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A new species of *Chasmagnathus* (Crustacea: Brachyura: Grapsidae) from the Bodgaya Island Group (Semporna), Sabah, Borneo

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Abstract. A new species of grapsid crab *Chasmagnathus georgei* from Borneo and Fiji is described and compared with *C. convexus* De Haan, 1835. Diagnostic characters of the two species are tabulated.

INTRODUCTION

At present the genus *Chasmagnathus* de Haan, 1835 comprises two species, *C. convexus* De Haan 1835 and *C. granulatus* Dana 1852 (Sakai 1976: 668), although in a forthcoming reappraisal of the *Chasmagnathus/Helice* complex Turkay & Sakai (Turkay pers. comm.) propose the transfer of *C. granulatus* to a new genus. A recently studied collection of brachyurans from the Semporna Marine Park Survey (George & George 1987) contained three *Chasmagnathus* specimens that differ in several respects from the known species and are described below as *Chasmagnathus georgei* sp. nov. Two further specimens examined from Fiji, *Helice latreillei* var. (Miers 1886: 268–9) and *Helice subquadratus* (from Senckenburg Museum determined as *Chasmagnathus subquadratus* Dana 1852) are identical to the new Semporna material.

Abbreviations used: BM = British Museum (Natural History), SMF = Senckenberg-Museum Frankfurt, CW = carapace width measured across the 2nd anterio-lateral tooth.

DESCRIPTION OF SPECIES

Chasmagnathus georgei sp. nov.
(Figs. 1A, B, G & H; 2B & D; plates 1B, 2B & 3B)

Synonymy. *Helice latreillei* Milne Edwards, var. (Miers 1886: 268–269, female, plate XXI, Figs. 2 & 2*a*).

Material. Intertidal, Remembrance Beach, Bodgaya, Sabah, Borneo, 28th August 1980, collected by David & Jennifer George; holotype 1♂ 20 mm CW, BM reg. no. 1985: 489; Paratypes 1♂ 20 mm CW, 1♀ 17 mm CW, BM reg. no. 1985: 490; Kandavu Reef, Fiji Island, July 1874, collected HMS *Challenger;* 1♀ 18 mm CW, BM reg. no. 1884: 31 (previously determined as *Helice latreillei* var.); Fiji Islands, Museum Godefroy, 1♂ 18 mm CW, SMF reg. no. 4131 (previously determined as *Chasmagnathus subquadratus*).

Description of holotype. Carapace subrectangular with lateral margins sinuous; front less than half (1/3 – 1/4) carapace width, deflexed towards epistome; anterio-lateral margins of carapace weakly up-turned, bearing three teeth (including external orbital); dorsal margin of carapace in lateral profile with a single row of submarginal setae; dorsal surface smooth and naked except for a thick mat of short setae close to the anterio-lateral teeth (Paratypes; mat of dorsal carapace setae more extensive than holotype); cardiac region of carapace only faintly demarcated from mesogastric region; a medial groove on anterior surface of carapace also weak; epistome projecting slightly beyond the front margin of the carapace; pterygostomal region reticulated with small tubercles and fine setae arranged in regular verticle rows. Antennules obliquely folded; antennal flagellum short and naked with basal peduncular segment lodged in orbital hiatus. Orbits transverse, shallow, eye-stalks projecting beyond orbital margin when withdrawn; orbits open at outer angle, bearing numerous surficial setae; sub-orbital ridge with mesial crest tuberculate laterally (similar in both sexes). Third maxillipeds separated by a rhomboidal gap, ischium with oblique transverse 'hairy' crest on ventral surface running from posterio-external angle towards anterio-internal angle; merus longer than broad, palp articulating near anterior margin; exopod slender. Chelipeds symmetrical (also in ♀ paratype), manus (palm) of propodus longer than broad with short row of setae on posterio-dorsal outer surface; inner surface granular, outer surface smooth, dorsal outer margin with fine crest; carpus with weak ridge on dorsal surface, inner margin lacking distinct tubercles, inner surface of merus with a single comb of setae, ventral inner margin tuberculate proximally, ventral surface smooth, stridulatory ridge present (also in ♀ paratype). Fourth pair of walking legs not markedly weaker than rest, 2nd pair longer than rest, carpus propodus and

dactylus of all walking legs matted with short setae. Abdomen 7-segmented; male pleopod tubular with blunt horny apex.

