AN EXAMINATION OF TYPES OF SOME RECENTLY DESCRIBED CRUSTACEA.

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The Peabody Academy of Science having received from Mr. W. N. Lockington, of San Francisco, some of the types of the Crustacea described by him in the "Proceedings of the California Academy of Sciences," we have thought it best to place on record the results of our study of the specimens, especially since many of his new genera and species would be, without his labels, impossible to identify. We have only "Author's extras," and so cannot quote the volume and page of his descriptions.

Microphrys platysoma A. M. Edw. *Milnia platysoma* Stimpson, Annals N. Y. Lyceum Nat. Hist., vii, p. 180. *Pisoides? celatus* Lockington, Proc. Cal. Acad., July 17, 1876.

Of this species we have two specimens. The two spines on the branchial region are close together.

Microphrys depressa Streets & Kingsley. *Fisheria depressa* Lockington, l. c., July 17, 1876.

This species differs from *M. platysoma* in having the digits excavate at the extremity, in being more granulated, in having the laminiform process on the branchial region somewhat imbricated. There is a spine between and below the processes on the branchial and hepatic regions and three spinous tubercles beneath the hepatic process, on the infero-lateral portion. The posterior margin of the carapax has a row of bead-like tubercles as in *M. platysoma*. The laminiform processes on the propodal joints of the

ambulatory feet are as in *M. platysoma*. Mr. Lockington was apparently led to separate this from his *Pisoides? celatus* by working with the synopsis of genera given in Dana's Crustacea of the U. S. Exploring Expedition where the Maiidæ are divided into two groups according as the digits are acuminate or excavate. Mr. Lockington's generic description would totally mislead one in this instance, but his specific is tolerably good. In the specimen sent (a male), however, the chelipeds are not "enormously long," but are fully as short proportionally as in *Microphrys bicornuta* of Florida.

Thoe sulcata Stm., Ann. Lyc., vii, 177. *Platypes edentata* Lockington, l. c., March 20, 1876; *id.*, July 17, 1876.

The specimens sent are plainly *Thoe sulcata*. Contrary to the generic diagnosis given by Mr. Lockington, the rostrum is bifid and the preorbital is prominent.

Othonia Picteti de Saussure, Revue et Magazin de Zoologie, 1853, II, v, 357, pl. XIII, f. 2; Stimpson, Journal Boston Society Nat. Hist., vi, p. 455. *Micippa ovata* Lockington, l. c., July 17, 1876.

The specimens sent agree exactly with Saussure's description and figure, and certainly do not belong to the genus *Micippa*.

Mithraculus areolatus? S. & K. *Mithrax areolatus* Lockington, l. c., July 17, 1876.

This is plainly a *Mithraculus*, but whether it be new or not we cannot say, as we have not Bell's description of *M. denticulatus* at hand. It is not *M. coronatus* Stm. nor *Mithrax armatus* Saussure.

Inachodes Hemphilli Lockington, l. c., Feb. 7; *id.*, July 17, 1876.

The specimens sent are very near *I. lævis*, but differ from Stimpson's description in having a spiniform tubercle on the gastric region; the dactyli are flattened and curved

but not enough to call falciform; the rostrum is regularly tapering. The proportions of the carapax are also different, the length being to the breadth as three to two. The modification of the diagnosis of the genus proposed by Mr. Lockington cannot be allowed, as the postocular is present though small.

Inachodes brevirostrum Lockington, l. c., July 17, 1876.

A single dry specimen of this apparently good species was received.

Epialtus minimus Lockington, l. c., July 17, 1876.

This apparently new form differs greatly from the other species of the genus with which we are acquainted.

Anaptychus cornutus Stm., Ann. Lyc., vii, 184, pl. II, f. 1. *Ala spinosa* Lockington, l. c., July 17, 1876.

The specimens in no way differ from the description and figure quoted above.

Atergatis rotundatus Stm., Ann. Lyc., vii, p. 202. *Atergatis cristatissimo* Lockington, l. c., March 20, 1876; *id.*, Sept. 4, 1876.

One specimen received.

Xanthodius Sternberghii Stm., Ann. Lyc., vii, p. 52. *Actæodes mexicanus* Lockington, l. c., May 20 and Sept. 4, 1876.

The two specimens sent agree with Stimpson's description and with specimens in the Museum of the Academy from Panama. Mr. Lockington had the paper of Stimpson's quoted above.

Xanthodes Taylori Stm., Ann. Lyc., vii, p. 208, pl. V, f. 3. *Xantho spini-tuberculatus* Lockington, l. c., Feb. 7 and Sept. 4, 1876.

The single specimen agrees perfectly with Stimpson's description and figure.

Panopeus purpureus Lockington, l. c., Sept. 4, 1876.

