

THE VARIICORNIS-GROUP OF *Gryon* HALIDAY
(HYMENOPTERA: SCELIONIDAE)

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Abstract

Can Ent. 111: 791-805 (1979)

The variicornis-group of *Gryon* is proposed for 15 Neotropical species of which 12 are new to science: *atruensis* (Ashmead) / Grenada & Trinidad, W.I., Brazil, Colombia; *culturatus* n. sp. / Brazil; *duvid* n. sp. / Panama; *gohath* n. sp. / Panama; *helavai* n. sp. / Panama; *hercules* n. sp. / Brazil; *mosoni* n. sp. / Trinidad, W.I.; *neotropicus* n. sp. / Colombia, Ecuador; *peckorum* n. sp. / Ecuador; *rothi* n. sp. / USA; *scutellatus* n. sp. / Brazil; *vinop* n. sp. / Brazil; *titan* n. sp. / Brazil; *tridentinus* n. sp. / Ecuador; and *variicornis* (Fouts) / Guyana, Panama, Nicaragua, Brazil, Colombia. The systematic position of the group within *Gryon* is discussed.

Gryon is a morphologically polytypic genus comprising many species-groups to which generic or subgeneric names have been applied in the past 140 years. However, as expressed earlier (Masner 1976) the use of species-groups rather than supraspecific names seems preferable. A group of 15 Neotropical species of *Gryon* is classified here in the variicornis-group. Its species are unique in that the head has a strong carina here called the *hyperoccipital carina* (Fig. 1b, d; Fig. 2b, d) which runs continuously from one eye to the other, distinctly *behind* the lateral ocelli and merges with the outer orbit of the eye without joining the occipital carina (Fig. 1b, d) which is situated rather low on the strongly concave occiput. Consequently, the hyperoccipital carina does not continue towards the base of the mandibles but instead forms the sharp outer orbit of the eye (Fig. 1b, d) which eventually extends into the malar groove. The *occipital carina* is somewhat less distinct at the meson in some species (Fig. 2b) but becomes sharp as it approaches the base of the mandibles. The *hypostomal carina* (Fig. 1b, d) is weak and joins the occipital carina before the latter reaches the base of the mandibles (Fig. 2b, d). Consequently, the head is curiously shaped, looking like a lens which is convex on the frontal side and concave on the occipital side ("uhrglassförmig" of German authors) (Fig. 1a, c). Because of this peculiar shape, the head is very close to the mesosoma and, unless detached, the structure of the occiput is difficult to observe. The cephalic characters mentioned here characterize the variicornis-group and distinguish it from several species-groups of *Gryon* in which the vertex is more or less sharply carinate. In these groups, however, the hyperoccipital carina either joins the occipital carina (e.g. *G. seychellensis* (Kieff.)), or does not form the outer orbit of the eye but extends down to the base of the mandibles (e.g. *G. myrmecophilus* (Ashm.)), or does not meet the occipital carina but is interrupted behind the lateral ocelli thus not meeting the outer orbit of the eye (e.g. *G. insularis* (Ashm.)).

Before this study was begun I examined specimens of *Gryon* from virtually all parts of the world and discovered that the variicornis-group established in this paper is strictly peculiar to the tropics of the New World. The only species extending to southern Arizona (*G. rothi*) is also considered to be of neotropical origin. Some species of the variicornis-group (e.g. *G. hercules*, *G. titan*) represent the largest species in *Gryon*. Accordingly, the host eggs are expected to also be large (? Coreidae, Pentatomidae); however, the only two host records in the variicornis-group point to an unknown heteropteron.

The variicornis-group

All 15 species described in this paper share the following characters in common, differing from each other only in a few details emphasized in the key. Only the latter characters are mentioned in the descriptions of the species.

General habitus short, plump but highly arched; general sculpture coarse rugose; head strongly transverse, 2.5-4 times as wide as long; frontal depression very shallow, almost non-existent, indicated by sculpture rather than by imprint, its sculpture consisting of a chain of transverse polygons above antennal insertion (not developed in *helavai*); clypeus small, receding and unarmed, labrum consequently exposed and well visible; mandibles small, narrow, bidentate (tridentate in *tridentatus*), upper tooth considerably larger than lower tooth; malar groove broad and deep; palpal formula 2-2, apical segment of labial palpi minute, wart-like; eye glabrous; lateral ocelli distant from inner orbits by one diameter or less; sharp, blade-like hyperoccipital carina runs continuously behind lateral ocelli from one eye orbit to the other, joining the latter but not the occipital carina which is situated much lower on concave wall of occiput; occipital carina partly obsolete medially, blade like and carinate at sides before joining base of mandibles; hypostomal carina weak, joining occipital carina above its junction with mandibular base; occiput falling abruptly from hyperoccipital carina, more or less concave, giving head the appearance of a lens which is convex anteriorly and concave posteriorly; mesosoma short and highly arched dorsally (lateral aspect), sternal part extremely reduced; mesosternum reduced to blade-like acetabular carina projecting between fore and middle coxae; fore and middle coxae almost contiguous, gap between them not greater than that between middle and hind coxae (lateral view); metanotum distinctly bulged medially; marginalis distinctly shorter than stigmalis (except in *tridentatus*), postmarginalis long, longer than stigmalis; metasoma short, only slightly longer than wide; T1 broadly narrow, T2 usually 1.3 times as long as T3, in a few species longer but not more than twice T3.

MORPHOLOGICAL TERMS AND ABBREVIATIONS

The terms and abbreviations used in this paper are those proposed by Masner (1976). The following terms and abbreviations are newly proposed:

Hyperoccipital carina (hyo, Figs. 1b, d; 2b, d) — see Introduction.

Interorbital space (ios, Fig. 2a) — the shortest distance on frons between the inner orbits.

Subocular space (ss, Fig. 2a) — space between mandibular condyle and lowermost point of an eye.

Eye height (eh, Fig. 2a) — vertical axis of an eye.

The measurements of the above listed distances were obtained by tilting the specimen individually for each one of them, whereby the maximum of convexity of the surface was taken into consideration.