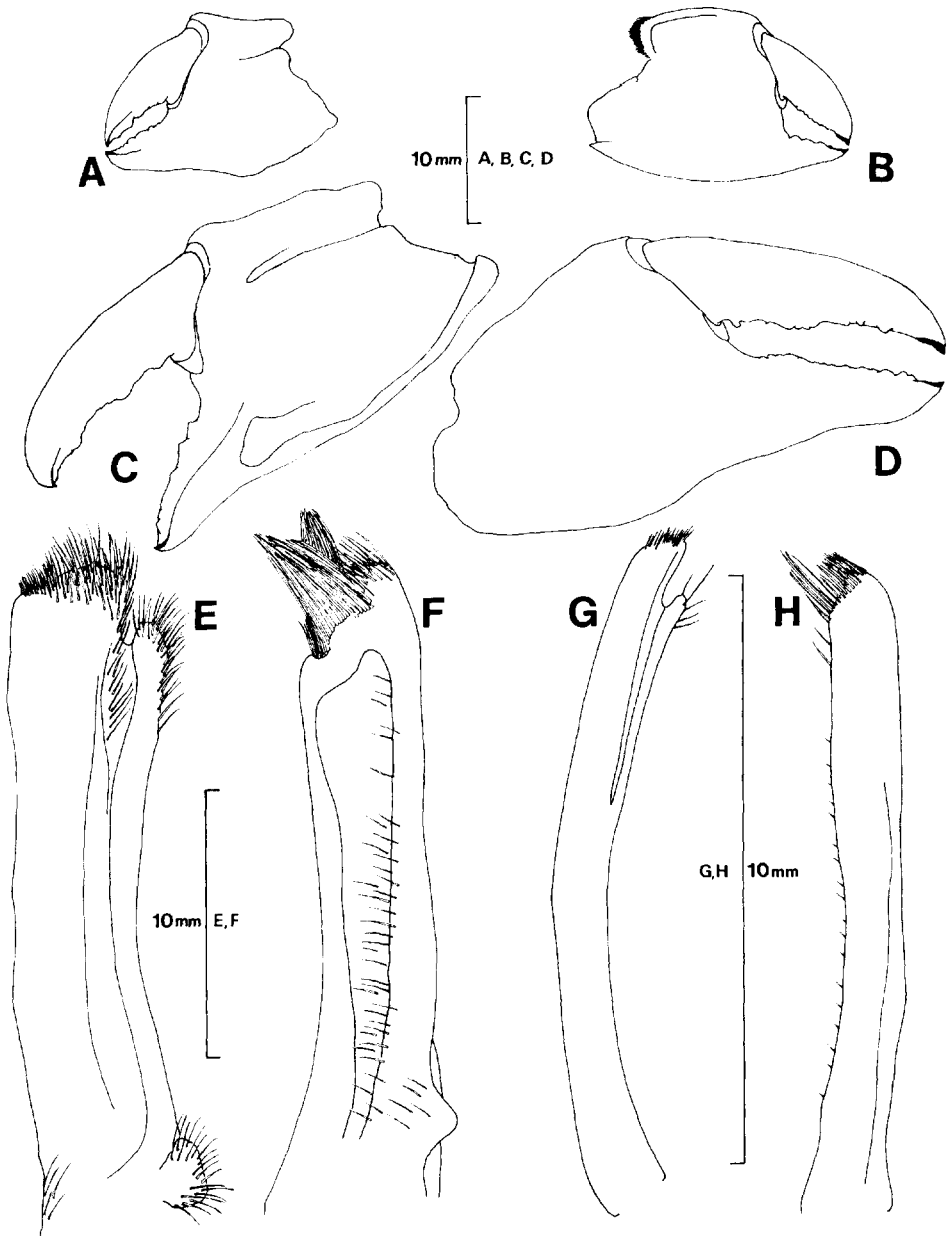

Figure 1. Inner and outer margins of cheliped, *Chasmagnathus georgei* (paratype BM reg. no. 1985: 490 ♂) A & B and *C. convexus* (SMF reg. no. 11727 ♂) C & D respectively. Male gonopods from ventral and dorsal aspect, *C. convexus* E & F and *C. georgei* G & H respectively.

