. cerberus* and *S. novabritannia* but differs sharply in having an even more divergent lateral carapace margin (the carapace hence appearing proportionately broader), more quadrate basal antennal segment, proportionately much longer ambulatory legs, different sternal structure (especially of sternites 1-3), broader male abdomen (especially segment 6), and a differently shaped male first pleopod.

Colour. — When alive, the holotype male had the mesogastric and intestinal regions white, the cardiac region light brown and the rest of the carapace reddish-brown (Fig. 4). The carapaces of the other specimens were a uniform brown. On all specimens, the ambulatory propodi and dactyli were white, the ambulatory meri bright orange, with the smaller cheliped being orange and the palm of the larger cheliped white in colour.

General biology. — The holotype and paratype female (MNHN 24796, 24797) from the Florida Islands were collected from inside an anchialine limestone cave (Mbetibula Cave) (Fig. 2). The crabs were observed both above, and in the water (up to 2 m depth). Mbetibula Cave is located about one km north of the village of Vuturua on the east coast of Nggela Pile island. This coastal cave has its entrance in a sea cliff just above the high tide line. The cave consists of a single chamber 10 m long by 5 m wide by 12 m high and 3 m deep. The substrate of the deepest pool (with clear waters) was sand. Salinities ranged from 9 ppt at the surface to 11.5 ppt at the bottom (about 3 m deep). Another crab collected with *S. ultrapes* was a badly damaged male specimen of the gecarcinucoid, *Sendleria* sp. (Parathelphusidae). Shrimps and mysids were also collected from the pool. The mysids have been preliminarily identified by Thomas Bowman (Smithsonian Institution) as a new species of *Heteromysoides*, most similar to *H. dennisi* Bowman from Cemetery Cave in the Bahama Islands (T. Bowman, pers. comm.).

The paratype female (ZRC 1993.7200) of *S. ultrapes* was collected from an anchialine limestone cave (Kwakwaru Cave) located about 50 m inland from the western tip of Basakana Island (Fig. 3). Kwakwaru Cave is 30 m long by 5 m wide and 5 m high with two shallow pools floored with limestone rubble. Atyid shrimps were present in the pool nearer the entrance and receiving indirect sunlight. The pool at the rear of the cave (about 2 m deep, salinity between 2-9.5 ppt) had troglobitic amphipods described recently by Stock & Iliffe (1991) as *Liagoceradocus lobiferus*. The same species is also present in an anchialine cave in Western Samoa some 2000 km away (Stock & Iliffe, 1991). Also collected in Kwakwaru Cave were several juvenile specimens of the land crab *Cardisoma rotundum* (Gecarcinidae).

In true troglobitic crabs, the carapace tends to be dorso-ventrally compressed and not distinctly inflated, there is a general loss of pigmentation on the carapace and thoracic appendages, the pereiopods are usually elongated, and the eye structures are often regressed. The length and diameter of the ocular peduncle is often reduced, and can sometimes be so atrophied that the crab is effectively blind and even the orbit itself is lost (e.g. *Cancrocaeca xenomorpha*, Hymenosomatidae, Ng, 1991). *Sesarmoides ultrapes*, like *S. cerberus* from Ambon, is relatively large compared to most known cave crabs which are usually much smaller (see Guinot, 1988).

In certain species which are supposedly confined to caves, there is only partial loss of body pigmentation and no obvious reduction in the ocular structures, although the pereiopods are distinctly elongated. *Sesarmoides ultrapes* belongs to this category of cave crabs as its carapace

