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SYSTEMATIC STUDIES ON THE JAPANESE MACRUROUS
DECAPOD CRUSTACEA. 5. A NEW PALINURID,
NUPALIRUS JAPONICUS, GEN. ET SP. NOV.

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DECAPOD CRUSTACEA. 5. A NEW PALINURID,
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Itsuo KUBO

(Received Jan. 15, 1955)

A remarkable palinurid lobster was caught by an obscure fisherman in October, 1953 at a depth of about 200 m about 8 miles off Shimokawaguchi, Kôchi Prefecture while the fisherman was collecting coral. Dry specimen of the lobster was sent to the present writer for identification by Professor Jûjirô Ishikawa of Kôchi Prefecture Women's College.

This palinurid is found very similar to *Justitia longimana* (H. MILNE-EDWARDS) in general feature, but differs greatly in many respects. The discrepancies appear for the present author to be so considerable as to establish new generic and specific categories for reception of this remarkable crustacean. Since *Nupalirus japonicus* gen. et sp. nov. is erected herein, and descriptions and some discussions may be given later on.

Acknowledgements should be mentioned herewith for wholehearted assistance of Messrs. Kazunori TAKAGI and Jin HATTORI of our laboratory for preparation of photographs and others. My hearty thanks are also due to Professor Dr. Arata TERAÔ of the Miyazaki University, by whom valuable suggestions were made for designation of the new generic name and to the Ministry of Education as the expence of the present investigation is partly defrayed by the Grant in Aid for Fundamental Scientific Research of the Ministry.

Nupalirus gen. nov.

Carapace furnished with squamiform sculptures; a median, a pair of supra- and infra-orbital spines present on frontal border, and any spines absent on the border between median and supra-orbital spines. Supra-orbital spines dorsally serrate. Abdominal segments each with many (about 4-7) transverse furrows. Telson longer than broad. Antennular flagellum short. Mandibular palp 3-segmented. First pereopods not extremely robust and elongate, not subchelate; dactylus not strongly curved backwards. Outer uropods greatly elongated. Stridulating organs present.

Genotype: *Nupalirus japonicus* sp. nov.

The present new genus closely allies to the genus *Justitia* established by HOLTHUIS (1946). But it is easily assortable from *Justitia* as it shows principal discrepancies in the following respects:—(a) having no intermediate spines on the anterior border of carapace between the median and supra-orbital spines; (b) first pereopod not extremely stout and elongate, and not subchelate, dactylus not strongly recurved posteriorly; and (c) outer uropods remarkably elongated.

***Nupalirus japonicus* sp. nov.**
(New Japanese name: Ryoma-ebi)

Shell hard; that of carapace, sixth abdominal segment, anterior part of telson, and antennal peduncle furnished with squamous sculptures; and that of pleons from first to fifth having 4-7 transverse grooves on tergum and characteristic sculptures on pleura of these pleons as shown Pl. XII, Upper. Each sculpture of carapace and antennal peduncle fringed with short bristles on anterior and antero-lateral margins, but on the contrary, that of sixth abdominal segment and telson provided with similar setae on posterior and postero-lateral edges.

Antennular tergum narrow and naked, without spines and bristles, but carries well developed lateral upheavals which form a part of the stridulating organs. Carapace subpentagonal in cross-section, with round dorsal surface and flat lateral one; provided with a median, a pair of supra-orbital, and a pair of infra-orbital spines on frontal margin; median spine smallest among those spines, sharply pointed at tip, reaches to posterior edge of antennular tergum; supra-orbital spines largest of the spines lying on frontal rim of carapace, extending well beyond distal end of second antennal segment, laterally compressed, more or less curved downwards in distal half, armed with 2 short stout spines on upper edge; infra-orbital ones stout, rather short, with acute apex; 3 median spines and 5 pairs of spines present behind the median spine of frontal edge of carapace; 2 and 1 spines lying afterwards each supra- and infra-orbital spines respectively (Pl. XII, Lower). Cervical groove well defined, has no spines on its posterior edge. Epistom afforded with a small pointed median spine on anterior border and a protuberance with round apex on each antero-lateral angle. Last thoracic sternum carrying 2 small spines on frontal border and 6 large acute spines on posterior edge, these 6 spines directed backwards. Pleonic pleura ending into a large, robust, acuminate spine (Pl. XII, Upper). Sternum of first pleon armed with 4 large, acute spines on posterior border, those of the pleons from second to fifth bearing 2 ones similar to those of the first pleon, that of sixth pleon provided 2 small spines on anterior rim and 3 ones on posterior border. Telson subrectangular in outline, with rounded distal margin, about one and half times as long as wide at base (Pl. XIII, Lower).