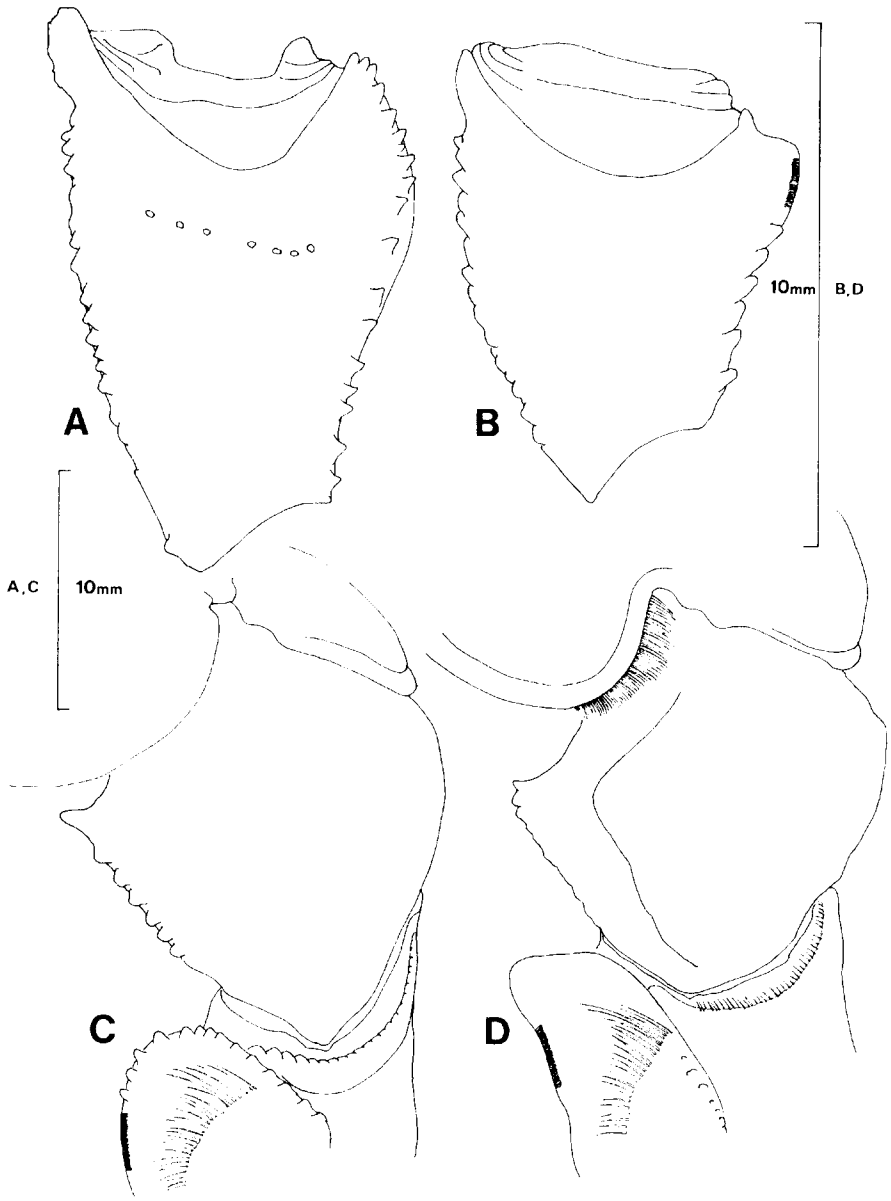

Figure 2. Ventral aspect of cheliped merus, *Chasmagnathus convexus* (SMF reg. no. 11727 ♂) A and *C. georgei* (paratype BM reg. no. 1985: 490 ♂) B. Dorsal aspect of cheliped carpus *C. convexus* C and *C. georgei* D.

