

Notes on the taxonomy of *Frevillea* A. Milne-Edwards, 1880 (Crustacea, Brachyura, Goneplacoidea), with the description of a new genus for *F. sigsbei* A. Milne-Edwards, 1880

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Diuplex sigsbei (A. Milne-Edwards, 1880) after A. Milne-Edwards & Bouvier (1923: pl. 6, fig. 2).

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ABSTRACT

The identities of the Western Atlantic brachyuran crabs *Frevillea barbata* A. Milne-Edwards, 1880, *F. rosaea* A. Milne-Edwards, 1880, *F. tridentata* A. Milne-Edwards, 1880, and *F. sigsbei* A. Milne-Edwards, 1880, originally placed in Goneplacidae MacLeay, 1838, are clarified on the basis of the examination of type material as well as of additional specimens. The correct identity of the type material of the four species is resolved. A new genus, *Diuplax* n. gen., is described for *F. sigsbei*, which had previously been transferred to *Goneplax* Leach, 1814 (family Goneplacidae). The new genus is distinguished from *Goneplax s. str.* by having a short cheliped merus that possesses a low submedian tubercle on its dorsal margin (elongated merus with a distinct short submedian spine on its dorsal margin in *Goneplax s. str.*) and the unarmed dorsal margin of the meri of the ambulatory legs (with distinct subdistal spine in *Goneplax s. str.*). *Frevillea barbata* and *F. rosaea* are now in the Euryplacidae Stimpson, 1871, *F. sigsbei* is in *Diuplax* n. gen. (Goneplacidae, Goneplacoidea MacLeay, 1838), whereas *F. tridentata* is in *Trapezioplax* Guinot, 1969 in Pseudorhombilidae Alcock, 1900 (Xanthoidea MacLeay, 1838).

KEY WORDS

Western Atlantic region,
Goneplacoidea,
nomenclature,
new combination,
new genus.

RÉSUMÉ

Notes sur la taxonomie de Frevillea A. Milne-Edwards, 1880 (Crustacea, Brachyura, Goneplacoidea), avec la description d'un nouveau genre pour F. sigsbei A. Milne-Edwards, 1880.

L'identité des crabes de la région atlantique occidentale *Frevillea barbata* A. Milne-Edwards, 1880, *F. rosaea* A. Milne-Edwards, 1880, *F. tridentata* A. Milne-Edwards, 1880, et de *F. sigsbei* A. Milne-Edwards, 1880, originalement placés dans les Goneplacidae MacLeay, 1838, est clarifiée sur la base de l'examen des spécimens types ainsi que de spécimens additionnels. L'identité correcte du matériel type des quatre espèces est résolue. Un nouveau genre, *Diuplax* n. gen., est décrit pour *F. sigsbei*, antérieurement transféré dans *Goneplax* Leach, 1814 (Goneplacidae). Le nouveau genre se distingue de *Goneplax s. str.* par le court mérus du chélipède doté d'un faible tubercule submédian sur le bord dorsal (mérus nettement plus allongé, avec une courte épine sur le bord dorsal chez *Goneplax s. str.*) et le bord dorsal du mérus des pattes ambulatoires sans épine (une épine subdistale chez *Goneplax s. str.*). *Frevillea barbata* et *F. rosaea* font maintenant partie des Euryplacidae Stimpson, 1871 et *F. sigsbei* est dans *Diuplax* n. gen. (Goneplacidae, Goneplacoidea MacLeay, 1838), tandis que *F. tridentata* est dans *Trapezioplax* Guinot, 1969 dans les Pseudorhombilidae Alcock, 1900 (Xanthoidea MacLeay, 1838).

MOTS CLÉS
Région atlantique
occidentale,
Goneplacoidea,
nomenclature,
combinaison nouvelle,
genre nouveau.

INTRODUCTION

As part of his report on the Brachyura collected in the Gulf of Mexico, Caribbean Sea, and the Atlantic coast of the United States by the United States Coast Survey and Geological Service (USCSGS) Steamer *George S. Blake* between 1877 and 1879, Alphonse Milne-Edwards (1880) established the genus *Frevillea* for four species of catometopous crabs: *F. barbata* A. Milne-Edwards, 1880, *F. rosaea* A. Milne-Edwards, 1880, *F. sigsbei* A. Milne-Edwards, 1880, and *F. tridentata* A. Milne-Edwards, 1880. Much later, A. Milne-Edwards & Bouvier (1923) treated the genus and species in more detail, adding notes on the material they had available as well as providing for the first time, figures of the four species. No type species was originally designated for *Frevillea*, but Rathbun (1918: 25) selected *F. barbata* as the type species.

Guinot (1969a-c, 1971) discussed the taxonomy of various goneplacids at length and restricted *Frevillea* to *F. barbata* and *F. rosaea*, transferring, with doubt, *F. sigsbei* to *Goneplax* Leach, 1814, and referred *F. tridentata* to a new genus, *Trapezioplax* Guinot, 1969 (cf. Guinot 1969c). In his revision of the Goneplacidae MacLeay, 1838 *s. str.*, Castro (2007) recognised *F. sigsbei* as a valid species of *Goneplax* (see also Ng *et al.* 2008); *Trapezioplax* is now in Pseudorhombilidae Alcock, 1900 (see Guinot 1971; Ng *et al.* 2008; Thoma *et al.* 2014), and *Frevillea s. str.* is in Euryplacidae Stimpson, 1871 (Guinot 1971; Ng *et al.* 2008; Castro & Ng 2010).

As part of collection management in the Muséum national d'Histoire naturelle, Paris (MNHN), a technician, Laura Flamme, recently highlighted to the second author that the type specimens of *F. barbata* and *F. rosaea* as recorded were probably mislabelled and/or mixed. Taking advantage of a visit to the MNHN in 2023, the first author checked the MNHN's holdings of *Frevillea* with the third author at the request of the second author, who had examined and made notes of this material in 2006 as part of his studies on Goneplacoidea (see Castro 2007; Castro & Ng 2010). The first author also sought assistance from staff in the Museum of Comparative

Zoology, Harvard University, Cambridge, MA, United States (MCZ), where a part of A. Milne-Edwards' (1880) original material is housed. One of the results of our investigation was the establishment of a new genus, *Diuplax* n. gen., for *Frevillea sigsbei* A. Milne-Edwards, 1880.

MATERIAL AND METHODS

MEASUREMENTS

Measurements (in millimetres) are of the maximum carapace length followed by width (including teeth), respectively. The original type material examined was re-measured using the same method used for the more recent material. The terminology used follows Davie *et al.* (2015). Specimens examined are deposited in MCZ, ZRC and MNHN.

ABBREVIATIONS

Institutions

MCZ Museum of Comparative Zoology, Harvard University, Cambridge, MA;
MNHN Muséum national d'Histoire naturelle, Paris;
ZRC Zoological Reference Collection, Lee Kong Chian Natural History Museum, National University of Singapore.

Morphology

G1 male first gonopod;
G2 male second gonopod.

NOMENCLATURE

The specimens of A. Milne-Edwards (1880) and A. Milne-Edwards & Bouvier (1923) have been variously listed, labelled, and/or databased as "type", "cotypes", "holotype", "lectotype" or "paralectotype" by various authors and curators. This confusion stems from the manner these authors identified which is the "type" (in the sense of the name-bearing specimen) and how they listed their material. They also did not state where each specimen was deposited (i.e., MCZ or MNHN). Specimens were probably only shared between the two museums

later on. The situation was compounded by Rathbun's (1918) nomenclatural actions (see below). The present decisions on which specimens belongs to the syntype series and whether they are holotypes or lectotypes follow a strict interpretation of the current zoological code (ICZN 1999).

Alphonse Milne-Edwards (1880) provided collection data, measurements and sex for only one specimen for each of the four species he described (*F. barbata*, *F. rosaea*, *F. sigsbei*, and *F. tridentata*). We nevertheless cannot assume that the four specimens in question are the holotypes of the four species, because he never stated anywhere in the text which were the type specimens. Furthermore, he did not say if these four specimens were the ones he had. It is worth noting, however, that when A. Milne-Edwards (1880: 15-16) gave the measurements of the specimen for each of the four species of *Frevillea*, he writes “Largeur de la carapace d'un mâle” [Carapace length of one male] (for *F. barbata*), “Largeur de la carapace d'un [sic] femelle” [Carapace length of one female] (for *F. rosaea*), “Largeur de la carapace d'une femelle” [Carapace length of one female] (for *F. tridentata*), and “Largeur de la carapace d'une femelle chargée d'œufs” [Carapace length of one female with eggs] (for *F. sigsbei*). The wording he used suggests that he had more than one specimen of each species. Article 73.1.2 of the Code also states that for a specimen to be a holotype it should be stated as such or in an equivalent manner in the original publication. Recommendation 73F of the code advises that “Where no holotype or syntype was fixed for a nominal species-group taxon established before 2000, and when it is possible that the nominal species-group taxon was based on more than one specimen, an author should proceed as though syntypes may exist and, where appropriate, should designate a lectotype rather than assume a holotype.” Rathbun (1918) subsequently “mentioned” the type material of the four species as follows: *F. barbata*, “type in Paris Mus.” and “male holotype (Paris Mus.)” (Rathbun 1918: 26); *F. rosaea*, “holotype in Paris Mus.” (Rathbun 1918: 27); *F. tridentata*, “holotype in Paris Mus.” (Rathbun 1918: 29); and *F. sigsbei*, “holotype in Paris Mus.” (Rathbun 1918: 26). She apparently did not examine these “holotypes” as she listed them under her “other records” or “type locality” and not as “material examined”, and all the information (location and sex) for these was exactly as stated in A. Milne-Edwards (1880). While she did not indicate how many specimens there were, her action nevertheless constitutes a valid lectotype designation under Articles 74.5 and 74.6, even if the repository, as we now know, is incorrect. It is not known why she assumed the “holotypes” were in MNHN and not in MCZ. Rathbun had visited MNHN at the beginning of the 20th century to mainly work on freshwater crabs in Paris (see Bouvier, in Rathbun 1904: 225-226) but she apparently did not examine *Frevillea* during that time. While we cannot be certain as there are no records for this, it is possible that when Rathbun (1918) published her work, all the syntypes of the four species were still at Paris, and some of them were only sent back to MCZ during or after 1918, or more likely, after the paper of A. Milne-Edwards & Bouvier (1923). This would explain why Rathbun (1918) did not mention the MCZ type material for the four species.