KEY TO SPECIES OF THE VARIICORNIS-GROUP OF *Gryon*

- (1) Fore wing in basal third or half with dark streak running parallel to lower margin of wing; hyperoccipital carina somewhat dull at meson, undulate under high magnification (Fig. 1b); sculpture of frons, particularly within ocellar triangle remarkably mat and dense; occipital carina obsolete medially (Fig. 2b); 0.9-1.3 mm; Trinidad, Brazil, Colombia (1) *G. atrocotalis* Ashmead ♀ ♂
- Fore wing clear or generally tinted, rarely with darker spots or very short basal streak not surpassing one seventh of wing length; hyperoccipital carina entirely blade-like, edgy even under high magnification (e.g. Fig. 1d); sculpture of frons including ocellar triangle remarkably shiny, with wider polygons; occipital carina complete (as in Fig. 2d) 2

- (2) Interorbital space longer (1.1–1.3 times) than eye height; usually smaller species, 1.1–1.5 mm (in *goliath* 1.8 mm) 3
 - Interorbital space equal to or shorter (about 0.8) than eye height; usually larger species, 1.6–2.6 mm 7
- (3) Mandibles tridentate; T2 fully twice as long as T3; *stigmalis* only slightly longer than *marginalis* (11:9); 1.1 mm; Ecuador (2) *G. tridentatus* n. sp. ♀
 - Mandible bidentate; T2 only 1.3 times as long as T3; *stigmalis* about twice as long as *marginalis* 4
- (4) Fore wings virtually clear basally, with no streak or infuscation; antennal clava in female almost parallel-sided; 1.5 mm; Arizona (4) *G. rothi* n. sp. ♀
 - Fore wings with short (about 1/7 of wing length) but distinct dark streak parallel with lower margin of wing; antennal clava in female distinctly spindle-like 5
- (5) Frons without distinct median chain of transverse polygons above antennal insertion; coxae chestnut brown; 1.1 mm; Panama (3) *G. helvay* n. sp. ♀
 - Frons with well defined chain of transverse polygons above antennal insertion; coxae ebony black 6
- (6) Eyes relatively smaller, only 1.2 times longer than subocular space; interorbital space wider, 1.24 times as long as eye height; 1.8 mm; Panama (6) *G. goliath* n. sp. ♀
 - Eyes relatively larger, 1.61 times longer than subocular space; interorbital space narrower, only 1.08 times as long as eye height; 1.2 mm; Panama (5) *G. david* n. sp. ♀ ♂
- (7) Hind and middle coxae bright yellow, concolorous with their legs; female A2>A3; interorbital space distinctly shorter (0.8) than eye height; occiput predominantly smooth; 2.5 mm; Brazil (11) *G. hercules* n. sp. ♀
 - All coxae darker, dark brown or black 8
- (8) Frons below median ocellus with large smooth mirror-like field margined by keels on all sides and a chain of polygons below the field; posterolateral corners of T3–T5 distinctly spinose; female antennae black except for lighter radicle and extreme base of scape, antennal club in female slender (as in *variicornis*); lateral ocellus distant from inner orbit by more than one diameter; female A2=A3; 2.1 mm; Brazil (13) *G. sinop* n. sp. ♀ ♂
 - Frons under median ocellus without a particularly large smooth field and with only a vertical chain of transverse polygons; posterolateral corners of T3–T5 not spinose; antennae not entirely black, A1–A7 sometimes distinctly lighter than club; lateral ocellus distant from inner orbit by at most one diameter, usually by much less 9
- (9) Coxae and femora concolorous, dark chestnut brown or almost black; occiput predominantly smooth, mirror-like shining (difficult to observe if head is tilted towards mesosoma) 10
 - Coxae and femora distinctly discolored, coxae ebony black or dark brown, much darker than their legs; occiput predominantly coriaceous, relatively mat (difficult to observe if head is tilted towards mesosoma) 11
- (10) T3 as long as T2 measured at meson, with irregular rugose sculpture particularly in posterior half; spur on hind tibia strong and curved, as long as second tarsal segment of hind tarsi; coxae, femora, and most of scape ebony black; no infuscation below marginal vein; 2 mm; Ecuador (14) *G. peckorum* n. sp. ♀
 - T3 distinctly shorter than T2 measured at meson, longitudinally rugose throughout; spur on hind tibia short and straight, shorter than second tarsal segment of hind tarsi; coxae, femora and most of scape chestnut brown; distinct infuscation immediately below marginal vein; 1.9 mm; Colombia, Ecuador (15) *G. neotropicus* n. sp. ♀
- (11) Female antennae distinctly varicolored, A1–A7 golden yellow in contrast to dark clava; clava slender, i.e. A8–A12 not appreciably incrassate, A8 almost square; male antennae uniformly golden yellow; interorbital space equal to eye height (Fig. 2c); female A2 and A3 almost equal in length; 1.8–2.1 mm; Guyana, Panama, Nicaragua, Brazil, Colombia (12) *G. variicornis* (Fouts) ♀ ♂

- Female antennae not distinctly varicolored; however, A1-A7 often lighter than clav (i.e. A8-A12) which is conspicuously incrassate, A8 distinctly transverse; male antennae darker, at least reddish brown 12
- (12) Scutellum in profile not arched, i.e. sloping straight from scuto-scutellar suture towards metanotum; interorbital space equal to eye height, 1.6 mm; Brazil (9) *G. scutellatus* n. sp. ♀
- Scutellum in profile arched, pillow-like between scuto-scutellar suture and metanotum; interorbital space on frons shorter than eye height 13
- (13) Larger species, 2.6 mm; Brazil (10) *G. titan* n. sp. ♀
- Smaller species, 1.6-1.7 mm 14
- (14) Postmarginalis 1.7-1.9 times as long as stigmalis (♀♂); eye height in females 1.2 times greater than interorbital space; metasoma in females 1.2 times longer than wide; 1.7 mm; Trinidad (8) *G. masoni* n. sp. ♀♂
- Postmarginalis at most 1.3 times longer than stigmalis (♀♂); eye height in females about 1.3 times greater than interorbital space; metasoma in females only inconspicuously longer than wide; 1.5-1.6 mm; Brazil (7) *G. cultratus* n. sp. ♀♂

1. *Gryon atrocoxalis* (Ashmead)

Figs. 1a, b; 2a, b

1895. *Hadronotus atrocoxalis* Ashmead, Proc. zool. Soc. Lond., p. 799.