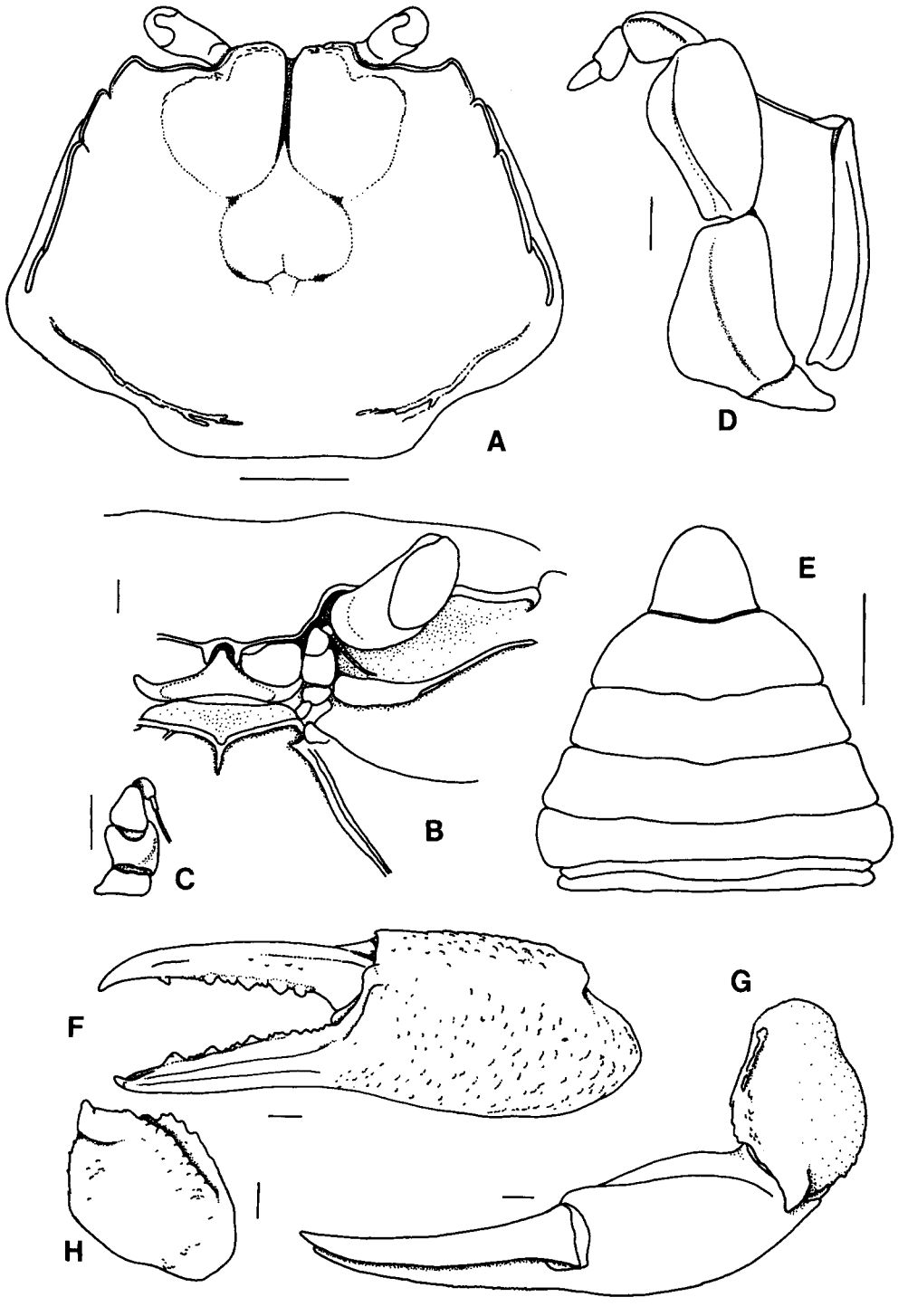

Fig. 7. *Sesarmoides ultrapes* new species. Holotype male, 28.6 by 22.8 mm (MNHN 24796). A, carapace (denuded); B, frontal view; C, left antenna; D, left third maxilliped (denuded); E, abdomen; F, left chela (outer view); G, left chela (dorsal view); H, left carpus of cheliped. Scales: A, E = 5.0 mm; B–D, F–H = 1.0 mm.