The later publication by A. Milne-Edwards & Bouvier (1923) showed that there were more specimens of each of the four species of *Frevillea*, and identified the specimen mentioned by A. Milne-Edwards (1880) to be the “type” (in the sense of the name-bearing specimen) for each taxon. The designated “type” for each species is the same as those selected by Rathbun (1918). As far as the type status of the additional specimens listed by A. Milne-Edwards & Bouvier (1923), the best solution is to strictly follow Articles 72.4.1 and 72.4.1.1 of the ICZN code, which state “The type series of a nominal species-group taxon consists of all the specimens included by the author in the new nominal taxon (whether directly or by bibliographic reference), except any that the author expressly excludes from the type series [Art. 72.4.6], or refers to as distinct variants (e.g., by name, letter or number), or doubtfully attributes to the taxon.” and “For a nominal species or subspecies established before 2000, any evidence, published or unpublished, may be taken into account to determine what specimens constitute the type series”. It is clear then that A. Milne-Edwards (1880) had more than one specimen when he made the description even though he did not mention the others, and therefore must have used them when making his decision. In all cases, these additional specimens were from the same *Blake* station as the “type.” In addition, while A. Milne-Edwards & Bouvier (1923) did not identify the additional specimens as “cotypes” or the equivalent, they also do not explicitly exclude them as syntypes. As such, it is best to treat all the material of the species in A. Milne-Edwards & Bouvier (1923) as syntypes. With the identification of a name-bearing specimen or lectotype for each species by Rathbun (1918) and A. Milne-Edwards & Bouvier (1923), the remaining specimens are *de facto* paralectotypes.

SYSTEMATICS

Superfamily GONEPLACOIDEA MacLeay, 1838
Family EURYPLACIDAE Stimpson, 1871

Genus *Frevillea* A. Milne-Edwards, 1880

Frevillea A. Milne-Edwards, 1880: 15.

TYPE SPECIES. — *Frevillea barbata* A. Milne-Edwards, 1880 (by designation, Rathbun 1918: 25; gender feminine).

Frevillea barbata A. Milne-Edwards, 1880
(Figs 1; 2)

Frevillea barbata A. Milne-Edwards, 1880: 15. — Rathbun 1898: 287. — A. Milne-Edwards & Bouvier 1923: 336, fig. 2, pl. 2, figs 10, 11, pl. 7, figs 1, 2. — Guinot 1969b: 513, pl. 2, fig. 2; 1971: 1080 [in list]; 1984: pl. 1, fig. H. — Powers 1977: 114. — Soto 1985: 484, 487, 488; 1986: 3, 4, 36; 1991: 627. — Abele & Kim 1986: 54, 593, fig. a. — Boschi 2000: 82. — McLaughlin *et al.* 2005: 257 [in list]. — Ng *et al.* 2008: 78 [in list]. — Felder *et al.* 2009: 1081 [in list]. — Thoma *et al.* 2009: 553, 563, figs 1, 2. — Castro & Ng 2010: 53 (part).

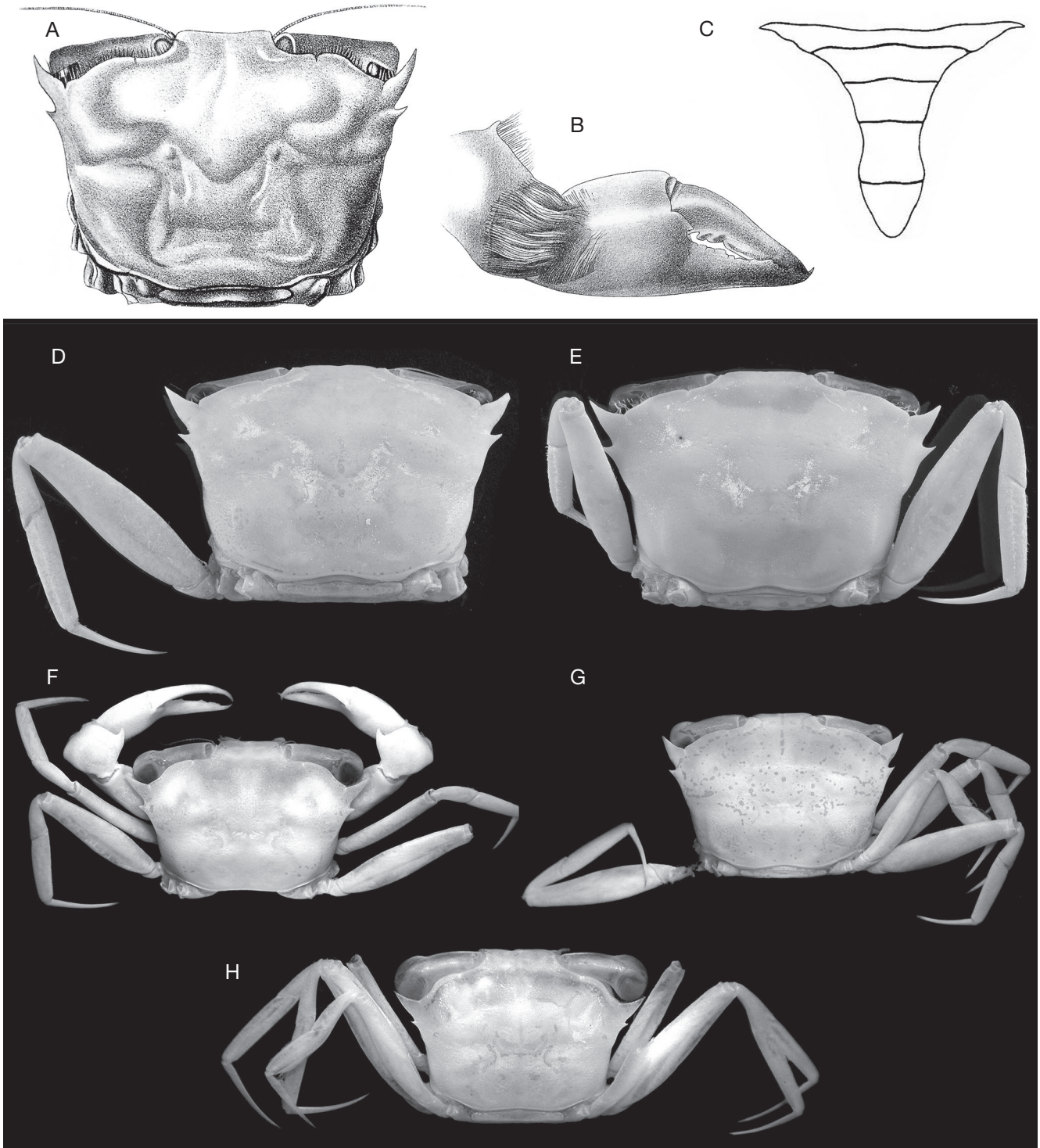


FIG. 1. — *Frevillea barbata* A. Milne-Edwards, 1880: **A-D**, lectotype ♂ (29.5 × 18.4 mm) (MCZ-IZ-CRU-9155); **E**, paralectotype ♀ (27.3 × 17.2 mm) (MCZ-IZ-CRU-9155); **F**, paralectotype ♂ (16.5 × 10.0 mm) (MNHN-IU-2014-7505); **G**, paralectotype ♀ (22.7 × 15.7 mm) (MNHN-IU-2014-7506); **H**, juvenile paralectotype ♀ (7.9 × 5.0 mm) (MNHN-IU-2014-7506); **A, D-H**, overall dorsal views; **B**, right chela; **C**, pleon. Credits: A-C after A. Milne-Edwards & Bouvier (1923: fig. 2; pl. 7, figs 1, 2); D, E, photographs by Alana Rivera, MCZ; , F-H, photographs by P. K. L. Ng.

Goneplax barbata – Rathbun 1918: 25, 26, pl. 4, figs 1, 3, pl. 5.

Frevillea rosaea – Castro & Ng 2010: 56 (part) (not *F. rosaea* A. Milne-Edwards, 1880).

Not *Frevillea barbata* – Poupin 1994: 48, pl. 5e (= *F. hirsuta* (Borradale, 1916)).

HISTORY. — *Frevillea barbata* was described from Blake’s station 36 in the Gulf of Mexico (23°13’N, 89°16’W) from a depth of 84 fathoms (= 154 m) (A. Milne-Edwards 1880: 15). Measurements were provided for one male (26.0 × 17.0 mm), but no type was indicated (see above). For the species, Rathbun (1918: 26) stated: “type-locality, lat. 23° 13’ N.; long. 89° 16’ W., 84 fathoms,

