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ARTICLE XV.

ON THE PHALANGIA AND PEDIPALPI COLLECTED BY PROFESSOR ORTON IN WESTERN SOUTH AMERICA, WITH THE DESCRIPTION OF NEW AFRICAN SPECIES, ACCOMPANIED WITH A PLATE.

BY DR. HORATIO C. WOOD, JR.

SUBORDER PHALANGIA.

FAMILY I. PHALANGIDÆ.

GENUS PHALANGIUM.

P. Ortoni, n. sp.

Dorsum black, minutely densely tuberculate. Cephalothorax, with its posterior segment distinctly separated from the others, with a distinct membranous transverse line just posterior to the eye-eminence, and a similar one between it and the abdomen. Eye-eminence moderately prominent, with a row of small spines surmounting each eye. Palpi long, slender, yellowish-gray, without spines, slightly pilose, with a well-pronounced blunt process at the distal end of their antepenultimate article. Mandibles of the same color as the palpi, without spines, their last article attached by its end in the usual manner. Abdomen distinctly segmented posteriorly. Ventral surface with the coxæ, blackish, minutely tuberculate. Coxæ with a series of small tubercles on their margins. Trochanters blackish. Legs very long and slender, roughened by small spines.

Length of body, 0.25". Legs so broken that their length cannot accurately be determined, but the longest are, apparently, nearly 3 inches long. There is in the collection but a single specimen.

Hab. Napo River, Ecuador.

FAMILY II. GONYLEPTIDÆ.

GENUS GONYLEPTES.

Eyes two. Tarsal joints few in number. Last article of mandibles attached by its end.

G. prædo, n. sp.

Dorsum, with the ventral surface, legs, mandibles, and palpi blackish, divided by a deep V-shaped groove, arising at the positions of the third pair of legs, into two dis-

tinct portions; ornamented with numerous tubercles, which, posteriorly, are arranged in very pronounced transverse series, also with 5 pairs of prominent spines; the most anterior pair of the latter are placed on the eye-eminence; the second and third pairs have their bases elevated; the third pair are much the largest. Eye-eminence very broad, tuberculate, bifid above by a pair of diverging spines. Maxillæ smoothish. Palpi nearly as long as the body, rather slender, roughened by numerous tubercles, distally sub-cylindrical; their penultimate article somewhat dilated, with a pair of long, slender, very acute incurved spines, and several smaller ones on each margin; their last article smoothish, dilated, with slender, very acute, prominent incurved spines on its margins. Ventral surface and coxæ of feet roughened with large numbers of tubercles; the posterior coxæ with a small spine on their posterior upper angle. Posterior pair of legs roughly tuberculate proximally; tarsi 8-10 jointed, hairy, the last joint armed with 3 curved claws. (Pl. 24, fig. 5.)

Remarks.—There is in the collection but a single specimen of this species, a female, I believe. All of the legs are broken off except a single hind one.

Length of body, $1\frac{9}{8}$ ''; hind pair of legs, $1\frac{1}{8}$ ''.

G. injucundus, n. sp.

Dorsum dark brown, with somewhat of an olivaceous or ferruginous tint. Cephalothorax provided with a row of 3 small greenish tubercles on each side of its anterior margin, and divided by a curved transverse line into two portions; the anterior of the surfaces thus separated, is elevated up to the position where it is crowned with two rather widely separated cylindrical obtuse spines or processes, upon the exterior side of whose bases the two large eyes are placed; the bases of these processes are rather coarsely tuberculate, and the general posterior slope has a pair of patches of large, somewhat greenish translucent tubercles: the posterior of the surfaces is divided anteriorly by a curved V-shaped line, whose point runs into the first line, so that two small islets of surface are separated, in the centre of each of which is an elevated transparent tubercle, similar to those of the afore-mentioned patches, with some small scattered tubercles around it: posteriorly to the last-mentioned line is a similar transverse one, the surface separated by which has some scattered small tubercles, besides a pair of others smaller though similar to and in the same line with the transparent tubercles above mentioned; the sub-surface posterior to the last-mentioned impressed line, has a very large, prominent pair of divergent robust spines and minute scattered tubercles. Palpi, chestnut brown, very roughly tuberculate. Mandibles, chestnut brown, with a curved, acute, robust, short spine on the upper surface of their penultimate article at the margin of the cephalothorax; their last article robust,

very hairy, attached by its end and bent downwards. Abdominal segments with unequal, obtuse spines or tubercles. Ventral surface and coxæ minutely tuberculate. Feet distally pilose. (Pl. 24, fig. 9.)