Differential diagnosis. *Chasmagnathus georgei* is the second species of this genus recorded from the Indo-pacific. The features separating the two species are listed below (Table 1).

Table 1. A list of characters which facilitate the separation of *Chasmagnathus georgei* from *C. convexus*.

Characters	*C. georgei*	*C. convexus*
Plate 1		
Dorsal surface of carapace	smooth	hirsute
mat of setae near anterio-lateral teeth	present	absent
cardiac & mesogastric region demarcated	faintly	strongly
Plate 2		
medial furrow on carapace	shallow & naked	deep with margin delimited by setae
Plate 3		
lateral tubercles on suborbital ridge	not furrowed	furrowed
outer dorsal margin of cheliped propodus	Figs. 1B & 2D with row of fine setae	Figs. 1D & 2C without setae
fine ridge on outer dorsal surface of cheliped propodus	present	absent
deep furrows on inner ventral margin of cheliped propodus	Fig 1A absent	Fig. 1C present
pronounced tubercles of inner dorsal margin of cheliped carpus	Fig. 2D absent	Fig. 2C present
fine ridge on dorsal surface of cheliped carpus	present	absent
cresentic row of tubercles on ventral surface of cheliped merus	Fig. 2B absent	Fig. 2A present
tubercles on venral inner margin of cheliped merus	proximal only Figs. 1G & H	along entire margin Figs. 1E & F
male pleopods	long & slender, dorsal surface not setosed	stout & setosed on dorsal surface

Etymology. This species is named in honour of the collectors, David & Jennifer George.

REMARKS

Miers (1886: 268–9) identified two specimens collected by HMS *Challenger*, (a small male from Samboangan, Philippine Islands and an adult female from Kandava, Fiji Island) as *Helice latreillei* Milne Edwards var. He compared this material (see footnote p. 269) with a male determined as *H. latreillei* in the BM (reg. no. 395*a*) and was correct in suggesting that the Kandava female represented a new species of *Chasmagnathus* (named here as *C. georgei*). Re-examination of the remaining *Challenger* specimen (Turkay pers. comm.) and the BM 395*a* specimen has shown that both these males belong to *Helice leachi* Hess, 1865. Turkay (pers. comm.) has examined the type series of *Helice latreillii* (Milne Edwards, 1837), which contains two species, *H. tridens* de Haan, 1835 (the locality 'Mauritius' being erroneous for this specimen, it must have come from China or Japan) and *H. leachi.* No opinion can be given on the true identity of the *Helice latreilli* material cited by De Man (1896: 343 & 1898, plate 31, Figs. 41*a* & 41*b*) as these specimens are no longer extant having been destroyed at the end of the Second War (Tiefenbacher pers. comm.).

Acknowledgements. I would like to thank David & Jennifer George for the opportunity to examine their collection of Brachyura from the Semporna Marine Park Survey, Dr. Michael Turkay (Natur-Museum Senchenberg) for his help and guidance with *Helice/ Chasmagnathus* problems, Drs Ray Ingle & Roger Lincoln for theirs comments on my draft manuscript, Dr L. Tiefenbacher of the Zoologische Staatssammlung, Munchen for information on De Man's Atjeh, Sumatra material, and Phil Crabb, (BM (NH) Photo Unit) for the photographs reproduced in this paper.