1926. *Hadronotus atrocoxalis*: Kieffer, Das Tierreich 48: 466.

1965. *Gryon atrocoxalis*: Masner, Bull. Brit. Mus., Suppl. 1: 74.

Female. Length 1.3 mm. Black; radicle and scape bright orange-yellow, A2-A7 light brown dorsally, almost yellow ventrally, A8-A12 dark brown dorsally, almost yellow ventrally (along sensory cupulae); legs bright orange-yellow except for dark brown coxae; mandibles and tegulae light brown; fore wings in basal 1/3 with dark streak running along the lower margin, hind wings infuscate at very base. Head less transverse than in most species, only 2.7 times as wide as long; frontal depression almost non-existent, indicated more or less by transverse rugae meeting the median keel above the antennal insertion; dorsal arched carina absent; frons along inner orbits, vertex, and temples rugoso-reticulate mat, less shining than in other species; lateral ocelli distant from inner orbits by slightly less than one diameter; hyperoccipital carina somewhat dull at meson, undulate (high magnification), less blade-like than in other species; occiput below hyperoccipital carina rough-coriaceous, sculpture finest towards the foramen; occipital carina completely obsolete medially, well indicated at sides; interorbital space about equal to eye height; A2 distinctly longer than A3 (9:6), clava strong, A8 transverse (4:7).

Mesoscutum and scutellum with same sculpture as vertex; metanotal bulge wide and short.

T1 costate, extremely transverse, fully 5 times as wide as long; T2 longitudinally rugulose anteromedially, becoming rugoso-reticulate in posterior half at meson, twice as long as T3; the latter and the following tergites with gradually finer reticulation.

Male (hitherto unknown). Differs from female only in structure of antennae; flagellomeres short, A4-A11 slightly transverse, A12 clongate (7:4); radicle and scape bright orange-yellow, A3-A12 uniformly light brown.

MATERIAL EXAMINED. 1 ♀ (holotype, BMNH), Mount Gay Est. (Leeward side), Grenada, W.I., H.H. Smith, 33, BMNH type label, W. Indies 99-331, *Hadronotus atrocoxalis* Ashm. ♀ type (Ashmead's handwriting); 34 ♀♂, Trinidad W.I., Curepe, Sta. Margarita, Circular Road, in yellow pan traps, all year round in 1974-1975 (CNC); 2 ♀♀, Brazil, Pernambuco, Caruaru, Malaise trap, May 1972, M. Alvarenga (CNC); 1 ♀, Brazil, Guanabara, Represa Rio Grande, September 1972, Malaise trap, M. Alvarenga (CNC); 1 ♀, Colombia, Magdalena, 11°10'N & 74°8'W, 800 m, April 26-30 1973, J. Helava (CNC).

DISTRIBUTION. Apparently a widely distributed species known so far from the Caribbean (Grenada, Trinidad), Brazil, and Colombia.

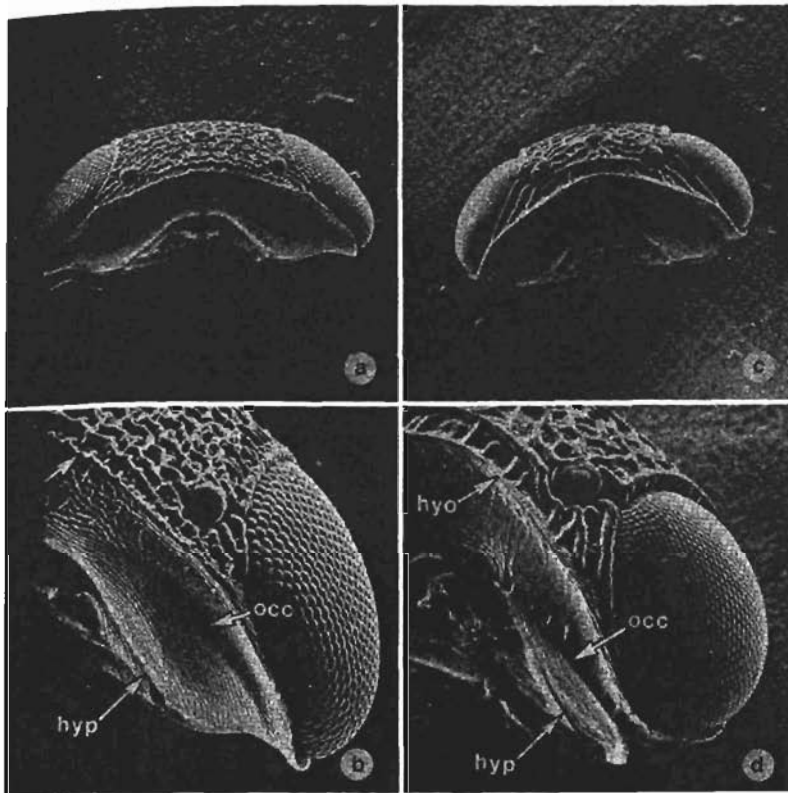


FIG. 1 (SEM, gold-coated, 20 kv). *G. atrocotalis* (Ashmead): a, head 222 \times ; b, head 473 \times . *G. variicornis* (Fouts): c, head 133 \times ; d, head 264 \times . **hyo**, hyperoccipital carina; **hyp**, hypostomal carina; **occ**, occipital carina.

BIOLOGY. Unknown; however, the high occurrence in yellow pan traps (Trinidad) indicates that the host may be a terrestrial heteropteron.

VARIABILITY. Specimens vary in size from 0.9 to 1.3 mm. The dark streak in fore wings may be less distinct in some specimens; however, the base of the wing is always appreciably darkened.

REMARKS. This species is unique in the *variicornis*-group because of the infuscated wing bases, as well as the rather mat sculpture of the head and mesosoma and the weak development of the hyperoccipital carina in its middle part. *G. atrocotalis* seems to be closer to the four smaller species in the group, viz. *dauid*, *helavai*, *rothi*, and *tridentatus*, than to those clustered around *cultratus*.

2. *Gryon tridentatus* n. sp.

Female. Length 1.1 mm. Black; radicle, scape, and following 6 segments orange-yellow, scape somewhat darker in the middle, coxae and femora (except for extreme apices) dark brown, tibiae and tarsi orange-yellow; wings clear, but with short darker streak basally.