Length of body, 0.30" inch. Length of posterior legs, about 1½ inch.

Remarks.—There is but a single specimen in the collection.

Hab. "Between Quito and Napo," Ecuador.

G. spinipalpus, n. sp.

Dorsum a dark, blackish brown. Cephalothorax not generally granulate, provided with a somewhat distinct but here and there obsolete impressed line some distance within and sub-parallel to its margin, which separates a central, oval, elevated part from the more level margin; also divided by a deeply impressed curved line some distance posterior to the eye-eminence and by an obsolete, subparallel line posterior to this; the anterior portion with a pair of widely separated, small, tuberculoid spines; on the posterior surface, anteriorly, a transverse series of similar tubercles or spines, the middle pair of which are, however, much larger; then a second similar, but uniform series; then a pair of very large spines flanked by one or two tubercles, and posterior to these five tubercles in two rows. Eye-eminence oval, broad, transverse, with a largish blunt spine and one or two very small ones surmounting the eyes. Mandibles large, their penultimate joint sub-globose, with a few small, slightly curved, robust, acute, thornlike spines; their last article robust, smooth, with rigid spine-like hairs, attached by its end, but so bent as to hang vertically. Palpi long, rather robust, proximally sub-cylindrical; their trochanters with a few very blunt spinous processes; their penultimate article dilated with five unequal, long, slender, acute spines on elevated bases on the inner margin, and two very long and two very small similar ones on the outer margin; their last article slightly spoon-shaped, with four spines similar to the last on each margin. Abdominal scuta with a row of tuberculoid spines on each; the abdominal segments below tipped with whitish, each with a series of minute granules. Coxæ roughly granulate, the granules often disposed in longitudinal series; the last pair rather small for this genus. Legs granulate, of a lighter color than the body, their tarsal portion very hairy. (Pl. 24, fig. 6.)

Length of body, 0.25"; of first pair of legs, ?; of second ?; of third, 0.9"; of fourth, 1.10".

Remarks.—A single specimen in the collection.

Hab. Ecuador.

G. multimaculatus, n. sp.

Dorsum, glossy black, very minutely tuberculate; just posterior to the eye-eminence, with a broad, transverse, bright-yellow band, the posterior portion of which has a central, broadly triangular extension; all the rest of the surface closely dotted over with minute, roundish, whitish spots, which are, also, although fewer, on the inferior surface and coxæ. Eye-eminence very broad, with numerous, very minute tubercles. Palpi and maxillæ? Coxæ and pectus roughly tuberculate. (Pl. 24, fig. 10.)

Remarks.—There is in the collection but a single, very much mutilated specimen of this species. The body is nearly a third of an inch in length.

The locality label reads: "Napo and Maravon."

GENUS ORTONIA, new genus.

Eyes, two. Last article of the mandibles reniform, attached laterally by its centre. Tarsal joints of second pair of legs very numerous. (Pl. 24, figs. 3 a, 3 b.)

Remarks.—I have dedicated this genus to Prof. Orton as an acknowledgment of the services rendered by him to Science by his arduous and successful journey in South America.

O. bilunata, n. sp.

Cephalothorax reddish-brown, its anterior margin doubly crescentic, with an acute point in the centre, provided with a pair of large sub-elliptical light yellow spots, whose margins, especially the inner, are irregularly waved or crenate, and, anterior to whose centre, in each is a marked puncture or depression; between the posterior ends of these maculae, is a pair of prominent, long, divergent, slender, but rather obtuse, reddish-brown spines; general surface smoothish, with a velvety appearance. Eye-eminence smooth, broad, longitudinally grooved in the centre so as to be almost double, with the eyes placed laterally on its most prominent portions. Distal joint of maxillæ reniform, beautifully areolated, smoothish, the antepenultimate joint sub-globose, with rather prominent spinous processes on it externally. Palpi, with the proximal joint sub-cylindrical, long, and slender; the next joint broad, slightly triangular in section, its edges roughly crenulate, and the penultimate joint broadly dilated, somewhat triangular, thin, and armed with minute, slender spines on its margins, and a pair of larger ones on its distal end; the distal article more cylindrical, with one or more acute spines, against which the movable claw works. Ventral surface of the color of the upper, with the abdominal segments distinctly bordered with a light color. Legs reddish-brown, with some small spines or tubercles;

the first pair with the tarsal joints, eight in number, swollen; the third, with about twelve tarsal joints scarcely swollen. Coxæ smoothish, the last pair not very large. (Pl. 24, fig. 3.)