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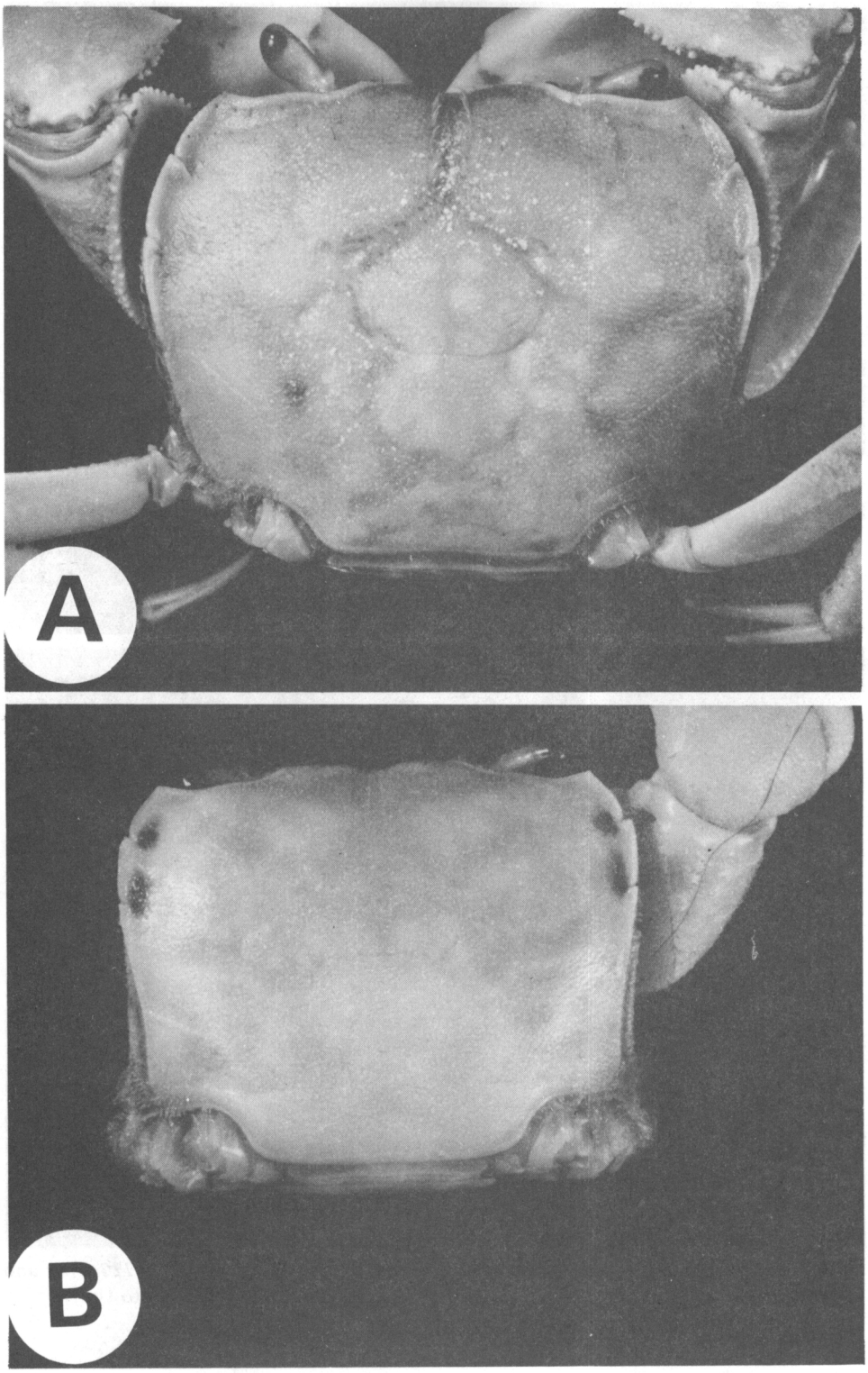

Plate 1. Dorsal view of carapace, *Chasmagnathus convexus* (SMF reg. no. 11727 ♂) A and *C. georgei* (paratype BM reg. no. 1985: 490 ♂) B. (Phil Crabb BM (NH) photo Unit).