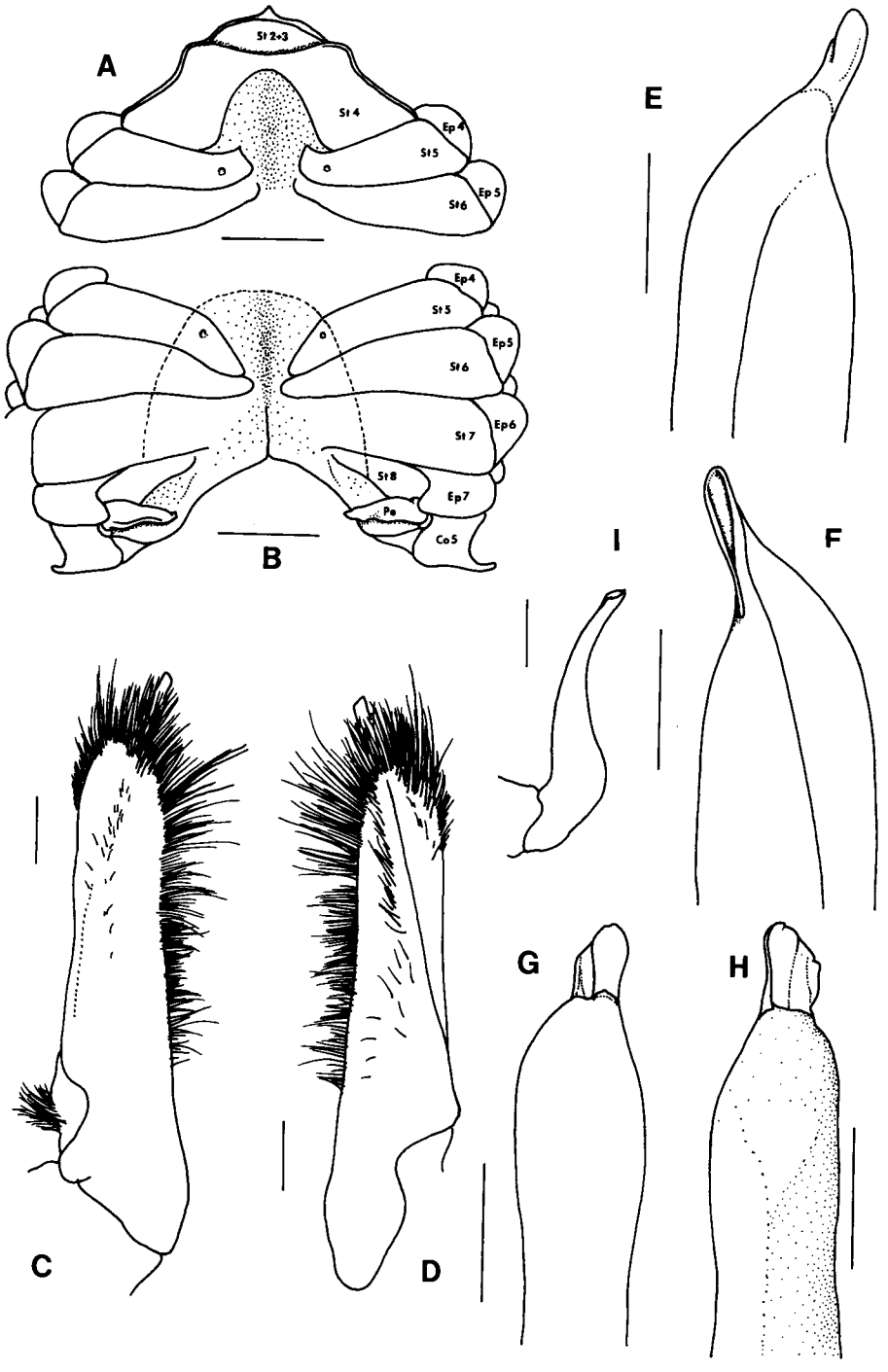

Fig. 8. *Sesarmoides ultrapes* new species. Holotype male, 28.6 by 22.8 mm (MNHN 24796). A, anterior sternal plastron; B, posterior sternal plastron; C, D, left first pleopod; E–H, distal part of left first pleopod (denuded); I, left second pleopod. E, ventral view; F, dorsal view; G, inner marginal view; H, outer marginal view. st = sternite; ep = episternite; co = coxa of ambulatory leg; pe = penis. Scales: A, B = 5.0 mm; C–H = 1.0 mm.