Length of body, 20"; of first pair of legs, 1.00; of second pair, 2.40"; of third pair, 1.5"; of fourth pair, ?

Remarks.—A single specimen in a bottle containing several species, and labelled "Ecuador, except one from Peru."

O. ferox, n. sp.

Dorsum light reddish-brown, provided on its posterior portion with a very long, slender spine, whose base is somewhat tuberculate, and whose length almost equals that of the dorsum; anterior to this spine is a pair of large umbonations or obtuse elevations, surrounded by a marked groove or furrow, on which are two or three small eye-like tubercles. Eyes very widely separated, each on a pedicle-like eminence. Placed centrally, and a little in front of the eyes, occupying about the position of the usual eye-eminence of the phalugia, is a marked, conical elevation surmounted by two or three eye-like tubercles, and having several similar ones scattered about its base. Distal joint of the maxillæ reniform, laterally attached, presenting a very narrow face or obtuse edge anteriorly. Palpi nearly three times as long as the body, very slender, excepting their two distal joints, which are so flattened as to present a broad, inferior face, and are armed on each of their two edges, the one with five or six long, moderately-robust, curved, very acute spines, the other with about three similar spines and several smaller ones; the movable finger very long, curved, acute, so moving as to play between the rows of marginal spines against the broad surface. Pectus and coxæ with rows of large tubercles. Last pair of legs about an inch and a half long, very slender. (Pl. 24, fig. 8.)

Remarks.—The legs of the only specimen I have seen, are so broken that it is impossible to determine the generic characters. The agreement, however, in general appearance, in the wide separation of the eyes, in the last article of the maxillæ, &c., with *O. bilunata*, have induced me to class the species together. The specimen is labelled: "Napo and Maravon," indicating its having been taken, I suppose, in journeying from one place to the other.

OCTOPHTHALMUS, new genus.

Eyes, four on each side of the eye-eminence. Last article of mandibles attached by its end. Tarsal joints ?

O. marginatus, n. sp.

Cephalothorax dark reddish-brown. Margin provided with a double greenish-gray band (alcoholic specimen), which, posteriorly, involves the whole of the abdominal scutal segments, where it is interrupted by a central band; the surface divided into two portions by a deep transverse groove at the position of the third pair of legs; the anterior surface thus formed smooth; the posterior divided again into three parts by two transverse lines, the anterior of which communicates with the first line by a central longitudinal line, so as to form two little squarish islets of surface, in the centre of which are one or more small tubercles; the surface between the second and third line furnished with several tubercles arranged in a transverse series; posterior to the third line is a pair of very prominent, large spines, whose surface is minutely tuberculate. Eye-eminence double, smooth, low, with four (two light-colored, two blackish) eyes on each side. Maxillæ with the last joint large, areolated, attached by its end. Palpi ?. Ventral surface smoothish. Coxæ minutely roughened. Posterior pair of legs minutely tuberculate on their femora. (Pl. 24, fig. 7.)

Length of body, $\frac{3}{18}$ ''.

SUBORDER PEDIPALPI.

GENUS PHRYNUS.

P. gorgo, n. sp.

Dorsum blackish-chestnut, roughened with minute tubercles. Cephalothorax reniform, truncate anteriorly, with its margin elevated and obsoletely crenulate. Anterior eyes situated on an oval eminence, which is truncated above. Palpi long and slender, with the maxillary process at their base pronounced; their trochanters irregularly triangular, with three more or less distinct faces; on the inferior of these, near its anterior margin, is a more or less distinct obsoletely crenulate ridge, terminating anteriorly in a robust, moderately large spine, and, posteriorly, in a robust, blunt, dark-reddish chestnut, cylindrical process, tipped with a light, reddish-brown; there are two or three other spines on the ridge separating the anterior-superior from the inferior face; the anterior-superior face is separated from the posterior by a more or less pronounced crenulate line: the femoral article sub-cylindrical, sparsely tuberculate; its superior-anterior edge with three large unequal spines on its proximal part, and one or two smaller ones placed more distally; its inferior-anterior edge with four large (two very large), unequal proximal spines, and two smaller, more distal ones: tibial or penultimate article sub-cylindrical, granulate as the last; its anterior-superior margin with three immense distal spines and two very small ones, also with one or two moderate, more proximal ones; its anterior-inferior margin with five unequal spines on its distal