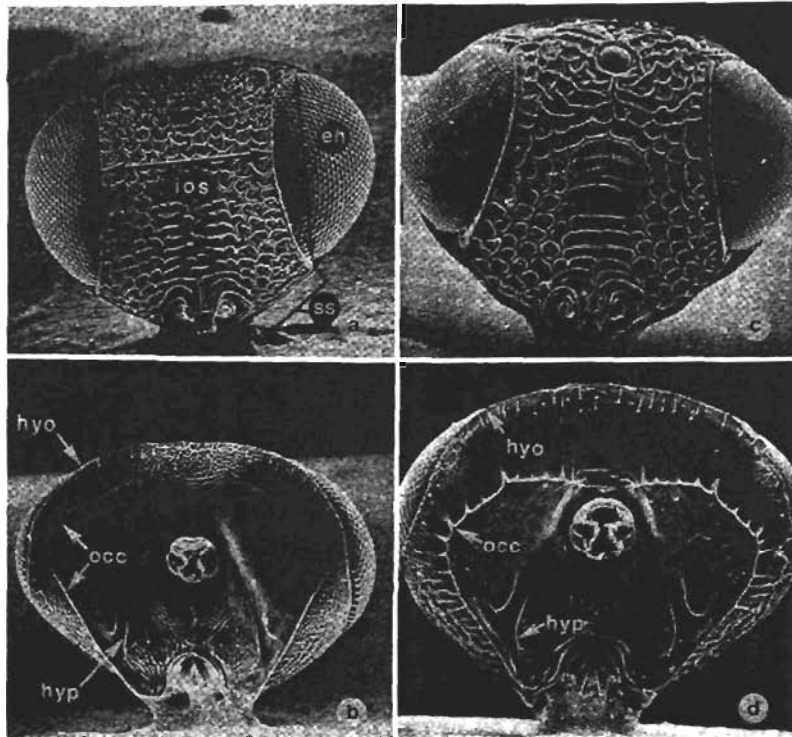


FIG. 2 (SEM, gold-coated, 20 kv). *G. atrocoxalis* (Ashmead): a, face 309 \times ; b, rear 318 \times . *G. varicornis* (Fouts): c, face 182 \times ; d, rear 191 \times . eh, eye height; ios, interorbital space; ss, subocular space.

Head almost 4 times as wide as long; frontal depression very shallow but remarkably well indicated by both lateral and dorsal keels, with transverse polygons divided in middle by keel running up from antennal insertion; frons and vertex highly shining, with large irregular polygons, finer microsculpture on temples; lateral ocelli distant from inner orbits by one diameter; hyperoccipital carina blade-like, complete; occiput below hyperoccipital carina appears smooth and shining; occipital carina unusually high on occiput but not touching hyperoccipital carina; malar groove deep and broad; mandibles narrowly tapered apically, with 3 small teeth, the upper the largest; interorbital space distinctly larger than eye height (39:32); A2 slightly longer than A3 (7:6); clava moderately strong, A8 transverse (5:7).

Mesoscutum with polygons similar to those on frons and vertex; marginal vein only slightly shorter than stigmal vein (9:11), not, however, appearing to touch the extreme margin of wing; postmarginalis rather faint but longer than stigmalis.

T1 strongly transverse, 5 times as wide as long, longitudinally costate, particularly at meson; T2 fully twice as long as T3, with almost no costae at base but generally rough-reticulate, polygons much coarser at meson than at sides; T3 with much finer reticulation and a smooth band along posterior margin; following tergites almost smooth and with some fine punctation only.

Male. Unknown.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15702), Ecuador, Pichincha, 16 km SE Santo Domingo, Tinalandia, 680 m, June 15-30 1975. Malaise trap (S. & J. Peck).

DISTRIBUTION. Ecuador.

BIOLOGY. Unknown.

REMARKS. This tiny species is unique by the tridentate mandibles, elongate marginalis, and very large T2.

3. *Gryon helavai* n. sp.

Female. Length 1.1 mm. Black; color of appendages similar to *tridentatus*; however, A2-A7 light brown, much of femora distally pale; wings generally tinted and with a short streak basally but not as long as in *atrocoxalis*.

Head 3 times as wide as long; frontal depression virtually absent without specialized sculpture (transverse polygons) above antennal insertion; frons and vertex shining, with irregular large polygons; lateral ocelli distant from inner orbits by one diameter; hyperoccipital carina complete but less blade-like than in *tridentatus*; occiput below hyperoccipital carina finely reticulate; malar groove less incised than in *tridentatus*; interorbital space distinctly larger than eye height (36:29); A2 distinctly longer than A3 (10:6); clava moderately strong, A8 transverse (5:7).

Mesoscutum with same sculpture as on frons and vertex; metanotal bulge rather small and not too prominent; stigmatis twice longer than marginalis; postmarginalis more than twice as long as stigmatis.

T1 strongly transverse, 5 times as wide as long, longitudinally costate; T2 less than 1.5 times as long as T3, longitudinally rugose at meson, rugoso-reticulate at sides; T3 finely rugoso-punctate.

Male. Unknown.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15694), Panama, Cerro Campana (8°40'N & 19°50'W), 850 m, montane rain forest, Malaise trap, May 7-14 1973, J. Helava.

DISTRIBUTION. Panama.

BIOLOGY. Unknown.

REMARKS. The absence of the frontal depression, slight tint of wings, and the longitudinally rugose T2 are recognition characters of this tiny species. It is my pleasure to name this handsome species after its collector, Mr. Jussi Helava, from Ottawa.

4. *Gryon rothi* n. sp.

Female. Length 1.5 mm. Black; radicle, scape and legs (except for coxae and fore tibiae) bright orange-yellow; antenna brown, clava only slightly darker than A2-A7; wings perfectly clear.

Head less than 3 times as wide as long; frontal depression very shallow and relatively short, consisting of transverse polygons semi-bisected by a middle keel and closed by irregular lateral and upper keels; frons and vertex rugoso-reticulate, shining, polygons rather large; lateral ocelli distant from inner margins by one diameter; hyperoccipital carina blade-like; occiput below hyperoccipital carina finely coriaceous; malar groove broad but rather shallow; interorbital space unusually wide, much larger than eye height (41:30); A2 longer than A3 (10:6), clava rather slender, not spindle-like, A8 almost square.