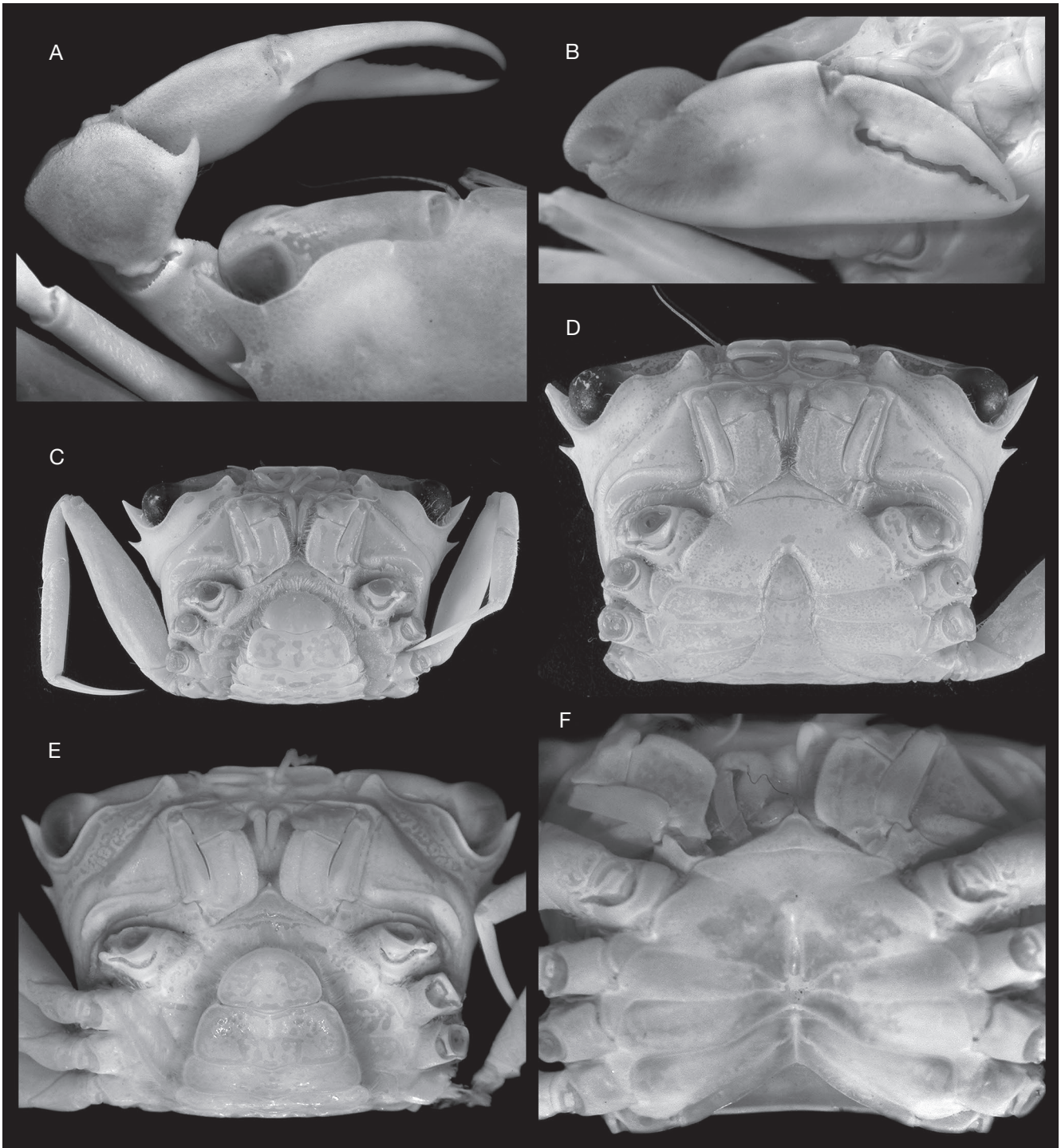


FIG. 2. — *Frevillea barbata* A. Milne-Edwards, 1880: **A, B, F**, paralectotype ♂ (16.5 × 10.0 mm) (MNHN-IU-2014-7505); **C**, paralectotype ♀ (27.3 × 17.2 mm) (MCZ-IZ-CRU-9155); **D**, lectotype ♂ (29.5 × 18.4 mm) (MCZ-IZ-CRU-9155); **E**, paralectotype ♀ (22.7 × 15.7 mm) (MNHN-IU-2014-7506): **A**, left side of carapace and left cheliped; **B**, right chela; **C-E**, ventral view of cephalothorax and pleon; **F**, ♂ sternopleonal cavity. Credits: A, B, E, F photographs by P. K. L. Ng; C, D, photographs by Alana Rivera, MCZ.

station 36, *Blake*; type in Paris Mus.” and “Yucatan Channel; lat. 23° 13' 00" N, long. 89° 16' 00" W; 84 fathoms; temp. 60° F; station 36, U. S. C. S. Str, *Blake*; male holotype (Paris Mus.).”; and although she did not examine the specimen, her action constitutes the first valid designation of a lectotype for the species. Rathbun (1918: 26), however, did examine another *Blake* specimen in MCZ: “Off Grenada; lat. 12° 01' 45" N.; long. 61°47'

25" W.; 92 fathoms; fne. S.; Mar. 1, 1879; station 262, *Blake*; 1 male (Cat. No. 4116. M. C. Z.).” Alphonse Milne-Edwards & Bouvier (1923: 336) elaborated that they studied one “type” male, one immature male, two adult females, and two juveniles. This ratified the name-bearing designation made by Rathbun (1918). Alphonse Milne-Edwards & Bouvier (1923) did not state the size of the type male (only one adult male is mentioned), but we

presume it is the one A. Milne-Edwards originally measured, i.e., 26.0 × 17.0 mm. They figured the male pleon for the type male (A. Milne-Edwards & Bouvier 1923: fig. 2), as well as the carapace and cheliped (pl. 7, figs 1, 2) and the fourth ambulatory leg (pl. 2, figs 10, 11) (Fig. 1A-C). In any case, apparently Rathbun (1918) and A. Milne-Edwards & Bouvier (1923) selected the same specimen as the lectotype.

Alphonse Milne-Edwards & Bouvier (1923: 337) also comment that “En dehors de la localité précédente qui se trouve dans le Golfe du Mexique au N. du Canal du Yucatan, l'espèce a été signalée, avec doute, au large de La Havane par Mlle Rathbun.” [Apart from the previous locality, which is in the Gulf of Mexico, N. of the Yucatan Channel, the species has been reported, with doubt, off Havana by Miss Rathbun.] (see Rathbun 1898). Guinot (1969b: 512, pl. 12 fig. 2) next recorded and figured a “cotype” female measuring 16.5 × 10.0 mm from station 36. Castro & Ng (2010: 53) listed one juvenile male (carapace width 5.9 mm, MNHN-B8733), and one male, one female and one juvenile (MCZ-IZ-CRU-9155). Guinot's (1969b) “cotype” female measuring 16.5 × 10.0 mm from station 36 is actually a male (see Material Examined below), although the gonopods are missing.

During the examination of material by the first author in May 2023 in the MNHN bottle labelled as “*Frevillea barbata*” (MNHN-B8733), he found only one small juvenile male measuring 7.8 × 5.9 mm and labelled as the lectotype. In the card catalogues in MNHN (under MP B8733), only one cotype female measuring 16.5 × 10.0 mm from the Gulf of Mexico is listed. The locality and station labels in the bottle match those given by A. Milne-Edwards (1880), and they include the original hand-written labels at A. Milne-Edwards time from the *Blake* cruise. We are certain this specimen is not *F. barbata*, but *F. rosaea* (see below in Taxonomy section). The material in MCZ consists of one catalogued lot (MCZ-IZ-CRU-9155) with three specimens: one adult male (29.5 × 18.4 mm), one badly damaged juvenile male (carapace width *c.* 9.0 mm), and one adult female (27.3 × 17.2 mm), all being listed in the labels as “cotypes” and in the database as “syn-types” (Figs 1D, E; 2D).

TYPE MATERIAL. — The 26.0 × 17.0 mm male of A. Milne-Edwards (1880) is the lectotype of *Frevillea barbata* because he did not identify a type specimen and did not indicate how many specimens he had (see above). This specimen is clearly the present MCZ male specimen measuring 29.5 × 18.4 mm (MCZ-IZ-CRU-9155); it agrees very well with the original figures (A. Milne-Edwards & Bouvier 1923: pl. 7, figs 1, 2) (Figs 1D; 2D). The present discrepancy in measurements can be explained by whether the carapace width was measured at the widest point of the external orbital teeth or across their bases; and if the length was taken medially, where the posterior margin is distinctly concave, or at its lateral part which is more concave. As noted above, the subsequent five specimens reported by A. Milne-Edwards & Bouvier (1923) should be now regarded as paralectotypes.

MATERIAL EXAMINED. — **Lectotype** (by inference of holotype by Rathbun 1918: 26, as *Goneplax barbata*; and A. Milne-Edwards & Bouvier 1923: 336 as *F. barbata*). **Mexico** • ♂ (29.5 × 18.4 mm); station 36, north of Alacran Reef, Campeche Bay, Yucatan; 84 fathoms (= 154 m); 23°13'0"N, 89°16'0"W; coll. USCGS; *George S. Blake* cruise; 19-24.I.1878; MCZ-IZ-CRU-9155.

Paralectotypes. **Mexico** • 1 ♀ (27.3 × 17.2 mm), 1 badly damaged juvenile ♂ (*c.* 9.0 mm carapace width); same data as for lectotype; MCZ-IZ-CRU-9155 • 1 ♂ (16.5 × 10.0 mm); same data as for lectotype; MNHN-IU-2014-7505 (= MNHN-B8733) • 1 ♀ (22.7 × 15.7 mm), 1 juvenile ♀ (7.9 × 5.0 mm); same data as for lectotype; MNHN-IU-2014-7506 (= MNHN-B8733).

GEOGRAPHICAL DISTRIBUTION. — Western Atlantic region: Grenada and Gulf of Mexico coasts of Florida and Mexico.

TAXONOMY

When the first author compared the specimens in the MNHN bottles now labelled as “*Frevillea barbata*” and “*Frevillea rosaea*” with the descriptions and the original figures of the species in A. Milne-Edwards (1880) and A. Milne-Edwards & Bouvier (1923), it was obvious that the specimens had been switched. In any case, *F. rosaea* was described only from two specimens, so the three specimens in the bottle clearly do not match.