two-thirds, of which the third (counting from behind forwards) is much the largest; its last article sub-cylindrical, with a curved, acute, movable claw, and a pair of basal, curved, very large spines, each with a small spine at its base. Legs roughened with somewhat acute granules. (Pl. 24, fig. 1.)

Length of body, 1.15"; of palpi, 2.5"; of first pair of feet, ?; of second pair, 3.25"; of third pair, 3.75; of fourth pair, 3.50.

Remarks.—This species was, with others in a bottle, labelled: "Peru, except one from Quito," and, as there were two specimens of it, probably came from the former country.

AFRICAN SPECIES.

Phrynus annulatipes, n. sp.

Dorsum, brown, mottled. Cephalothorax broadly reniform, somewhat truncate in front, with a central depression and more or less obsolete radiating lines, roughly granulated. Eye-emergence roundish, black. Abdomen roughly tuberculate, with a longitudinal, central crest, which is not pronounced. Legs light brown, annulate with dark brown; their trochanters and femora, roughened by numerous, bluntish, spinous tubercles, many of which terminate in a rigid hair. Palpi robust; the coxæ roughened with numerous tubercles, their opposing edges with numerous long, slender, hair-like spines, the mandibular process pronounced; trochanters with numerous acute, robust, small, thorn-like spines obscurely arranged in three patches, also armed with three or four similar larger spines; femoral article sub-cylindrical, with a flattened anterior face, everywhere roughened by small, often hair-bearing spines, armed—on the anterior-superior margin with four largish and numerous very small spines, two of the former are close together at the proximal end—on the anterior-inferior margin with five largish spines and numerous very small ones, two of the former on the proximal end; tibial article of similar form and roughness with the last; the superior anterior margin with numerous very small, and one or two rather small spines, and a pair of very large tuberculate spines confluent at their bases, on its distal end; the anterior-inferior margin, with numerous very small spines and four small spines, the most distal and largest of which is on the end of the article; last article somewhat cylindrical-conical, roughened as the last, with a pair of large spines directed forward, and a smaller, robust spine at the base of the upper of these directed backwards. Mandibles tuberculate on their upper surface. Ventral surface smoothish. Ligular process bifid. (Pl. 24, fig. 2.)

Length of body, 0.66"; of palpi, 1."; of first pair of feet, 3.6"; of second pair, 1.4"; of third pair, 1.55"; of fourth pair, 1.6".

Remarks.—The specimens on which this description is founded, were collected in the Zulu country, South Africa, by a missionary, Dr. A. Grout, and presented to the Academy of Natural Sciences, in whose collection they now are.

Buthus Groutii, n. sp.

Cephalothorax very smooth, blackish, with a marked, longitudinal, light yellowish-brown, median line, and a similar one on each lateral margin; its median keel slight; its anterior margin not truly emarginate, although there are some indications of emargination. The three lateral eyes about equal. The arms light yellowish-brown, pilose, without spines or pronounced crests. The hands blackish, smooth, somewhat tumid, with the fingers slender, elongated, brownish, and each with numerous teeth placed closely in oblique series. The tail rather robust, very smooth, and polished; its upper surface very deeply furrowed, and with the lateral margins of the proximal four short, light-brown articles, prolonged upward into a very strongly marked spinous process; its under surface without crests, whose ordinary position, however, is marked by dark lines; the penultimate article the largest, blackish, deeply furrowed above, but without spines or pronounced crests; the last article blackish, pilose, somewhat ovate, flattish above, tumid below; the sting slender, strongly curved, with a minute tooth or spine at its base. The legs light brown, mottled above with black. The combs with about fifteen teeth each. (Pl. 24, fig. 4.)

Length of body, 0.45"; of body and tail, 1.25".

Remarks.—I have seen a single specimen of this species, a male, belonging to the Academy, collected by Dr. Grout in the Zulu country, South Africa. I have named it in recognition of the services of Dr. A. Grout, alike to humanity and science.