Mesoscutum in anterior 3/4 with polygons similar to those on frons, with a zone of longitudinal rugae in posterior 1/4; scutellum with polygons similar to those in anterior part of mesoscutum; metanotal bulge wide but not too prominent; stigmatis more than twice longer than marginalis, postmarginalis rather pale, less than twice as long as stigmatis.

T1 strongly transverse, 5 times as wide as long, longitudinally costate; T2 only 1.3 times as long as T3, irregularly longitudinally rugoso-reticulate at meson, reticulate at sides; T3 and following tergites with gradually finer rugoso-reticulate sculpture.

Male. Unknown.

MATERIAL EXAMINED. 1 ♀ holotype (American Museum of Natural History, New York), Arizona, Cochise Co., 8 km W Portal, South West Research Station, 1650 m, October 21 1964, V. Roth.

DISTRIBUTION. Arizona. Although nominally from a Nearctic locality, this species is considered to be the most northern offshoot of a typically Neotropical group. It suggests a proliferation of Neotropical elements into the Sonoran subregion.

BIOLOGY. Unknown.

REMARKS. This species runs conveniently with five species (*atrocoxalis*, *david*, *goliath*, *helavai*, *tridentatus*) into a group with the interorbital space on frons markedly larger than eye height. However, it forms a bridge towards larger species clustered around *variicornis* and particularly *caltratus*. It gives me pleasure to name this species after its collector, Mr. Vincent Roth, who has collected many interesting species in the Sonoran subregion.

5. *Gryon david* n. sp.

Female. Length 1.2 mm. Black; radicle and most of scape yellowish brown; A2-A12 dark brown; coxae ebony black, femora in proximal 3/4 dark brown, with lighter apices; tibiae and tarsi orange-yellow; fore wings with slight tint, with short dark streak near extreme base.

Similar to *rothi* but differs in following. Interorbital space only 1.08 times longer than eye height (37:34); eye height 1.61 times greater than subocular space (34:21); antennal clava stronger, distinctly spindle-like, A8 transverse (5:8); hind coxae smooth, with only minute coriaceous speck right above trochanter (vs. continuous coriaceous strip in *rothi*).

Male. Differs from female only in secondary sexual characters.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15692), Panama, Chiriqui, 2 km W Cerro Punta, 1700 m, May 19 - June 8 1977, Malaise trap (S. & J. Peck and H. Howden); 1 ♂ allotype, with same data as in holotype (CNC); 12 ♀ ♂ paratypes, with same data as in holotype (CNC); 2 ♀ ♀ paratypes, Panama, Chiriqui, 15 km NW Hato del Volcan, 1200 m, May 24-31 1977, Malaise trap (S. & J. Peck and H. Howden) (CNC); 1 ♀ paratype, Panama, Chiriqui, Los Lagunas, May 22 1977, S. & J. Peck (CNC); 1 ♀ paratype, Panama, Chiriqui, Concepcion Volcan, 500-1500 m, June 3 1977, S. & J. Peck (CNC).

DISTRIBUTION. Panama.

BIOLOGY. Unknown.

VARIABILITY. No appreciable differences in size of the body were found among the 16 specimens from four localities. However, in some males legs were considerably lighter, with femora entirely yellowish.

6. *Gryon goliath* n. sp.

Female. Length 1.8 mm. Black; radicle, extreme proximal tip of scape, distal tips of femora, entire tibiae and tarsi yellowish brown; fore wing slightly tinted, with short dark streak near extreme base.

Similar to *david* but differs also in following characters. Frontal depression slightly deeper, more pronounced if viewed from above; eyes relatively shorter, eye height only 1.2 times greater than subocular space (42:35); interorbital space wider, 1.24 times as long as eye height (52:42).

Male. Unknown.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15693). Panama, Chiriqui, 2 km W Cerro Punta, 1700 m, May 19 – June 8 1977, Malaise trap (S. & J. Peck and H. Howden).

DISTRIBUTION. Panama.

BIOLOGY. Unknown.

REMARKS. Closely related to *dauid* from which it differs by smaller eyes and hereby also different cephalic measurements. The striking difference in size between the two species made me choose the name *goliath* for the bulky sympatric member of the biblical couple.

7. *Gryon cultratus* n. sp.

Female. Length 1.6 mm. Black; radicle and scape orange-yellow. A2–A7 light brown, clava dark brown dorsally and dirty yellow ventrally; coxae dark brown to black, femora light brown, tibiae and tarsi concolorous with scape; wings clear though slightly tinted, particularly around base.

Head transverse, 2.7 times as wide as long; frontal depression shallow but distinct from dorsal view, with coarse transverse polygons, not margined laterally nor distinctly dorsally; frons shining, with large irregular polygons, one of them encircling the median ocellus; vertex with similar sculpture as frons but with extremely fine coriaceous microsculpture immediately in front of the hyperoccipital carina and two irregular transverse rugae between the lateral ocelli which are distant from inner orbits by less than their diameter; hyperoccipital carina blade-like, occiput below with fine coriaceous sculpture; malar groove shallow but broad; interorbital space distinctly shorter than eye height (38:50); A2 longer than A3 (10:7); clava short, rather stout, A8 transverse (7:11).

Mesoscutum with polygons finer than on frons, more elongate in diameter; scutellum with polygons roughly rounded, in lateral view scutellum distinctly arched and pillow-like; metanotal bulge quite prominent, slightly notched at meson giving a sub-bidentate appearance; marginalis very short, stigmalis almost 5 times longer than marginalis, postmarginalis rather short, as long as stigmalis.

T1 transverse, slightly less than 5 times as wide as long and longitudinally costate; T2 only 1.3 times as long as T3, longitudinally rugose-reticulate; T3 with some longitudinal elements in anterior 1/2, rugulose posteriorly, the following tergites finely coriaceous.