In separating *F. rosaea* from *F. barbata*, A. Milne-Edwards (1880: 15) noted that “Cette espèce se distingue de la précédente par sa carapace plus épaisse et moins élargie en avant ; les bords latéraux étant presque parallèles. Le front est plus large et à bord plus droit. Les pédoncules oculaires sont plus gros et plus courts. L'angle postorbitaire est formé par une dent pointue, en arrière de laquelle existe un petit renflement tuberculiforme puis une épine hépatique courte mais acérée. Les pinces et les pattes ambulatoires sont disposées comme chez le *Frevillea barbata*.” [This species is distinguished from the preceding by its thicker carapace and less widened (narrower) in front; the side edges being nearly parallel. The front is wider and with a straighter edge. The eyestalks are larger and shorter. The postorbital angle is formed by a pointed tooth, behind which there is a small tuberculiform swelling and then a short but sharp hepatic spine. Claws and walking legs are arranged as in *Frevillea barbata*.] Alphonse Milne-Edwards & Bouvier (1923: 337) added that while *F. barbata* and *F. rosaea* were close, “Aux observations précédentes j'ajouterai que les pédoncules oculaires de cette espèce sont très dilatés dans leur région cornéenne, que les deux échancrures du bord orbitaire supérieur sont très accentuées, surtout la plus interne et que les pattes ambulatoires semblent un peu moins fortes que celles du *Frevillea barbata*. A part quelques différences très légères, tous les autres caractères sont identiques à ceux de cette dernière espèce, du moins dans le type chargé d'œufs et dans le très jeune exemplaire qui m'ont été soumis.” [To the preceding observations I will add that the ocular peduncles of this species are very dilated in their corneal region, that the two indentations of the superior orbital edge are very accentuated, especially the most internal one and that the ambulatory legs seem a little less strong than those of the *Frevillea barbata*. Apart from a few very slight differences, all other characters are identical with those of the latter species, at least in the egg-laden type and in the very young specimen provided to me.]

The characters of the present MNHN juvenile male labelled as “*Frevillea barbata*” (7.8 × 5.9 mm, MNHN-B8733) (Fig. 3E-G) actually match those described and figured as *F. rosaea* by A. Milne-Edwards (1880) and A. Milne-Edwards & Bouvier (1923) exactly. Conversely, the characters of the three MNHN specimens labelled as “*Frevillea rosaea*” (MNHN-B10152), match those of *Frevillea barbata*. How the specimens became switched in MNHN remains unknown and could have occurred during examination by researchers or other curatorial/digitisation processes. The second author had examined the MNHN material between

March and June 2006, and the material had already been mixed, as confirmed by notes and sketches of the two species made at the time. As such, the record of *F. barbata* (and *F. rosaea*) must be regarded as switched as they referred to both the types as well as the material they examined at that time. There are no problems with the MCZ specimens, with all the specimens of the two species agreeing with the original descriptions.

The MNHN male specimen (16.5 × 10.0 mm) now labelled as “*Frevillea rosaea*” (MNHN-B10152) actually closely matches what Guinot (1969b: pl. 12 fig. 2) figured as the MNHN “cotype” female of *F. barbata* from station 36 (no catalogue number indicated). They agree in measurements and the specimen agrees well in all physical features. We believe they are the same specimen. As such, after the present study of the literature and analysis of morphological characters for MNHN specimens of the two species in question, the specimens were returned to their correct jars.

Frevillea barbata A. Milne-Edwards, 1880 is the type species of *Frevillea* (cf. Castro & Ng 2010), family Euryplacidae Stimpson, 1871 (see Rathbun 1918: 25).

Frevillea rosaea A. Milne-Edwards, 1880
(Fig. 3)

Frevillea rosaea A. Milne-Edwards, 1880: 15. — A. Milne-Edwards & Bouvier 1923: 337, pl. 6, fig. 1. — Chace 1940: 47. — Guinot 1969b: 513; 1971: 1080 [list]. — McLaughlin *et al.* 2005: 257. — Ng *et al.* 2008: 78. — Castro & Ng 2010: 56 (part).

Frevillea rosae [sic] – Soto 1986: 3, 4, 33; 1991: 627.

Frevillea rosea [sic] – Felder *et al.* 2009: 1081.

Goneplax rosaea – Rathbun 1918: 25, 27. — Chace 1940: 47.

Frevillea barbata – Castro & Ng 2010: 53 (part). (not *F. barbata* A. Milne-Edwards, 1880).

HISTORY. — *Frevillea rosaea* was described from *Blake*'s station 232 off St. Vincent, Lesser Antilles, from a depth of 88 fathoms (161 m) (A. Milne-Edwards, 1880: 15). He provided measurements for one female, 20.0 × 15.0 mm, but no type was indicated. For the species, Rathbun (1918: 27) stated: “type-locality, St. Vincent, 88, correctly 87, fathoms, station 232, *Blake*; holotype in Paris Mus.” and although she did not examine the specimen, her action constitutes the first valid designation of a name-bearing specimen or lectotype for the species. Alphonse Milne-Edwards & Bouvier (1923: 337) later commented that they had one type ovigerous female (has to be the one with the measurements 20.0 × 15.0 mm) and one juvenile. They figured the dorsal features, including the carapace for the type female (A. Milne-Edwards & Bouvier 1923: pl. 6, fig. 1) (Fig. 3A). In addition, they wrote: “A part quelques différences très légères, tous les autres caractères sont identiques à ceux de cette dernière espèce, du moins dans le type chargé d’œufs et dans le très jeune exemplaire qui m’ont été soumis.” [Apart from a few very slight differences, all the other characters are identical to those of the latter species, at least in the egg-bearing type and in the very young specimen passed to me.] (A. Milne-Edwards & Bouvier 1923: 337). These comments also constitute a name-bearing or lectotype designation, even if done after Rathbun (1918). Both Rathbun (1918)

and A. Milne-Edwards & Bouvier (1923) apparently selected the same specimen to be the lectotype.

Chace (1940: 47) subsequently recorded the species from Cuba. Castro & Ng (2010: 56) listed one female “lectotype” (22.7 × 15.7 mm), one “paralectotype” male (16.3 × 10.1 mm) and one pre-adult female “paralectotype” (7.9 × 5.0 mm) (MNHN-B10152) for the species.

During the examination of material by the first author in May 2023, in the MNHN bottle labelled as “*Frevillea rosaea*” (MNHN-B10152), he found three specimens: a male (16.5 × 10.0 mm, without pleon and gonopods), a female (22.7 × 15.7 mm), and a juvenile female (7.9 × 5.0 mm) (Figs 1F-H; 2A, B, E, F). The adult female (22.7 × 15.7 mm) (Figs 1G; 2E) is labelled as the “lectotype” of the species, with the other two “paralectotypes.” In the card catalogues in MNHN, three specimens are listed from St. Vincent, of which one juvenile is listed as the cotype (MP B10152). The locality labels in the bottle match those given by A. Milne-Edwards (1880), but there are no original labels from the *Blake* cruise. As discussed earlier under *F. barbata*, we are certain that these three specimens do not belong to *F. rosaea* but to *F. barbata* instead. The material in MCZ consists of only one ovigerous female specimen (22.1 × 15.4 mm) (MCZ-IZ-CRU-9167) (Fig. 3A-D) and is labelled as a “syntype” in the database.

TYPE MATERIAL. — On the basis of the published information, the 20.0 × 15.0 mm female reported by A. Milne-Edwards (1880) is the lectotype of *F. rosaea*. This specimen is clearly the MCZ ovigerous female specimen measuring 22.1 × 15.4 mm (MCZ-IZ-CRU-9167) (Fig. 3A-D). The discrepancies in measurements are minor and can easily be accounted for by differences in how the measurements were made. Morphologically, it agrees very well with the original figures in A. Milne-Edwards & Bouvier (1923: pl. 6 fig. 1). The juvenile specimen reported by A. Milne-Edwards & Bouvier (1923) should be regarded as a paralectotype.

MATERIAL EXAMINED. — **Lectotype** (by inference of holotype by Rathbun 1918: 27, as *Goneplax rosaea*; A. Milne-Edwards & Bouvier 1923: 337 as *F. rosaea*). **Saint Vincent and the Grenadines** • ovigerous ♀ (22.1 × 15.4 mm); station 232; off St. Vincent; 88 fathoms (= 161 m); 13°06'45"N, 61°06'55"W; coll. USCGS; *George S. Blake* cruise; 21.II.1879; MCZ-IZ-CRU-9167.

Paralectotype. Saint Vincent and the Grenadines • 1 juvenile ♂ (7.8 × 5.9 mm); same data as lectotype; MNHN-IU-2014-19822 (= MNHN-B10152).

GEOGRAPHICAL DISTRIBUTION. — Western Atlantic region: Cuba and St. Vincent.

TAXONOMY

See the earlier discussion on the confusion of the types of *F. barbata* and *F. rosaea*.

Frevillea rosaea A. Milne-Edwards, 1880 is included in *Frevillea* s. str. as redefined by Castro & Ng (2010), family Euryplacidae Stimpson, 1871.

Family PSEUDORHOMBILIDAE Alcock, 1900

Genus *Trapezioplax* Guinot, 1969

Trapezioplax Guinot, 1969: 712.

TYPE SPECIES. — *Frevillea tridentata* A. Milne-Edwards, 1880, by original designation; gender feminine.

