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INFORMATION ABOUT *CYBISTER LATERALIMARGINALIS* (DE GEER) (COLEOPTERA: DYTISCIDAE) FROM PAKISTAN WITH REFERENCE TO ITS GENITALIA AND CLADISTIC RELATIONSHIP

T. Attique and S. Kamaluddin

Federal Urdu University of Arts, Science and Technology, Gulshan-e-Iqbal Campus, Karachi

ABSTRACT

The water beetle *Cybister lateralimarginalis* (De Geer) of the family Dytiscidae first time described from Pakistan with special reference to its genitalia. The systematic postion and cladistic relationship is also briefly discussed in the light of its apomorphic characters.

Key words : *Cybister lateralimarginalis*, Coleoptera, Dytiscidae, cladistic relationship

INTRODUCTION

The representatives of the family Dytiscidae Westwood are best known as " the diving beetles". They are distributed throughout the world in fresh water ponds, lakes and streams. According to the Lefroy and Howlet (1909), the larvae of *Cybister confuses* are extraordinary voracious and if confined together attack and destroy each other.

The morphotaxonomic and faunistic works on the genus *Cybister* were attempted from various regions of the world by various authors viz. Westwood (1839), Lefroy and Howleft (1909), Munch (1927-1935), Lutz (1908), Hatch (1953), Curran (1945), Rye (1954), Bistrom (1983), Khatoon and Ali (1975 and 1977), Nilsson (1996), Brancucci (1979)

MATERIALS AND METHODS

The specimens were collected from the fresh water pools in Sindh and on light. For study of male genitalia, the genital complex, was removed in 10% KOH solution and was warmed on a burner for about 2 to 3 minutes. It was then washed with tap water and was inflated under leitz binocular microscope in the same medium, the examination of various structure were made and their diagrams were drawn by placing them on the cotton threads immersed in glycerine with the help of eye piece graticule and were later preserved in microvials with drop of glycerine later pinned with the specimens.

For female genitalia (Ovipositor) the abdomen was detached from the base and was warmed in 10% KOH solution on a burner for about 2-5 min. It was then washed in tap water and their diagrams were drawn by placing them on the cotton threads immersed in glycerine with the help of eye piece graticule. After making diagrams the abdomen were dried and glued with specimen.

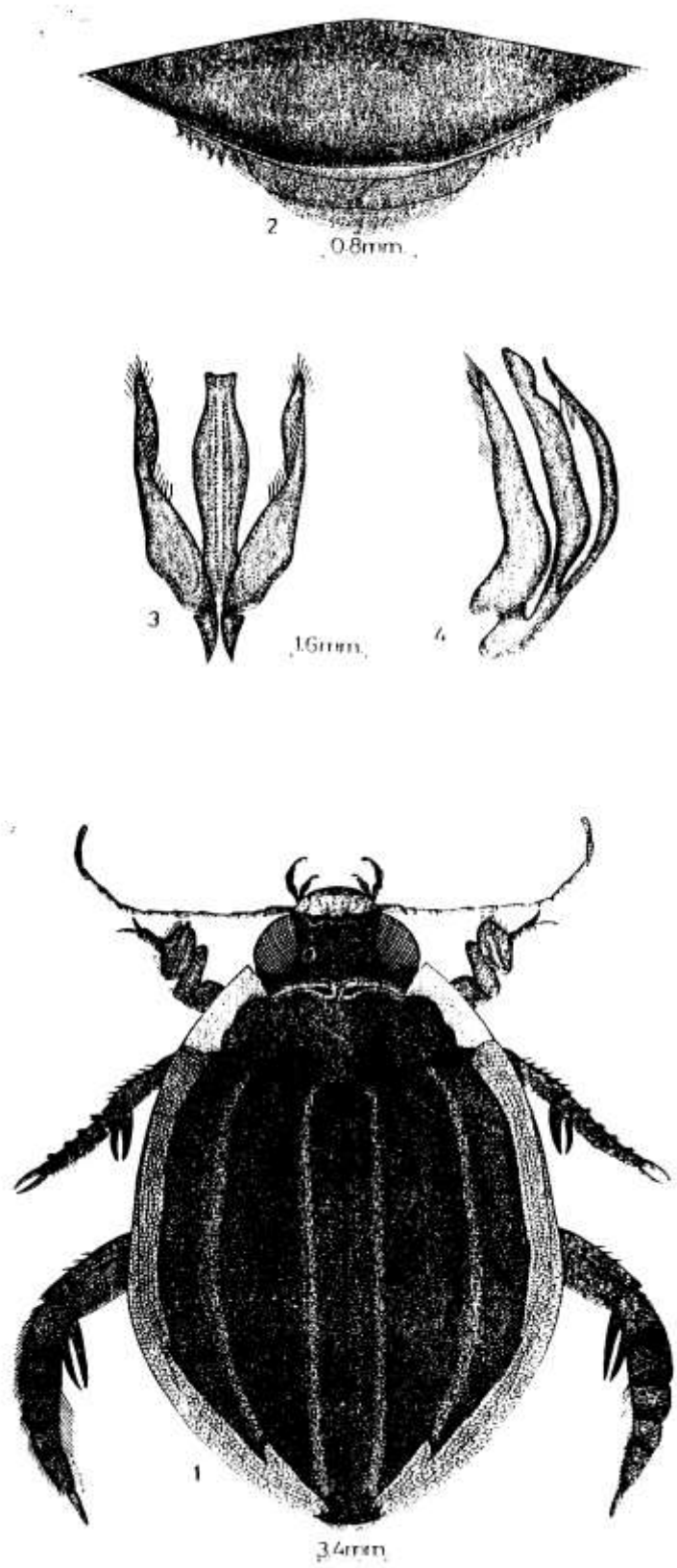
RESULT

Cybister lateralimarginalis (De Geer)
(Figs.**1-4**)