Male. Essentially like female; A6–A11 slightly transverse.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15691), Brazil, Pernambuco, May 1972, Malaise trap, M. Alvarenga; 1 ♂ allotype (CNC), same data as holotype; paratypes: 1 ♀, same data as holotype (CNC); 2 ♀ ♀, Brazil, Guanabara, Represa Rio Grande, July & August 1972, M. Alvarenga (CNC); 1 ♀, Brazil, M. Gerais, Varginha, February 1972, M. Alvarenga (CNC); 4 ♀ ♀ & 1 ♂, Brazil, M. Grosso, Sinop, October–November, 1974–1976, Malaise trap, M. Alvarenga (CNC); 1 ♀, Brazil, Santa Catarina, Nova Teutonia, July 1971, F. Plaumann (CNC).

DISTRIBUTION. Brazil. *G. cultratus* is probably the most widely spread species of this group, although collected only sporadically.

BIOLOGY. Unknown.

VARIABILITY. The femora are often darker than in the holotype. Total body length is almost constant, 1.6 mm; however, with some males 1.5 mm long. A8 is less transverse (8:10) in some females. Postmarginalis is slightly longer in some individuals than in the holotype (up to 1.35 times).

REMARKS. It is difficult to decide whether the variation may indicate nothing more than the natural variability of *cultratus* or whether sibling species are involved.

G. cultratus differs from *G. titan* markedly by the length (1.6 vs. 2.6 mm) and less distinctly by the stronger and shorter clava.

8. *Gryon masoni* n. sp.

Female. Length 1.7 mm. Black; radicle and proximal 1/4 of scape bright yellow, rest of scape light brown; A2-A12 dark brown; coxae black, rest of legs yellowish brown, fore femora and hind basitarsi darker; wings with slight tint.

Similar to *cultratus* from which it differs as follows. In dorsal view frontal depression appreciably deeper; eyes considerably higher and larger thus leaving interorbital space narrower, with eye height 1.5 times greater than the latter space; eye height 2.6 times greater than subocular space (52:20) (in *cultratus* only 1.95 times, or 47:24); sculpture of mesoscutum in front of scutellum with no longitudinal elements; postmarginalis 1.8 times longer than stigmatis; hind coxae with coriaceous sculpture more pronounced; metasoma slightly elongate, 1.2 times as long as wide.

Male. Differs from female in structure of antennae (similar to males of *cultratus*), in having eyes shorter, eye height only 1.1 times as long as interorbital space, and metasoma as long as wide.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15696), Trinidad, W.I., Simla nr. Arima, 250 m, Nov. 25 - Dec. 3, 1977, Malaise trap (W.R. Mason); 1 ♂ allotype, Trinidad, W.I., Curepe, Sta. Margarita Circular Road, Dec. 8, 1974 - Feb. 2, 1975, pan traps (F.D. Bennett) (CNC); 3 ♀ paratypes, with same data as in holotype (CNC); 2 ♀ paratypes, Trinidad, W.I., Curepe, Nov. 28-30 1977, Malaise trap (W.R. Mason) (CNC); 1 ♀ paratype, Trinidad, W.I., Curepe, Sept. 26 - Oct. 26 1974, pan traps (F.D. Bennett) (CNC).

DISTRIBUTION. Trinidad, W.I.

BIOLOGY. Unknown.

VARIABILITY. Postmarginal vein varies from 1.7 to 1.9 times as long as stigmal vein.

REMARKS. In female sex *masoni* is quite unique among all species of the variicornis-group mainly because of its large eyes. Consequently, the interorbital space is narrowest, the subocular space shortest and the frontal depression relatively deepest among all members of this species group. I have some doubts about the single male assigned here as *masoni*. The differences in the cephalic proportions are too great; however, the male is different from those of *cultratus* in having no longitudinal elements in sculpture of mesoscutum in front of scutellum.

It is my pleasure to name this handsome species after Bill Mason who collected this and other fine species on his vacation trip to Trinidad in winter 1977.

9. *Gryon scutellatus* n. sp.

Female. Length 1.6 mm. Black; radicle, scape and legs yellow with coxae dark brown; A2-A12 dark brown; wings slightly tinted.

Very similar to *cultratus* from which it differs as follows. Frontal depression margined dorsally by arched carina; interorbital space as long as eye height; mesoscutum in front of scuto-scutellar suture without longitudinal rugae; scutellum in profile not pillow-like and arched but sloping (almost straight) from scuto-scutellar suture to metanotum; T1 only 4 times as wide as long; T2 with predominant reticulate rugulosity and without distinct longitudinal elements.

Male. Unknown.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15699), Brazil, Pernambuco, Caruaru, May 1972, M. Alvarenga; paratype 1 ♀, Brazil, M. Grosso, Sinop, February

1976, Malaise trap, O. Roppa (CNC); paratype 1 ♀, Brazil, Para, Tacareacanga, December 1968. M. Alvarenga (CNC).

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

VARIABILITY. No substantial structural or color differences were found among the three specimens.

10. *Gryon titan* n. sp.

Female. Length 2.6 mm. Black; radicle and scape, fore tibiae and tarsi, middle and hind legs (excluding coxae which are black) bright yellow; fore tibiae mostly brown, A2-A7 light brown, clava dark brown dorsally, yellow ventrally; wings clear but with slight darker tint.

Similar to *cultratus* from which it differs as follows. Vertex between median ocellus and hyperoccipital carina with distinctly transverse polygons forming raised wrinkles, particularly between lateral ocelli. Interorbital space distinctly shorter than eye height (58:68). A3 only slightly shorter than A2 (14:16), A4 still elongate (7:5.5), A8 slightly transverse (9:12), clava not particularly strong.

Male. Unknown.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15701), Brazil, Guanabara, Floresta de Tijuca, February 1974, M. Alvarenga.

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

11. *Gryon hercules* n. sp.

Female. Length 2.6 mm. Black; radicle, scape, A2-A7, middle and hind legs including coxae and fore legs (excluding coxae which are brown) bright orange-yellow; antennal clava dark brown with dirty yellow streak ventrally; mandibles, metanotum, and anterior margin of T1 chestnut brown; wing with slightly darker tint.

Similar to *cultratus* from which it differs as follows. Lateral ocelli distant from inner orbits by less than half of their diameter. Antennal clava stronger than in *variicornis*, A8 transverse (9:14). T2 longitudinally rugulose but with more distinct transverse rugae in between, i.e. the longitudinal appearance of sculpture is less distinct than in *cultratus*.

Male. Unknown.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15695), Brazil, Pernambuco, Caruaru, May 1972, M. Alvarenga; paratypes 3 ♀♀, same data as holotype (CNC).