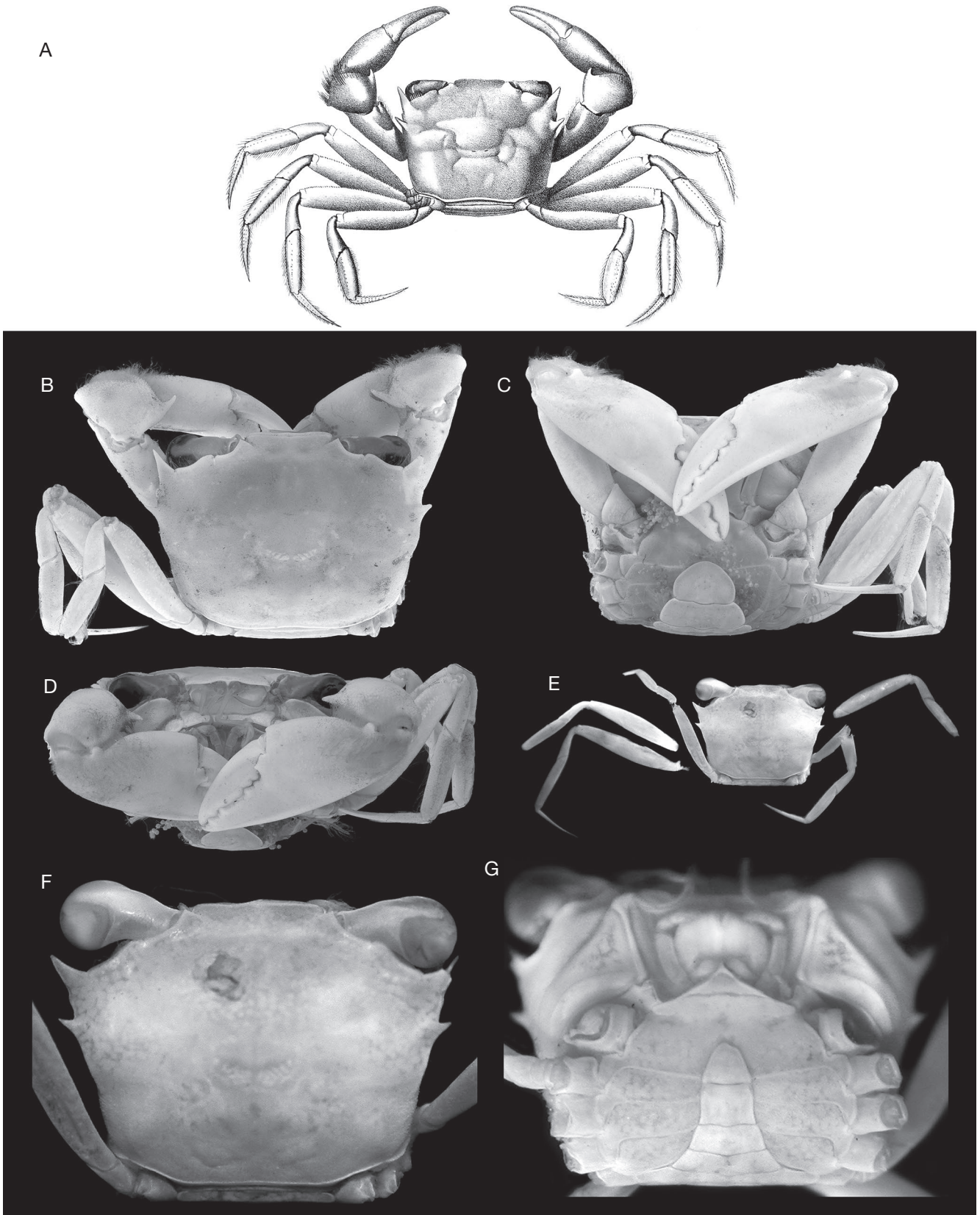


FIG. 3. — *Frevillea rosaea* A. Milne-Edwards, 1880: **A-D**, lectotype ovigerous ♀ (22.1 × 15.4 mm) (MCZ-IZ-CRU-9167); **E-G**, juvenile paralectotype ♂ (7.8 × 5.9 mm) (MNHN-IU-2014-19822): **A, B, E, F**, overall dorsal views; **C, G**, ventral view of cephalothorax and pleon; **D**, frontal view showing chelae. Credits: A, after A. Milne-Edwards & Bouvier (1923: pl. 6 fig. 1); B-D, photographs by Alana Rivera, MCZ; E-G, photographs by P. K. L. Ng.

Trapezioplax tridentata (A. Milne-Edwards, 1880)
(Fig. 4)

Frevillea tridentata A. Milne-Edwards, 1880: 10. — A. Milne-Edwards & Bouvier 1923: 338, fig. 4, pl. 6 fig. 3.

Goneplax tridentata – Rathbun 1918: 29.

Trapezioplax tridentata – Guinot 1969b: 513; 1969c: 713, figs 128, 129, 142, pl. 3, fig. 3; 1971: 1082 [in list]. — Ng *et al.* 2008: 192 [in list]. — Felder *et al.* 2009: 1081 [in list]. — Thoma *et al.* 2009: 555, 559; 2014: 90, 92, 100. — Guinot *et al.* 2013: 293. — Hermoso-Salazar & Arvizu-Coyotzi 2015: 67 [in list].

HISTORY. — Alphonse Milne-Edwards (1880: 16) described *F. tridentata* from one female measuring 8.0 × 5.0 mm from Blake's station 287 in Barbados, Lesser Antilles, from depths of 7.5–50 fathoms (14–91 m). He did not indicate if he had more specimens or if this specimen was the type. For the species, Rathbun (1918: 29) stated: “type-locality, Barbados, “7½ to 50” fathoms, station 287, Blake; holotype in Paris Mus.” and although she did not examine the specimen, her action constitutes the first valid designation of a name-bearing specimen or lectotype for the species.

Alphonse Milne-Edwards & Bouvier (1923: 338) later reported that they had one male (no measurements given but the pleon was figured: A. Milne-Edwards & Bouvier 1923: fig. 4) and one female, which was the one listed and measured in A. Milne-Edwards (1880). Although in the main text they made no mention of a “type,” their captions for the species (A. Milne-Edwards & Bouvier, 1923: pl. 6, fig. 3) stated that the specimens they figured were both types: “Un Type femelle” (A. Milne-Edwards & Bouvier 1923: pl. 6, fig. 3; present Fig. 4A) and “Abdomen du type. ♂” (A. Milne-Edwards & Bouvier 1923: fig. 4; present Fig. 4B). This action is confusing because they do not specifically identify one specimen as the “type”. Rathbun (1918) is therefore the only author who selected a valid lectotype. There are no type specimens of *F. tridentata* in MNHN. There are two specimens in the MCZ: a male (6.9 × 4.3 mm) and a female (8.5 × 4.7 mm), both catalogued as MCZ-IZ-CRU-9170. The labels indicate both specimens are “cotypes,” although the database only lists one specimen as a “syntype.”

TYPE MATERIAL. — On the basis of the literature, the female measuring 8.5 × 4.7 mm is the lectotype of *F. tridentata* A. Milne-Edwards, 1880 (Fig. 4C, D). This measurement is slightly different from that given in the original paper but easily explained (see discussion for *F. barbata*). As noted earlier, the other male specimen reported by A. Milne-Edwards & Bouvier (1923) is regarded as a paralectotype (Fig. 4E, F).

MATERIAL EXAMINED. — **Lectotype** (by inference of holotype by Rathbun 1918: 29, as *Goneplax tridentata*; A. Milne-Edwards & Bouvier 1923: 338 as *F. tridentata*). **Lesser Antilles** • ♀ (8.5 × 4.7 mm); station 287, off Barbados; 7.5–50 fathoms (= 16–91 m); 13°11'25"N, 59°38'20"W; coll. USCGS; *George S. Blake* cruise, 8.III.1879; MCZ-IZ-CRU-9170.

Paralectotype. **Lesser Antilles** • 1 ♂ (6.9 × 4.3 mm); same data as lectotype; MCZ-IZ-CRU-9170.

ADDITIONAL MATERIAL. — **Atlantic** • 1 ♂ (9.8 × 6.0 mm); Tortugas, Florida; 18 fathoms (= 33.0 m); coll. W. L. Schmitt, 1924; MNHN-IU-2022-4066 (= MNHN-B10255).

GEOGRAPHICAL DISTRIBUTION. — Western Atlantic region: Barbados and Gulf of Mexico.

TAXONOMY

Guinot (1969c) established a new genus, *Trapezioplax*, for *F. tridentata* on the basis of non-type specimens she had from the Tortugas in Florida deposited in MNHN (MNHN-

B10255), but she did not examine the types. Her figures (Guinot 1969c: fig. 142, pl. 3 fig. 3) were based on the MNHN specimen.

Frevillea tridentata A. Milne-Edwards, 1880, is the only species in *Trapezioplax* Guinot, 1969c, and is now in the family Pseudorhombilidae Alcock, 1900.

Family GONEPLACIDAE MacLeay, 1838

Diuplax n. gen.

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TYPE SPECIES. — *Frevillea sigsbei* A. Milne-Edwards, 1880, by present designation.

ETYMOLOGY. — The name is derived from the Latin *diutius* for “a long time,” in arbitrary combination with “-plax”, the ending for many goneplacid taxa, alluding to the long time it took to discover the true generic affinities of *F. sigsbei*. The gender is feminine.

DIAGNOSIS. — Carapace broadly trapezoidal (Fig. 5A, B, D, F, G); anterolateral tooth adjacent to pronounced external orbital tooth, separated by deep cleft (Figs 5A, B, D, F, G; 6A, B); posterior margin of epistome relatively wide transversely, margin almost straight (Fig. 6A, B); ocular peduncle relatively short, c. 2 times length of cornea (Figs 5A, B, D, F, G; 6A, B); male thoracic sternites 1–4 relatively wide (Fig. 5E); male thoracic sternite 8 visible as triangular plate when pleon closed; pleonal somite 1 reaching coxa of fourth ambulatory leg; episternite 7 partially overlaps episternite 8 in ventral view, penis visible in oblique view, between narrow channel between episternites 7 and 8 (Fig. 6C–E); male pleon relatively narrower transversely, especially somites 3–6 (Fig. 5E); adult male cheliped short, relatively stout (Fig. 5D, E); fourth ambulatory dactylus spatuliform (Fig. 5A, B, D); G1 relatively short, broadly C-shaped, evenly distally tapering gradually to sharp tip, opening subdistal, large (Fig. 6F, G); G2 longer than G1; flagellum long, longer than basal article, distal part strongly recurved (Fig. 6H, I).

REMARKS

The differences between *Diuplax* n. gen. and *Goneplax s. str.* are pronounced (see Table 1). Secondary differences observed between *Diuplax* n. gen. and *Goneplax s. str.* that may be of generic value are: the cheliped merus of the former is short, stout, dorsal margin of merus possessing a low submedian tubercle (Fig. 5B) (elongated, slender, with a distinct short submedian spine on dorsal margin in *Goneplax*, Fig. 7F); and the dorsal margin of the meri of the ambulatory legs have each show a subdistal angle but is not spiniform (Fig. 5A, B, D) (with a distinct subdistal spine in *Goneplax s. str.*; Fig. 7G).