Antennule a little shorter than carapace. Antennal peduncle very stout; stridulating process of first peduncular segment well developed; distal outer angle of last peduncular segment protruded into a large depressed spine obliquely truncate on apex. Mandibular palp consists of 3 joints, 2.9 mm in each basal and last joint, and 6.5 mm in middle joint. All maxillipeds furnished with well developed exopodite reaching base of antenna; exopodite has a multiarticulate flagellum on tip. Third maxilliped 7-jointed, 3-4 small pointed spines present along inner edge of each basis and merus, and 8 ones on the same edge of ischium. All pereopods afforded with an acute spine on distal outer angle of merus. First pereopod attains distal end of intermediate segment of antennal peduncle; merus carries a spine on proximal outer border and on posterior inner edge about 15 ones which become gradually larger in size distally; carpus with a spine on distal inferior angle and several spines on posterior inner

border; propodus has about a dozen spines on posterior inner and outer edges, and a rather large spine near distal end of posterior surface. Second pereopod somewhat surpassing distal end of intermediate joint of antennal peduncle. Third one reaches about distal extremity of second joint of antennal peduncle. Fourth one attains near anterior end of basal segment of antennal peduncle. Fifth legs shorter than fourth ones; coxa has on inner border a slender styliform prolongation which is directed inwards, nearly reaches to median line of sternum on which fifth legs are set, and bears male genital aperture at distal end.

Pleopod leaf-shaped. Inner uropods slightly longer than telson. Outer ones remarkably larger than telson, about 1.7 times as long as telson.

Dimensions of some bodily parts are given below. Bodylength measured from anterior border to distal end of telson 237.6 mm; carapacial length 83.6 mm; length of telson 41 mm; length of antennular peduncle 61 mm, and that of first, second, and third joints 34, 11, 16 mm respectively; lengths of ambulatory legs: 103 mm in first leg, 111.5 mm in second leg, 110.5 mm in third leg, 100 mm in fourth one, 89 mm in fifth one; those of last 4 segments of first leg 41, 19, 22, 17 mm, and the same of third one 41, 16, 23, 17 mm respectively; length of inner uropods 43 mm, that of outer one 70 mm.

Holotype: male, deposited in the biological museum of Kôchi Prefecture Women's University.

Type locality: about 8 miles off Shimokawaguchi (Shimizu city), Kôchi Pref., Japan.

The present new species has, in general feature, much resemblance to *Justitia longimana* (H. MILNE-EDWARDS) known from Antilles (H. MILNE-EDWARDS, GRUVEL), Cuva (VON MARTENS, 1872), Santa Cruz (BOUVIER, 1925) Mauritius (MIERS, 1882), Oahu, Hawaii (EDMONDSON, 1951). But differences are found to exist on many traits besides those enumerated already as generic character of the new genus *Nupalirus*. Of which principal ones are as follows:—Spines of posterior border of cervical groove are absent (present in *J. longimana*). Sculpture pattern of the sixth abdominal segment is somewhat more intricate than that of *J. longimana*. The spine of the distal outer corner of the last peduncular segment of antenna is much larger than that of *J. longimana*. All other pereopods, except the first one, are considerably thicker than those of *J. longimana*.

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PLATE XII.

Nupalirus japonicus, gen. et sp. nov., male, carapace-length 83.6 mm.
Upper, lateral aspect; Lower, upper aspect of cephalothorax.

PLATE XIII.

Nupalirus japonicus, gen. et sp. nov., 83.6 mm in carapacial length.
Upper, dorsal aspect; Lower, ventral aspect.