Is very near *P. validus* Smith, but the front is not as

prominent and less sinuate than in specimens in the Peabody Academy identified by Prof. Smith. There is also a crest on the upper portion of the propodus while in *P. validus* this crest is obsolete. The ambulatory feet are also less hairy and more nearly cylindrical.

Panopeus affinis Streets & Kingsley. *Panopeus transversus?* Lockington, l. c., Sept. 4, 1876 (non Stimpson)

Is very near *P. transversus* Stm. and *P. crenatus* Edw. & Lucas, but has the rostrum more nearly rectangular than in either, and as prominent as in the latter. The front is bilobed, the lobes being slightly arcuate, truncate, not sinuate. A sulcus on the rostrum near the orbits. Orbits with two obsolete fissures above. The notch between front and orbits as in *transversus*. The surface of the carapax is uneven near the antero-lateral teeth, being crossed by grooves running inward from the emarginations between the teeth. There is also, as in *P. crenatus*, slight indications of a separation of the angle of the orbit from the second normal tooth. The sub-hepatic regions are granulate as in *P. transversus*. The spine on the inner margin of the carpus occupies a median position instead of being near the distal extremity as in both species with which this has been compared.

Chlorodius Fisheri Lockington, l. c., Sept. 4, 1876.

This species is probably new, but as the specimens are somewhat mutilated we cannot positively say. It differs considerably from Stimpson's short diagnosis of *C. occidentalis*.

Pilumnus lunatus Edw. et Lucas, D'Orbigny, Voy. dans l'Amer. Meridionale, Crust., 20, pl. IX, f. 2; Stimpson, Ann. Lyc., vii, 216. *Heteractæa pilosus* Lockington, l, c., Sept. 4, 1876.

The single specimen we have agrees with the short de-

scription given by Stimpson, but we have not had access to the work of Edwards & Lucas.

Pilumnus spino-hirsutus Streets & Kingsley. *Acanthus spino-hirsutus* Lockington, l. c., Feb. 7 and Sept. 4, 1876.

This species is plainly a *Pilumnus* and contrary to the description given by Mr. Lockington of his proposed "new genus" the pre-labial ridge is quite plain.

Callinectes bellicosus Ordway, Jour. Boston Soc'y Nat. Hist., vii, p. 577. *Lupa bellicosa* (Sloat MS.) Stm., Ann. Lyc., vii, 57; Lockington, l. c., Sept. 4, 1876.

The specimen sent, a male, agrees well with the various descriptions quoted above.

Achelous panamensis? Stimpson, Annals Lyc., x, 112. *Amphitrite paucispinis* Lockington, l. c., Sept. 4, 1876.

The specimen sent agrees well with Stimpson's description, except in having no spine on the meros joint of posterior feet. There is in this form a spine on the upper margin of the propodus of the first pair, as in *Achelous Gibbesii*, two-thirds the distance from the base to the articulation of the dactylus. Stimpson makes no mention of such spine. The proportions of length to breadth are closely similar. Stimpson gives it as 1 : 1·87. In this case it is 1 : 1·82.

Pinnixa longipes Streets & Kingsley. *Tubicola longipes* Lockington, l. c., Apr. 17, 1876.

This is a *Pinnixa*, but differs from the only species (*P. faba* Stm.) hitherto described from the Pacific coast in the greater breadth of the carapax. Mr. Lockington speaks of this as the only case known of a crustacean being commensal with an annelid, but Stimpson (Annals N. Y. Lyceum, vii, 68 and 236) reports similar habits of *Pinnixa chætopterana* and *P. cylindrica*.

Crangon nigricauda Stm., Proc. Cal. Acad., i, 89; Jour. Bost. Soc., vi, 496. *Crangon vulgaris* Owen, Zool. Beechey's Voyage, p. 87; Dana, U. S. Ex. Ex. Crust., i, 536. *Crangon nigromaculata* Lockington, l. c., Feb. 7, 1876.

Nothing but a color variety of *C. nigricauda*.

In addition we have received types of the four following species, but reserve them for further study: *Mithraculus triangulatus*, *Xantho novem-dentatus*, *Xanthodes? angustus*, and *Xanthodes leucomanus*.

In the five papers by Mr. Lockington, quoted above, he describes fifty-eight supposed new species and institutes eight new genera. His *Libinia setosa* is a valid species and has since been redescribed in "Bulletin No. 7" of the National Museum by Dr. Streets as *L. semizonale*. Mr. Lockington's name, however, will hold. *Idotea pulchra* Lockington, is, we are informed by the describer, *I. bicuspida* Owen. *Idotea marmorata* Packard (Memoirs of the Boston Society, Vol. i, p. 296, pl. viii, f. 6) also appears to be the same.

Concerning the other species described by Mr. Lockington, we have nothing to say. Only by a study of his types can one be sure of what species he had before him. His work, as will be seen by our review of the few of his types that have come under examination, has been extremely careless and untrustworthy. With so little access to the literature of the subject, he should not have attempted systematic work.