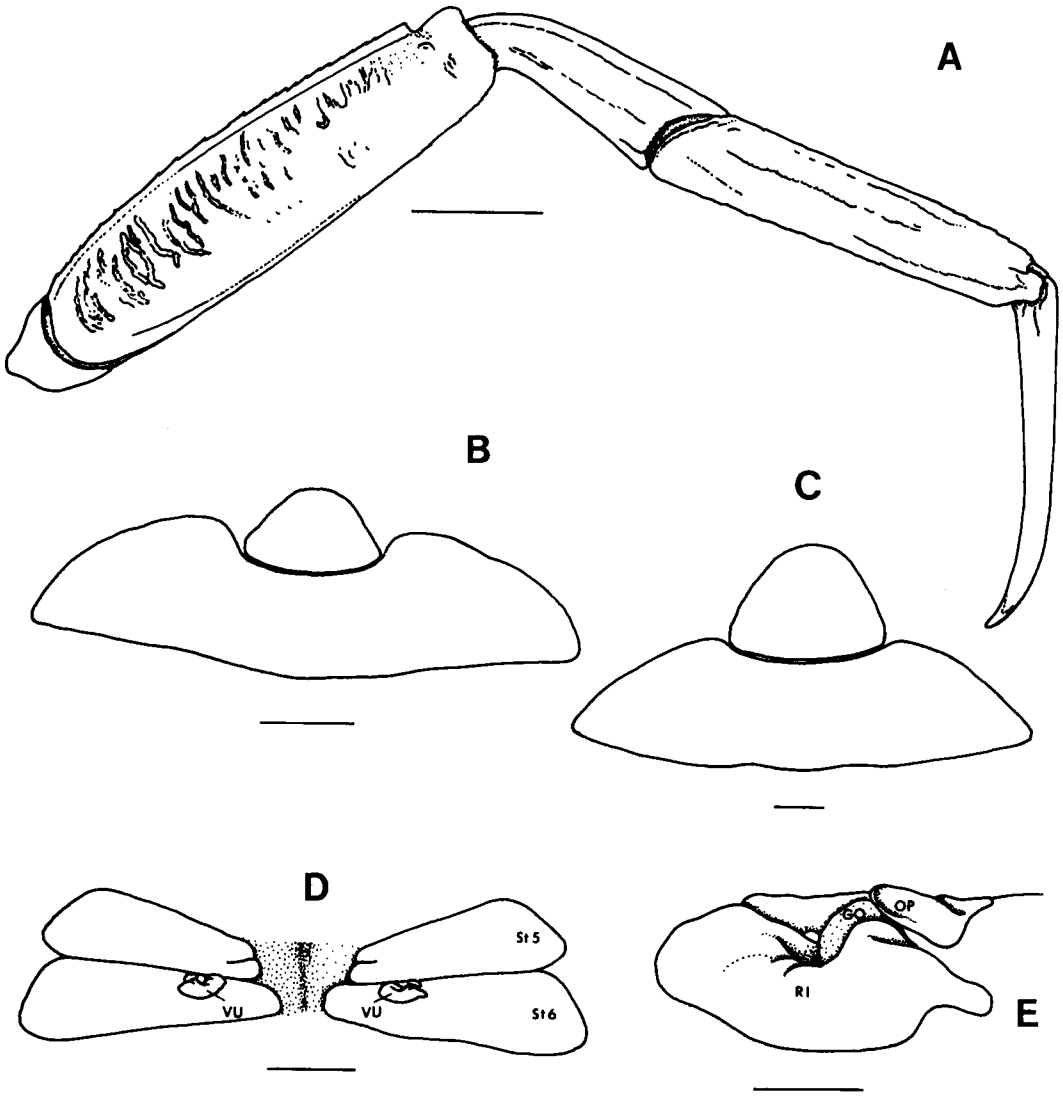

Fig. 9. *Sesarmoides ultrapes* new species. A, holotype male, 28.6 by 22.8 mm (MNHN 24796); B, D, E, paratype female, 39.6 by 32.1 mm (MNHN 24797); C, paratype female, 20.4 by 15.5 mm (ZRC 1993.7200). A, left fourth ambulatory leg; B, female abdomen (adult); C, female abdomen (juvenile); D, female sternites (st) 4 and 5, showing position of vulvae (VU), st = sternites; E, left vulva showing chitinised gonopore (GO), bulbous ridge (RI) and operculum (OP). Scales: A, B, D = 5.0 mm; C, E = 1.0 mm.

retains the brown pigmentation and its eyes are unreduced. The pattern of pigmentation loss in *S. ultrapes* however, is interesting as the distal parts of the ambulatory legs, chelae and posterior part of the carapace (in large specimens) are white or pale yellow. In many respects, *S. ultrapes* is similar to *Stygothelphusa bidiensis* (Gecarcinucidae) from caves in Sarawak, Borneo (Ng, 1989; Ng & Yussof, 1990). These species may be regarded as "incipient" troglobites, i.e. species which have only recently become obligate cave-dwellers and have thus not totally lost their body pigmentation, and do not show show ocular atrophication.

In general, anchialine crab fauna is poorly known. In fact, *S. ultrapes* is one of the few known anchialine crabs, and it is the first confirmed anchialine Brachyuran from the Indo-West Pacific.

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