DISTRIBUTION. Brazil.

BIOLOGY. Unknown.

VARIABILITY. None apparent.

REMARKS. This species together with *titan* and *scutellatus* are closely related to *cultratus*; *titan* and *hercules* are large species and *cultratus* and *scutellatus* the smaller species. The size of the body seems to be reasonably constant and serves as a specific character.

12. *Gryon variicornis* (Fouts)

Figs. 1c,d; 2c,d

1925, *Hadronotus variicornis* Fouts, Proc. ent. Soc. Wash. 27: 149.

1968, *Gryon variicornis*: Masner & Muesebeck, Bull. U.S. natn. Mus. 270: 36.

Female (holotype USNM). Length 2mm. Black; radicle, scape and A2-A7 pale yellow, clava dark brown dorsally and at sides but dirty yellow ventrally; coxae black, legs from trochanters to tarsi pale yellow; wings clear without darker tint.

Head transverse, slightly over 3 times wider than long; frontal depression shallow, barely indicated by sculpture of transverse polygons bisected in lower half by a wavy keel extending from antennal insertion, not margined at sides nor above; frons along orbits roughly rugoso-reticulate, with polygons subcircular to irregular, highly shining; sharp irregular carina connecting lateral ocelli (parallel to hyperoccipital carina); lateral ocelli distant from inner orbits by less than a diameter; hyperoccipital carina complete, blade-like; occiput below hyperoccipital carina with narrow band of fine coriaceous sculpture, further below almost smooth; occipital carina situated rather low on occiput, almost complete except for a short interruption at meson, interorbital space equal to eye height; A3 rather elongate, almost as long as A2, A4 and A5 slightly elongate, A8 only slightly transverse (8:9), clava distinctly slender, not as wide as in *cultratus*.

Mesoscutum with large subcircular polygons of rough reticulation, somewhat mat due to dense microsculpture of polygonal ridges; scutellum with similar sculpture but with smaller polygons; metanotal bulge very prominent, deeply but narrowly notched at meson; marginalis, stigmatalis and postmarginalis in ratio 9:20:31.

T1 over 4 times as wide as long, heavily costate longitudinally; T2 only slightly longer than T3, with longitudinal rugulosity anteromedially, otherwise rough reticulate particularly at sides; T3 with sculpture similar to T2 but generally finer, following tergites with sculpture gradually finer.

Male (hitherto unknown). Essentially like female but remarkable for the uniformly golden yellow antennae, A4-A11 slightly transverse.

MATERIAL EXAMINED. 1 ♀ holotype (USNM No. 28498), Guyana (formerly British Guiana), Berbice, Blairmont Plantation, from eggs of hemipteron on bamboo, Aug. 18 1923, H.E. Box; paratypes 2 ♀♀ with same data as holotype (USNM). Other material: 4 ♀♀ & 1 ♂ Nicaragua, with orchid plants intercepted at Miami, Fla. 1960 (USNM); 1 ♀ Panama, Gamboa, Canal Zone, Pipeline Road, July 1967, Malaise trap, W.W. Wirth (CNC); 1 ♀ with cluster of hemipteron eggs, Canal Zone, intercepted at Miami, May 27 1963 (USNM); 1 ♀ Colombia, Magdalena, 11°10'N & 74°8'W, 800 m, April 26-30, 1973, J. Helava (CNC); 1 ♀ Brazil, Guanabara, Represa Rio Grande, August-September 1972, M. Alvarenga (CNC); 1 ♂ as previous specimen but caught August 1972, F.H. Oliveira (CNC); 1 ♀ Brazil, Pernambuco, Caruaru, May 1972, M. Alvarenga (CNC); 1 ♀ Brazil, Bahia, Encruzilhada, 780 m, November 1975, M. Alvarenga (CNC); 1 ♀ as previous specimen but caught at 960 m in November 1975 (CNC); 3 ♀♀ Brazil, M. Grosso, Sinop, November 1975, Malaise trap, M. Alvarenga (CNC).

DISTRIBUTION. Nicaragua, Panama, Colombia, Guyana, Brazil.

BIOLOGY. Two host records give eggs of an unknown Heteroptera.

VARIABILITY. The legs, particularly the front and middle femora, are darker than those of the type.

REMARKS. This is the nominal species of the *variicornis*-group. It is distinct on account of the varicolored antennae and perhaps even more on the slender antennal club which is not spindle-like but rather parallel-sided. Antenna of similar shape occurs in *G. sinop*, but in the latter species it is not varicolored but remarkably dark. Fouts (1925) compared *variicornis* with *G. minimus* (Kieff.) which is an apparent mistake as the latter species belongs to a different group of *Gryon*.

13. *Gryon sinop* n. sp.

Female. Length 2.1 mm. Black; radicle, extreme base of scape, mandibles and anterior half of fore femora light brown; A1-A12 dark brown to black; legs uniformly orange-yellow excluding the coxae which are black; wings clear.

Head transverse, 3.3 times as wide as long; frontal depression shallow but unusually well indicated by lateral and dorsal keels as well as sculpture consisting of several large

transverse polygons above antennal insertion and a large smooth field terminating the row of polygons below the median ocellus; frons along inner orbits with coarse reticular polygons with smooth and shining ridges, vertex with similar polygons but with the dorsal face of ridges with mat microsculpture; two transverse polygons between lateral ocelli, the latter distant from inner orbits by more than one diameter, hyperoccipital carina complete but slightly obscured at very middle because of the deep concavity of occiput; occiput finely coriaceous immediately below hyperoccipital carina, rather rugulose in middle of the latter zone; interorbital space equal to eye height; A3 only slightly shorter than A2 (13.15), A4 elongate (8.5.5), clava slender as in *varicornis*, not spindle-like but subparallel, A8 almost square (8.9).

Mesoscutum coarsely reticulate-rugose, without longitudinal elements in front of scuto-scutellar suture; scutellum with sculpture similar to mesoscutum; metanotum medially with prominent bulge, not notched medially; marginalis, stigmalis and postmarginalis in ratio 5:25:27.

T1 strongly transverse, fully 5 times as wide as long, with a few costae and longitudinal rugae; T2 only 1.2 times as wide as T3, coarsely reticulate-rugose; T3 with similar sculpture as on T2, following tergites with sculpture gradually finer, posterolateral corners of T3-T5 distinctly spinose.