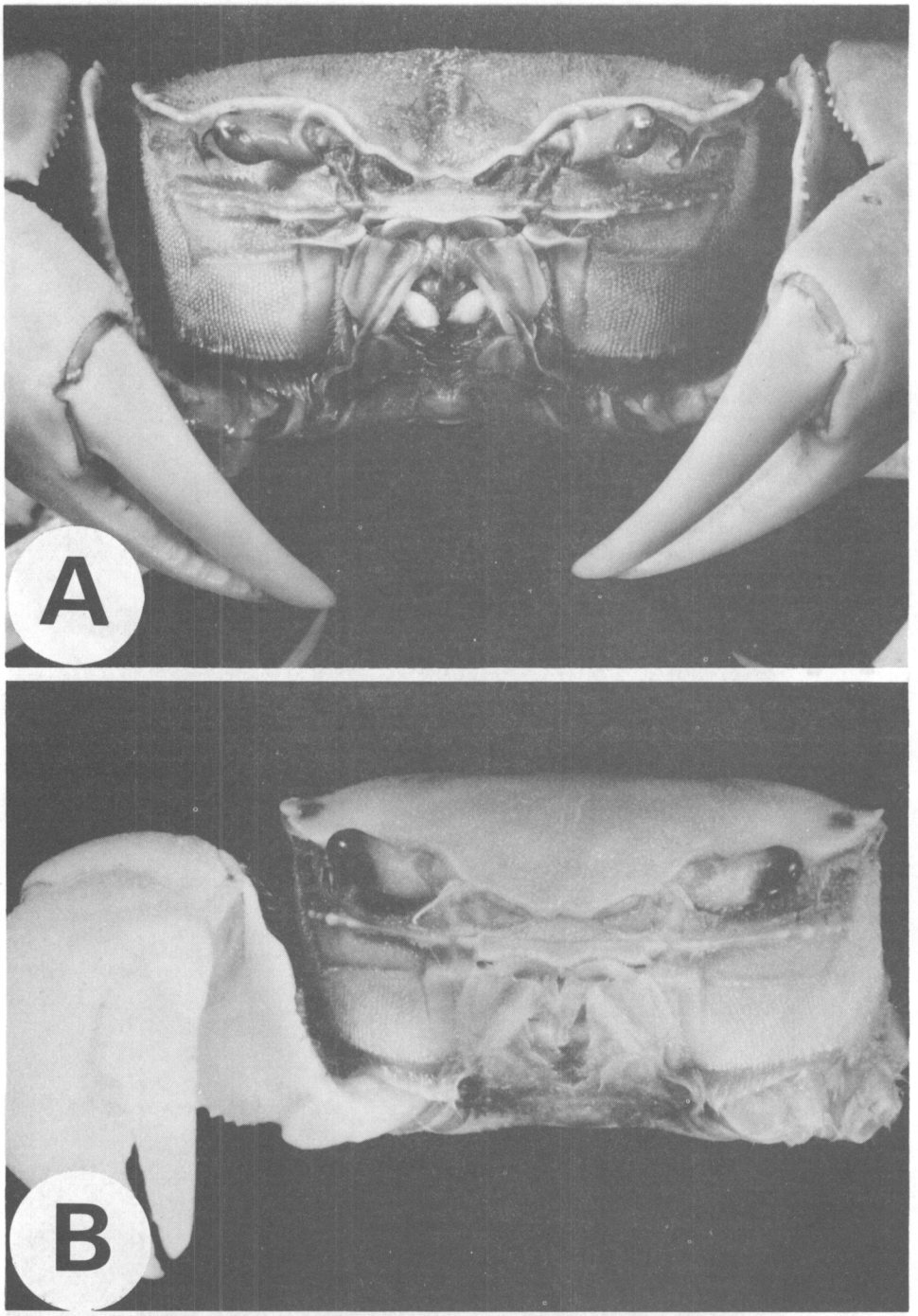

Plate 2. Frontal aspect of *Chasmagnathus convexus* (SMF reg. no. 11727 ♂) A and *C. georgei* (paratype BM reg. no. 1985: 490 ♂) B. (Phil Crabb BM (NH) Photo Unit).