COMPARATIVE MATERIAL. — *Goneplax rhomboides* (Linnaeus, 1758) • 3 ♂ (largest 36.5 × 22.6 mm); Kames Bay, Isle of Cumbray, Scotland; coll. S. De Grave; 2.VI.2005; ZRC 2010.0069 • 1 ♂ (22.0 × 35.8 mm); Grand Bassam, Abidjan, Ivory Coast, trawl; 250 m; coll. Le Loeuff & Intès; 23.XII.1966 (det. *Goneplax angulata*) MNHN-IU-2024-5374 (= MNHN-B19812). *Goneplax clevai* Guinot & Castro, 2007 • 1 ♂ (21.3 × 35.3 mm); Port Elizabeth, South Africa; coll. S. Fennessy, from local trawlers; 1.XII.2003; ZRC 2004.0700.

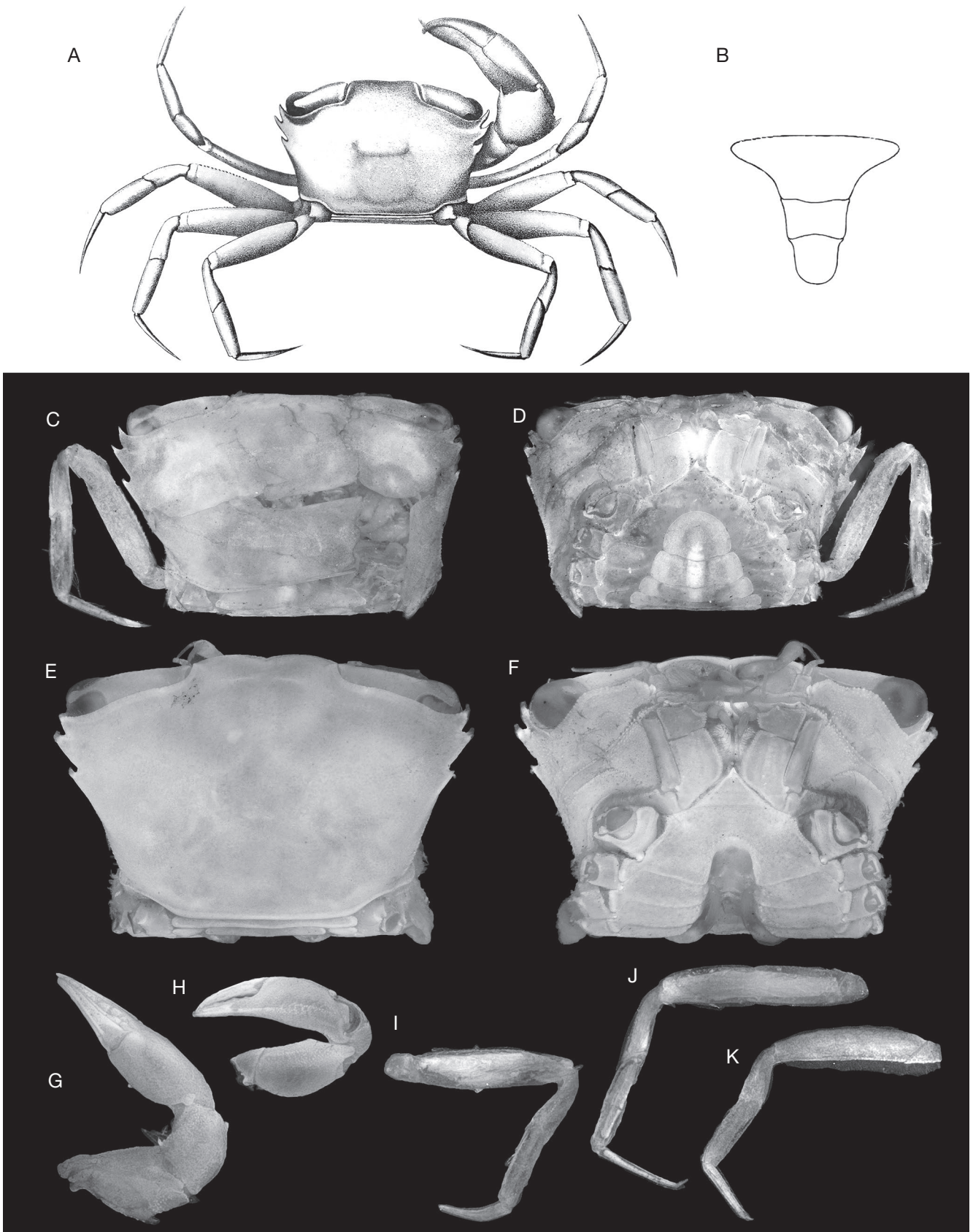


FIG. 4. — *Frevillea tridentata* A. Milne-Edwards, 1880 (now *Trapezioplax tridentata*): **A–D**, lectotype ♀ (8.5 × 4.7 mm) (MCZ-IZ-CRU-9170); **E, F**, paralectotype ♂ (6.9 × 4.3 mm) (MCZ-IZ-CRU-9170); **G, H**, right cheliped from either male or female specimen from MCZ (MCZ-IZ-CRU-9170); **I–K**, ambulatory legs from either MCZ specimen: **A, C, E**, overall dorsal view; **B**, pleon; **D, F**, ventral view of cephalothorax; **G**, right cheliped (dorsal view); **H**, right cheliped (ventral view); **I**, right ambulatory leg; **J, K**, left ambulatory leg. Credits: A, B, after A. Milne-Edwards & Bouvier (1923: fig. 4; pl. 6 fig. 3); C–K, photographs by Alana Rivera, MCZ.

TABLE 1. — Differences between *Goneplax* s. str. and *Diuplax* n. gen.

	<i>Goneplax</i> s. str.	<i>Diuplax</i> n. gen.
Carapace	Distinctly hexagonal (Fig. 7A)	Broadly trapezoidal (Fig. 5A, B, D, F, G)
Anterolateral margin	Lateral tooth positioned some distance from the external orbital tooth, c. one-third length of lateral margin (Fig. 7A)	Lateral tooth adjacent to the external orbital tooth (Figs 5A, B, D, F, G; 6A, B)
Posterior margin of epistome	Relatively narrow transversely, margin gently sinuous (Fig. 7B)	Relatively wide transversely, margin almost straight (Fig. 6A, B)
Eyes	Ocular peduncle long, c. 4 times length of cornea (Fig. 7A, B)	Ocular peduncle shorter, c. 2 times length of cornea (Figs 5A, B, D, F, G; 6A, B)
Male thoracic sternite 8	Sternite 8 visible as wide subhexagonal plate when pleon closed; pleonal somite 1 not reaching coxa of fourth ambulatory leg (Fig. 7E)	Sternite 8 visible as triangular plate when pleon closed; pleonal somite 1 reaching coxa of fourth ambulatory leg (Fig. 6D)
Male pleon	Relatively wide transversely, especially across somites 3-6 (Fig. 7D)	Relatively narrower transversely (Fig. 5E)
Adult male cheliped	Prominently elongated (Fig. 7F; Guinot & Castro 2007: figs 1, 2.)	Short (Fig. 5D, E)
Fourth ambulatory dactylus G1	Styliform (Fig. 7G)	Spatuliform (Fig. 5A, B, D)
G1	Relatively long, slender, almost straight, with distal flap-like part clearly demarcated; tip rounded (cf. Guinot & Castro 2007: fig. 3C)	Relatively short, C-shaped, tapering gradually to sharp tip (Fig. 6F, G)
G2	Distal part of flagellum straight or almost so (cf. Guinot & Castro 2007: fig. 3D)	Distal part of flagellum strongly recurved (Fig. 6H, I)

Diuplax sigsbei (A. Milne-Edwards, 1880) n. comb.
(Figs 5; 6)

Frevillea sigsbei A. Milne-Edwards, 1880: 16. — A. Milne-Edwards & Bouvier 1923: 337, fig. 3, pl. 6, fig. 2.

Goneplax sigsbei — Rathbun 1918: 25, 26, pl. 4, figs 2, 4. — Williams *et al.* 1968: 54, fig. 10. — Guinot 1969b: 520, figs 63, 68, 71a, b, 72; 1971: 1081 [in list]. — Williams 1984: 433, fig. 345. — Boschi 2000: 84 [in list]. — Nizinski 2003: 137. — Castro 2007: 692. — Ng *et al.* 2008: 80.

HISTORY. — Alphonse Milne-Edwards (1880: 16) described *F. sigsbei* from Blake's station 253 in Grenada, Lesser Antilles from a depth of 92 fathoms (= 168 m). One ovigerous female was measured, 14.0 × 9.0 mm but no type was indicated. Rathbun (1918: 26) stated: "type-locality, Grenada, 92 fathoms, station 253, Blake; holotype in Paris Mus." and although she did not examine the specimen; her action constitutes the first valid designation of a name-bearing specimen or lectotype for the species. Rathbun (1918: 27), however, did examine one of the Blake specimens in MCZ: "Off Grenada; Lat. 11° 27' 00" N.; long. 62° 11' 00" W.; 164 fathoms; S. Sh.; temp. 57° F; Feb. 27, 1879; station 254, Str. Blake; 1 female (Cat-No. 4117, M.-C. Z.)." Alphonse Milne-Edwards & Bouvier (1923: 337) stated that they studied two males and two females, including the measured ovigerous female type, 14.0 × 9.0 mm, which was figured (A. Milne-Edwards & Bouvier 1923: pl. 6 fig. 2); they also figured the frontal view of the carapace of a "type male" (A. Milne-Edwards & Bouvier 1923: fig. 3) (Figs 5A; 6A). This action is confusing because they do not specifically identify one specimen as the "type". Rathbun (1918) is therefore the only author who selected a valid name-bearing specimen or lectotype. The 14.0 × 9.0 mm ovigerous female is therefore the lectotype of *F. sigsbei*.