C. lateralimarginalis De Geer, 1774, *Mem. ins., iv:*396*;* Gschwendtner, 1938: 42; Csiki, 1946: 96; Guignot, 1947: 247; Zaitsev, 1972, *Faun. USSR. Col. 4*: 1-401
C. jordains Reiche, 1846, *Ann. Soc. Ent. Fr., 4 (3)*: 637*; subsp. chyowdoiri* Hochuth, 1846, *Enum. Carab. Hydroc. Cauc* :213.
C. tataricus Gebier, 1830, *Ledeb. Reise, 11*: 64;
C. hedini Zaitsev, 1908, *Ezhegodink Zoologiches kogo myzeya Akademii nauk, xiii*: 419; Falkenstrom, 1933, *Ark. Zool, 27A, 1*:20; *subsp. ponticus* Sharp, 1880-1882: 748; Gschwendtner, 1938: 42.

General shape

Body obovate, broadly oval.



Figs.1-4. *Cybister lateralimarginalis* (De Geer): 1.Entire, dorsal view; 2.Male pygidium, dorsal view; 3.Male genitalia, dorsal view; same, Lateral view.

Colouration

Body generally olive green, except median vertical zig-zag band, two small dots near inner margin of eyes on head, ocelli, eyes, two anterior median pits on pronotum, a narrow strip-like lateral margins of elytra black; vertex, antennae, palpi of head, lateral margins of protonum and elytra dull yellow.

Head

Head about 1.5X broader than long, anteocular distance 1.5mm, posterior of head including eyes 3.5mm, width of head including eyes 8.2mm, eyes prominent, somewhat oval-shaped, basal segment of antennae longest, 2nd segment smallest, 3rd to 9th and 11th segment equal to each other and 10th segment slightly shorter to others, labial palpi with basal segment shortest, 3rd segment longest, maxillary palpi with basal segment shortest, 4th segment longest.

Thorax

Protonum about 2.5X broader than long, length of pronotum 6.3mm, width 15mm, lateral margins of pronotum slightly convex, anterior and posterior margin sinuated, anterior and humeral angles acute, scutellum not covered, short, triangular, apex pointed, medially notched, length of scutellum 1.2mm, width 1.8mm, distinctly broader than long, two longitudinal lines of dots on elytra, lateral margins of elytra convex, apical margin sub-roundly produce, length of elytra 26.7mm, width 10.3mm, fore legs in males forming suckers, numerous suckers arrange in a longitudinal manner, fore claws equal, medians legs with spurs and claws equal, hind spur equal.

Abdomen

Abdomen convex, beneath, unarmed, pygidium (Fig. **2**) slightly exposed, total length 39.9mm.

Male genitalia (Figs. 3 and 4)

Paramere (Figs. 3 and 4) large, lateral margin distinctly sinuated, distally sub-rounded with hairs, inner margin strongly sinuated, outer proximal end sub-rounded attached with triangular plate, aedeagus (Fig. **4**) large stout, medially dilated, proximally generally bilobed, ventral lobe inward, distally broad somewhat bilobed, dorsal lobe largely narrowed forked with apices sub-acutely produced.

MaterialS examined

two males; Pakistan; Chilia Bund; Thatta; other data unknown lodged at author's supervisor collection.

Comparative note

This species is most closely related to *C. tripunctatus* (Olivier) in having anterior angle of pronotum well produced anteriad with sharply acute process elytra without any patch, distal end of aedeagus distally narrowed with lobes but it can easily be separated from the same in having anterior margin of pronotum medially notched, distal end of the aedeagus truncately sinuated in contrast anterior margin of pronotum medially convex, distal end of the aedeagus roundly bilobed in *C. tripunctatus* and by the other characters as noted in the description.

DISCUSSION

The water beetles of the genus *Cybister* Curtis distributed in Tropical and Sub-tropical regions. This genus plays sister group relationship to *Dytiscus* Bergtrasser by their synapomorphies ventral margin of first four segments of hind tarsi without setae or setae present at the outer apical angle but isolated from the same by its autapomorphies like adhesive disc of males transverse or transversely oval with 3 or 4 transverse rows of small suckers, hind tibiae almost as board as long, outer terminal spur broadened in the basal half and aedeagus medially broad, apically distinctly bilobed.

The *C. lateralimarginalis* (De Geer) is recorded from sindh areas of Chillia bund, Thatta plays sister group relationship with *tripunctatus* (Olivier) by their synapomorphies like anterior angles of pronotum well produced

anteriad with sharply acute process and distal end of aedeagus distally narrowed with lobes but isolated from the same by pronotum medially notched, basal antennal segment longer than 4th segment and distal end of the aedeagus truncately sinuated.

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