Male. Essentially as female (including spinose posterolateral corners of T3-T6). Scape light brown and flagellum brownish yellow.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15700), Brazil, M. Grosso, Sinop, October 1974, Malaise trap, M. Alvarenga; 1 ♂ allotype, Brazil, S. Paulo, Campinas, March 10 1937, H.F.S. Sauer, ex (?) *Antiteuchus tripterus* F. (Pentatomidae), (USNM).

DISTRIBUTION. Brazil.

BIOLOGY. Probably parasitic in heteropterous eggs.

REMARKS. *G. sinop* is a very distinct species which is unique for its large smooth field on the frontal depression and the spinose posterolateral corners of tergites 3-5 (3-6 in ♂).

14. *Gryon peckorum* n. sp.

Female. Length 2 mm. Black; radicle, extreme base of scape, A12, mandibles, trochanters, apices of femora and tibiae and tarsi light brown; coxae black, femora dark brown to black, tibiae dark brown; scape and following segments dark brown or black, ventral side of clava with dirty yellow streak; wings slightly tinted, veins dark brown, no dark spot under marginal vein.

Head moderately transverse, 2.7 times as wide as long, frontal depression shallow, unmarginated, consisting of transverse polygons and a very short median keel; sculpture of frons and vertex composed of large polygons, the ridges of which are smooth and shining; an irregular, wavy carina connects lateral ocelli which are distant from inner orbits by less than half a diameter; hyperoccipital carina blade-like and sharp, complete, almost flexed upwards; occiput below hyperoccipital carina almost smooth and without sculpture, interorbital space much shorter than eye height (44.56), A3 elongate but smaller than A2 (10.15), A8 transverse (8.12), A12 twice as long as A11; clava strong spindle-like.

Mesoscutum rugoso-reticulate, without longitudinal elements in front of scuto-scutellar suture, scutellum with sculpture similar to that of mesoscutum, however, the polygons are more hexagonal; metanotal bulge prominent, not too distinctly notched medially, marginalis, stigmalis and postmarginalis in ratio 6:23:31, spur on hind tibia strong and curved, as long as tarsomere II of hind tarsus.

T1 only 3.7 times as wide as long, longitudinally costate; T2 as long as T3, with a longitudinal rugulosity which is less distinct at sides; T3 with longitudinal rugulosity in anterior part, irregular rugae in posterior part; T4 still roughly rugose; posterolateral corners of tergites 3-5 not spinose.

Male. Unknown.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15698); Ecuador, Pichincha, 47 km S Sto. Domingo, Rio Palenque Station, 240 m, June 18-30 1975, Malaise trap, Stuart & Jarmila Peck.

DISTRIBUTION. Ecuador.

BIOLOGY. Unknown.

REMARKS. The dark scape and legs place this species close to *sinop* and *neotropicus* rather than to *cultratus*. It is a great pleasure for me to name this handsome species after its collectors, Drs. Stuart & Jarmila Peck (Ottawa), who have collected many proctotrupoids in South America.

15. *Gryon neotropicus* n. sp.

Female. Length 1.9 mm. Black; coxae, femora, middle and hind tibiae and antennae light chestnut brown, rest of legs and the radicle orange-yellow; metanotal bulge, mid-propodeum and mid-T1 reddish brown; wings generally slightly tinted in distal half, darker spot right underneath marginalis.

Head only 2.5 times as wide as long; frontal depression very shallow, with strongly transverse polygons, not particularly margined at sides nor above, median keel short, arising from antennal insertion; frons along inner orbits and vertex with large polygons, interspaces highly shining on frons, mat on vertex due to coriaceous microsculpture; polygons on vertex (around and inside ocellar triangle) more transverse; lateral ocelli distant from inner orbits by less than half a diameter; hyperoccipital carina sharp and complete, almost flexed upwards; occiput below hyperoccipital carina smooth except for extremely narrow coriaceous band along the blade; occiput more visible from above than in other species due to less precipitous slope below hyperoccipital carina; interorbital space distinctly shorter than eye height (36:47); A3 distinctly shorter than A2 (8:12). A8 transverse (8:12). A12 only slightly longer than A11 (10:8), clava strong, spindle-like.

Mesoscutum rugoso-reticulate, polygons distinctly elongate in anterior 3/4 of the sclerite, becoming more subcircular immediately in front of scuto-scutellar suture; scutellum with polygons distinctly subcircular; metanotal bulge strong, only slightly notched medially; marginalis, stigmatis and postmarginalis in ratio 9:20:30; spur on hind tibia short and straight, shorter than tarsomere II of hind tarsi.

T1 almost 4 times as wide as long, longitudinally costate; T2 1.5 times as long as T3, longitudinally rugose throughout, T3 longitudinally rugose except for a smooth band at posterior end; T4 with short rugae basally, otherwise finely coriaceous; posterolateral corners of T3-T5 blunt.

Male. Unknown.

MATERIAL EXAMINED. 1 ♀ holotype (CNC No. 15697), Colombia, Valle, Central Hidroeléctrici del Rio Anchicaya, 400 m, Jan. 29 1972, M. Garcia; paratype 1 ♀, Ecuador, Esmeraldas, 11 km SE San Lorenzo, La Chiquita, 5 m, June 3-10 1976, Malaise trap, S. & J. Peck.

REMARKS. *G. neotropicus* is distinguished from *peckorum* by characters mentioned in the key; furthermore, the marginalis is more elongate and the occiput is less precipitous and hence better visible from above. The sculpture of the mesoscutum is also different in those two species: *peckorum* lacks the distinctly elongate polygons of *neotropicus* in anterior 3/4 of the sclerite.

Acknowledgments

My thanks are due to several distinguished collectors who have significantly contributed in recent years to the Canadian National Collection, namely: Moacir Alvarenga (Rio de Janeiro), F.D. Bennett (CIBC, Trinidad, W.I.), W.R. Mason (BRI, Ottawa) and Stuart & Jarmila Peck (Carleton U., Ottawa). G. Gibson of this

Institute prepared the SEM photographs. I am also grateful to C.C. Loan and I. Smith of this Institute for valuable comments and reading of the manuscript.

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(Received 17 August 1978)