There are two specimens in MNHN listed as "syntypes" of *F. sigsbei*: a male (13.0 × 8.5 mm) and a female (10.8 × 7.3 mm), both registered as MNHN-B10199. The original labels list the two specimens as "cotypes" and have been accepted as such by all subsequent workers including Guinot (1969b) and Castro (2007). The male specimen, 13.0 × 8.5 mm, from station 287 in Barbados, was

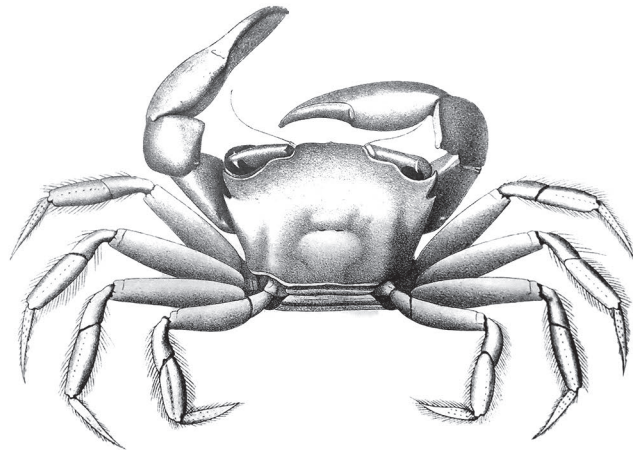
figured and described by Guinot (1969b: 521, 523, 525, figs 63, 68, 71, 72) and is cited as a syntype. These two specimens, however, cannot be syntypes as they were from station 287 off Barbados; A. Milne-Edwards (1880) and A. Milne-Edwards & Bouvier (1923) clearly stated that the type series, including the lectotype ovigerous female was from station 253 in Grenada (but see discussion later). MCZ is depository of two specimens from station 253, an ovigerous female (15.3 × 9.5 mm) (MCZ-IZ-CRU-10991) and a male (14.1 × 8.4 mm) (MCZ-IZ-CRU-10992), labelled as holotype and paratype, respectively; but in the database, both are listed as "syntypes."

TYPE MATERIAL. — The ovigerous female measuring 14.0 × 9.0 mm from station 253 is the lectotype of *F. sigsbei* A. Milne-Edwards, 1880. This specimen is the 15.3 × 9.5 mm ovigerous female specimen in MCZ (MCZ-IZ-CRU-10991) (Figs 5B, C; 6A), the differences in measurements easily accounted for by different measurement methods (see discussion for *F. barbata*). It agrees very well with the figures in A. Milne-Edwards & Bouvier (1923: pl. 6 fig. 2). The other male specimen in MCZ is here regarded as a paralectotype (Fig. 5D, E). As noted earlier, the two MNHN specimens from station 287 (Figs 5F, G; 6B-I) cannot be regarded as types for the time being. It does seem coincidental, however, that A. Milne-Edwards & Bouvier (1923) had two male and two female specimens in total, and since we know that specimens were shared between MCZ and MNHN in most cases, it would make sense that each institution kept one pair each. It is noteworthy that between MCZ and MNHN, we have found all the other specimens of *Frevillea*. It is possible the station number for the two MNHN specimens of *F. sigsbei* had been incorrectly recorded and they are actually from station 253 as well, but we may never know.

MATERIAL EXAMINED. — **Lectotype** (by inference of holotype by Rathbun 1918: 26, as *Goneplax sigsbei*; A. Milne-Edwards & Bouvier 1923: 337 as *F. sigsbei*). **Caribbean Sea** • ovigerous ♀ (15.3 × 9.5 mm); station 253, off Grenada; 92 fathoms (168 m); 11°25'0"N, 62°04'15"W; coll. USCGS; *George S. Blake* cruise; 27.II.1879; MCZ-IZ-CRU-10991.

Paralectotype. Caribbean Sea • 1 ♂ (14.1 × 8.4 mm); same data as lectotype; MCZ-IZ-CRU-10992.

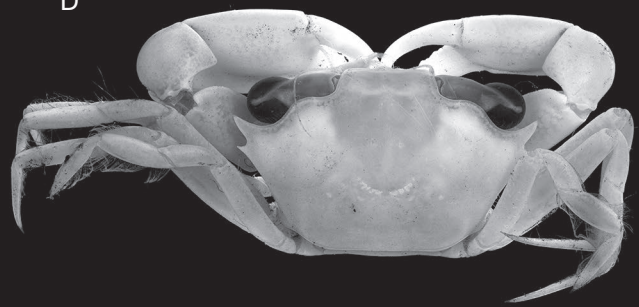
A



B



D



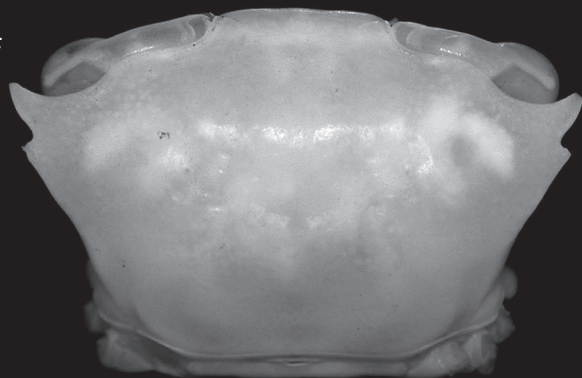
C



E



F



G

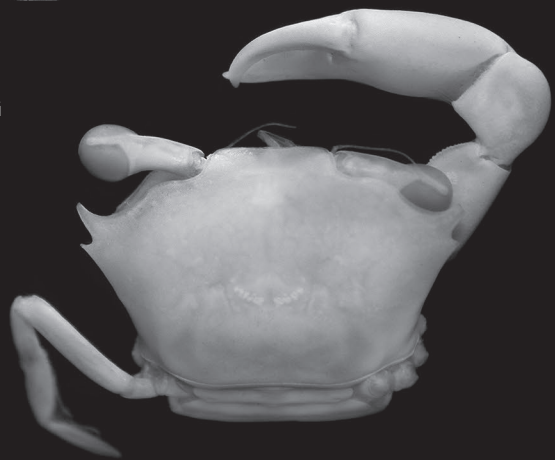


FIG. 5. — *Dioplax sigsbei* (A. Milne-Edwards, 1880) n. comb.: **A-C**, lectotype ovigerous ♀ (15.3 × 9.5 mm) (MCZ-IZ-CRU-10991); **D, E**, paralectotype ♂ (14.1 × 8.4 mm) (MCZ-IZ-CRU-10992); **F**, ♂ (13.0 × 8.5 mm) (MNHN-IU-2014-11828); **G**, ♀ (10.8 × 7.3 mm) (MNHN-IU-2014-11828); **A, B, D, F, G**, overall dorsal view; **C, E**, ventral view of cephalothorax and pleon. Credits: A, after A. Milne-Edwards & Bouvier (1923: pl. 6, fig. 2); B, C, photographs by Alana Rivera, MCZ; D-G, photographs by P. K. L. Ng.

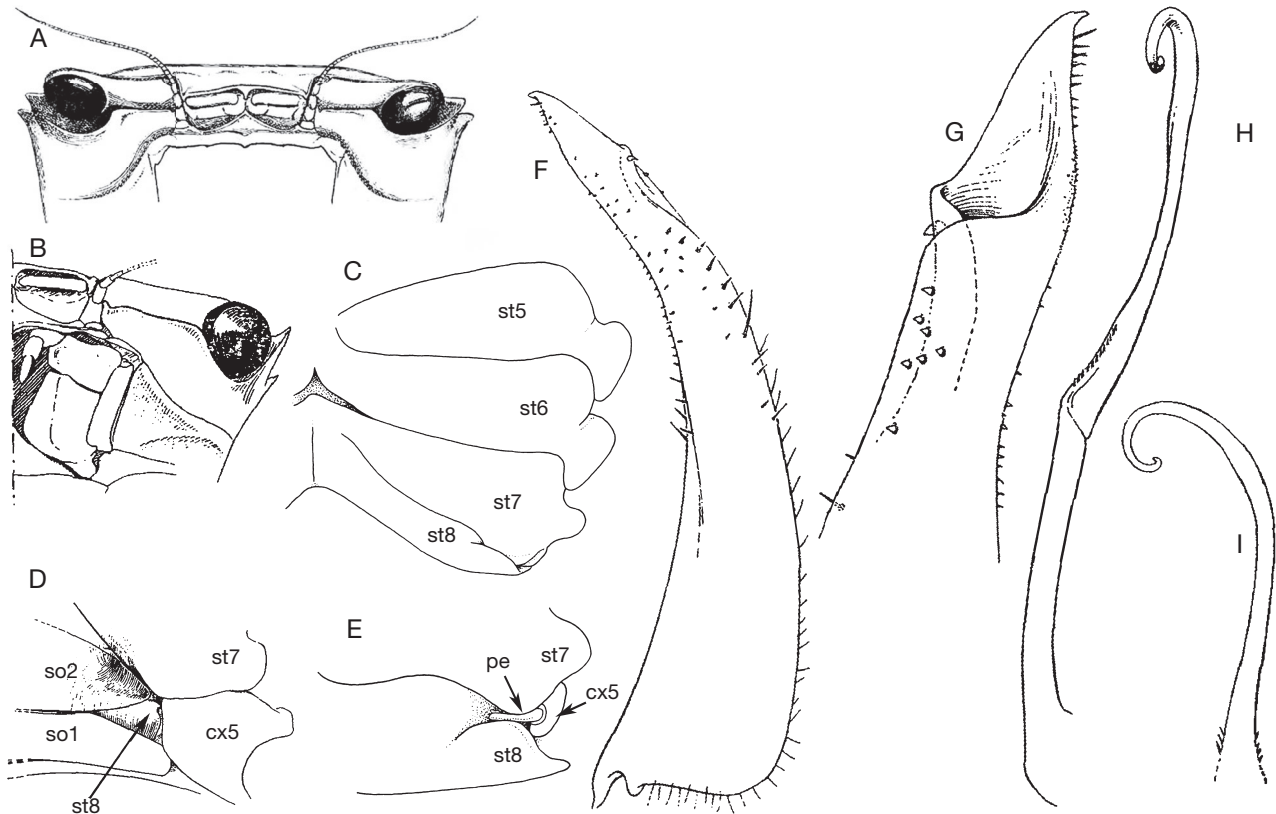


FIG. 6. — *Diuplax sigsbei* (A. Milne-Edwards, 1880) n. comb.: **A**, lectotype ovigerous ♀ (15.3 × 9.5 mm) (MCZ-IZ-CRU-10991); **B-I**, ♂ (13.0 × 8.5 mm) (MNHN-IU-2014-11828); **A**, frontal view of cephalothorax; **B**, left side of carapace showing orbit and third maxilliped (left side); **C**, ♂ thoracic sternite 8 and pleonal somites 1 and 2; **D**, sternopleonal cavity; **E**, penis and coxa of fourth ambulatory leg (tilted at angle to see penis); **F**, left G1; **G**, distal part of left G1; **H**, left G2; **I**, distal part of left G2. Credits: A, after A. Milne-Edwards & Bouvier (1923: fig. 3); B, D, F-I, after Guinot (1969b: figs 63, 68, 71, 72); C, E, by P. K. L. Ng. Abbreviations: **cx5**, coxa of fourth ambulatory leg; **pe**, penis; **so1**, **2**, pleonal somites 1 and 2, respectively; **st5-8**, thoracic sternites 5-8.