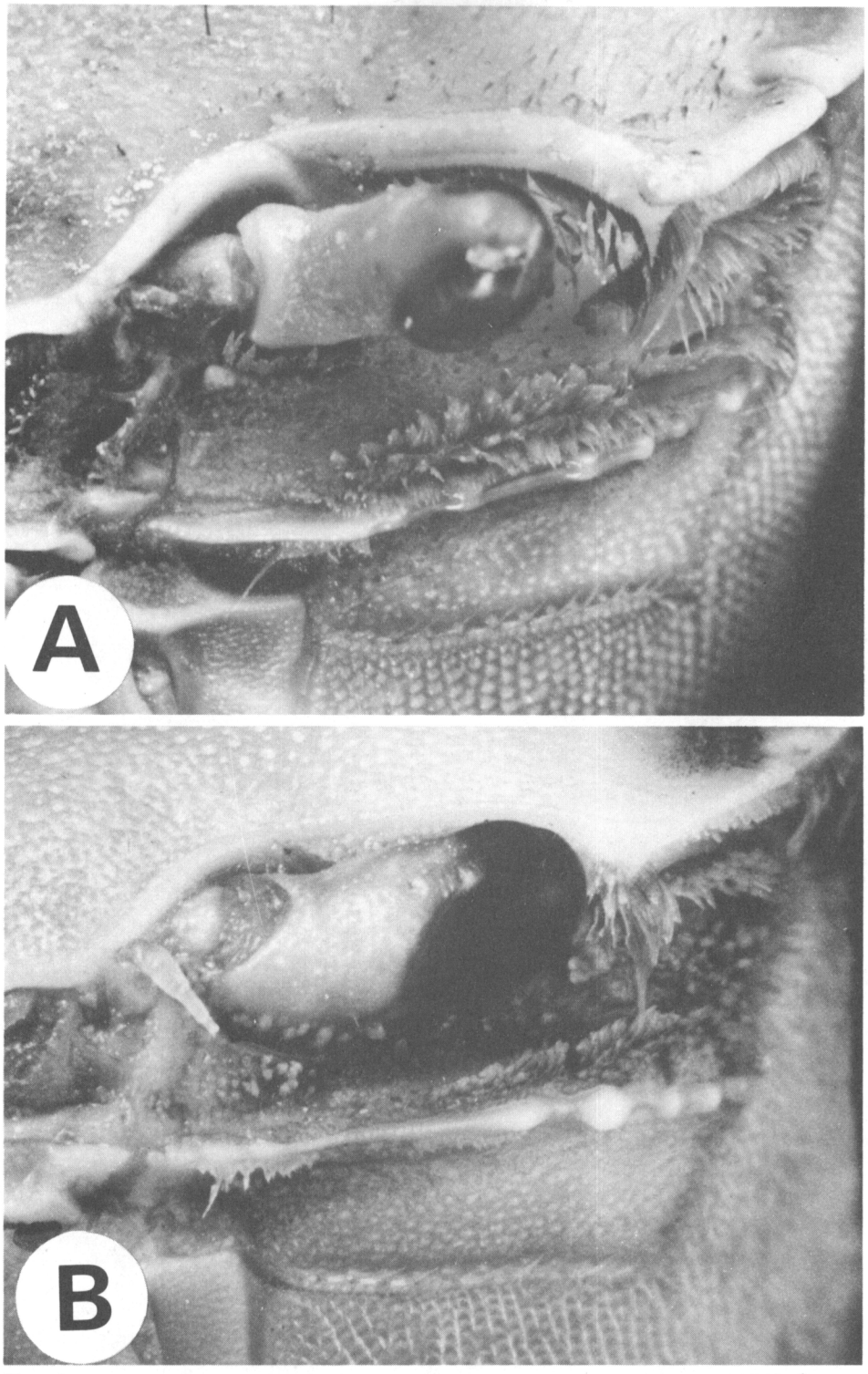

Plate 3. Sub orbital ridge of *Chasmagnathus convexus* (SMF reg. no. 11727 ♂) A and *C. georgei* (paratype BM reg. no. 1985: 490 ♂) B. (Phil Crabb BM (NH) Photo Unit).