ADDITIONAL MATERIAL. — Caribbean Sea • 1 ♂ (13.0 × 8.5 mm), 1 ♀ (10.8 × 7.3 mm); station 287, off Barbados; 7.5-50 fathoms (14-91 m); 13°11'25"N, 59°38'20"W; coll. USCGS; *George S. Blake* cruise, 8.III.1879; MNHN-IU-2014-11828 (= MNHN-B10199).

GEOGRAPHICAL DISTRIBUTION. — Western Atlantic region: Grenada, Barbados and off South Carolina, United States.

TAXONOMY

In transferring to *Goneplax*, Guinot (1969b: 520-522) wrote: "Par contre, la *F. sigsbei* A. Milne Edwards, 1880 (p. 16), ouest-atlantique, conservée dans *Frevillea* par A. MILNE EDWARDS et BOUVIER (1923, p. 337, fig. 3, pl. 6, fig. 2) mais placée (en même temps que les autres *Frevillea*, mais celles-là authentiques) dans *Goneplax* par RATHBUN (1918, p. 26, pl. 4, fig. 2, 4), et par WILLIAMS *et al.* (1968, p. 54, fig. 10), peut être laissée pour le moment dans le genre de LEACH. Il est vrai qu'à première vue le faciès de *sigsbei* rappelle davantage une *Frevillea* que *Goneplax rhomboides*. Pourtant, les caractères de *sigsbei*, nullement euryplaciens, sont gonéplaciens (*s. str.*), notamment la région antenaorbitaire (fig. 68); l'abdomen mâle; le pl 1 mâle (fig. 71), fort sur toute sa longueur et à peine effilé vers l'apex; ainsi que le pl 2 mâle (fig. 72), plus long que le pl 1. Chez *sigsbei* (fig. 63), comme chez *rhomboides* (fig. 64), l'orifice mâle s'ouvre sur la coxa de p5 mais, par suite

du début de réunion des sternites 8 et 7, le pénis se trouve dans une gouttière imparfaitement close, ménagée entre ces deux régions. A noter que chez *rhomboides*, la portion latérale du sternite 8 non recouverte par l'abdomen est importante et s'intercale largement entre toute la partie basilaire, étroite, de l'abdomen (segments 1 et 2) et les coxae des p5; par contre, chez *sigsbei*, les premiers segments abdominaux, plus étendus, occupent pratiquement tout l'espace entre les coxae des p5, à l'exception d'une petite partie du sternite 8 qui est laissée à découvert. Par ailleurs, il ne semble pas que chez *sigsbei* le flagelle du pl 2, qui est recourbé, soit bifide comme chez *G. rhomboides*." [On the other hand, the *F. sigsbei* A. Milne Edwards, 1880 (p. 16), West Atlantic, kept in *Frevillea* by A. MILNE EDWARDS and BOUVIER (1923, p. 337, fig. 3, pl. 6, fig. 2) but placed (together with the other *Frevillea*, but those authentic) in *Goneplax* by RATHBUN (1918, p. 26, pl. 4, fig. 2, 4), and by WILLIAMS *et al.* (1968, p. 54, fig. 10), may be left for the time being in the genus of LEACH. It is true that at first glance the faciès of *sigsbei* is more reminiscent of a *Frevillea* than *Goneplax rhomboides*. The characters of *sigsbei* are nevertheless goneplacian (*s. str.*), not euryplacian, notably the antenaorbital region (fig. 68); the male abdomen [pleon]; the pl 1 male (fig. 71), strong along its entire length and barely tapering towards the apex; as well as the

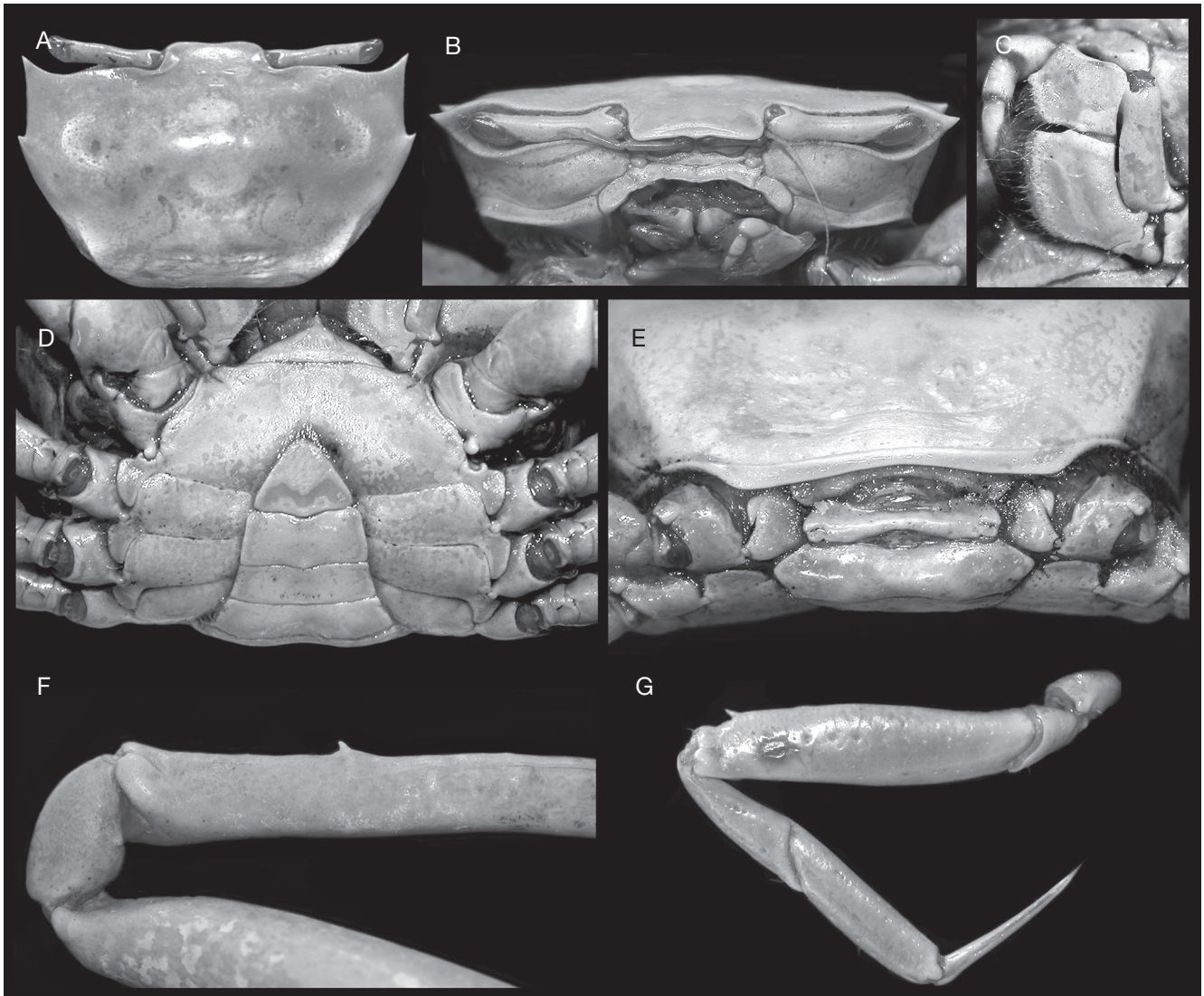


FIG. 7. — *Goneplax rhomboides* (Linnaeus, 1758), ♂ (36.5 × 22.6 mm) (ZRC 2010.0069), Scotland. **A**, dorsal view of carapace; **B**, frontal view of cephalothorax; **C**, left third maxilliped; **D**, anterior thoracic sternum and pleon; **E**, posterior thoracic sternum and pleon; **F**, right merus of cheliped (inner view); **G**, left fourth ambulatory leg. Credits: photographs by P. K. L. Ng.

male pl 2 (fig. 72), longer than the pl 1. In *sigsbei* (fig. 63), as in *rhomboides* (fig. 64), the male orifice opens on the coxa of p5 but, as a result of the beginning of the union of sternites 8 and 7, the penis is in an imperfectly closed gutter, formed between these two regions. It should be noted that in *rhomboides*, the lateral portion of sternite 8 not covered by the abdomen is important and is widely inserted between the entire basilar, narrow part of the abdomen (segments 1 and 2) and the coxae of p5; on the other hand, in *sigsbei*, the first abdominal segments, more extended, occupy practically all the space between the coxae of p5, with the exception of a small part of sternite 8 which is left uncovered. Moreover, it does not seem that in *sigsbei* the flagellum of pl 2, which is curved, is bifid as in *G. rhomboides*.]

Frevillea sigsbei A. Milne-Edwards, 1880 is clearly a member of Goneplacidae MacLeay, 1838, *s. str.* (cf. Castro 2007). Comparing the specimens of *F. sigsbei* also shows that Gui-

not's (1969b) doubts about transferring it to *Goneplax* are justified. The differences in the pleon, sternal and gonopodal structures, as well as differences in the carapace and chelipeds with *Goneplax s. str.* argue for treating *F. sigsbei* as a separate new genus. It is here made the type species for a new genus, *Diuplax* n. gen.

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