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PRELIMINARY STUDY ON THE AQUATIC BEETLES OF IRAQ (HALIPLIDAE, COLEOPTERA)

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An attempt toward the study of the aquatic beetles of Iraq has for the first time been made here. The present study deals with taxonomy of the family Haliplidae. An account of the history and phylogeny of Haljplids is also mentioned. The localities of the species according to their fixed labels are as well reported under each species recorded.

The Haliplid collection of the Department of Entomology of the British Museum (N.H.) was the main source of materials for this study. However, specimens from my own collection from the Natural History Museum of the University of Basrah was also used here. The latter collection is a small one made during the months of April, May and June from 1968-1972, by the author and his students in the Shatt Al-Arab and its adjacent canals as well as from the marshes of Southern Iraq. The localities in the Shatt-al-Arab river have fresh water which becomes braekish to the south near Al-Siba; south of this point the water tends to be more saline.

For the identification of the species and the formulation of the keys, only the external characters are utilized. Some specimens appeared to represent new species or subspecies. Because they were not enough in number and sex and due to their unsatisfactory condition none were erected in the present work.

NOTES ON THE FAUNA.

Although there is a relatively large amount of aquatic habitat in Iraq, very little is known about the country's water beetles. The three large rivers, Tigris, Euphrate and Shatt-Al Arab with their numerous branches and man made canals crossing the fields in the south provide much of the suitable habitat. There are as well extensive marshes in the south and some in the middle of the country such as Hor Alhammar. The mountainous parts of Iraq, in the north and north-east, also have many fast-flowing rivers which join to form the Tigris.

Zimmermann (1920) has recorded **Haliplus fulvicollis** and **H. fulvus** for Iraq.

THE SYSTEMATIC POSITION OF HALIPLIDAE

The morphological characters of Haliplids are regarded by Fowler (1887) as intermediate between the Carabidae and Dytiscidae. However in the insertion of the antennae beneath the eyes the Haliplids differ not only from the Dytiscidae but also from the Carabidae, Emden (1922). In this character they agree with the Cicindelids. In the elytral sculpture the differences between the Haliplids and Dytiscids are very clear and marked even in the primitive Hydroporini which have some resemblance in puncturation to the Carabidae. In this respect Balfour-Browne (1940) stated clearly that the Haliplids appear to have evolved on a parallel course.

Crowson (1960) placed the Haliplidae among the three lower families of the Hydradephaga (Amphizoidae, Hygrobiidae and Haliplidae). He presumed that these families arose from early adaptive form of Hydradephaga.

The future study of the life history, biology, and the internal anatomy may reveal more information to enrich the knowledge of the phylogeny of these beetles.

The Haliplidae were first separated by Thomson (1860) as a distinct family from the Dytiscidae. The most marked characters of the Haliplids are the posterior coxae which overlap and cover the trochanters and half of each femur. Movements of the hind legs are thus limited to one plane.

KEY TO THE GENERA.

This collection contains three genera of Haliplids which can be separated as follows :-

1— Pronotum quadrate. Elytral surface with longitudinal ridges and grooves ..... **Brychius Thoms.**

- - Pronotum trapezoid narrowing anteriorly. Elytral surface devoid of ridges and grooves ..... 2.

2— Terminal segment of maxillary palps long and conical. Body almost as long as broad and truncate posteriorly ..... **Peltodytes** Reg.

- - Terminal segment of maxillary palps short and subulate. Body longer than wide, produced behind ..... **Haliplus** Latr.

IRAQI SPECIES OF HALIPLIDAE.

Brychius elevatus Panzer (1794)

This is the only species of **Brychius** found in the collection studied here. It is easily distinguished from all other Haliplids by its rather long and narrow form, as well as by the raised third elytral interval. According to Balfour-Browne (1940) this species is an inhabitant of running water, from small streams to large rivers.

Locality :...Artificial canals of the eastern bank of river Shatt Al-Arab (Kebasi).

Peltodytes sp. This unidentified species is distinguished by its very broad and rather square shape and by the presence of very large punctures on the elytra. It is close to **P. caesus** Duft, but differs in the structure of the elytral surface and the shape of the maxillary segments.

Locality : Two specimens, neither in good condition from ponds of fresh water south end of Hore Alhammar.

KEY TO THE SPECIES OF HALIPLUS.

1— Upper and lower surface covered with fine punctures; Elytral striae weak 2

- - Upper and lower surface smooth; Elytral striae well developed and defined 3

2— Pronotal striae present ..... **H. confinis Steph.**
Locality : Canals in Abu-al-Khasseb.

- - Pronotal striae absent ..... **H. obliquus** F.
Locality : Ashar Canal, Tannoma, Hartha.

3— Pronotal striae absen; Setigerous striole present 4

- - Pronotal stria present; Setigerous striole absent 8

4— Anterior projection of metasternum without a pit or depression ..... **H. mucronatus** Steph .
Locality : Abu-al-Khasseb, Qurna.

- - Anterior projection of metasternum with a pit 5

5— Prosternal process with a definite ridge across the base and with side lines well marked to the base; Setigerous striole of metatibia short, not more than 1/3 length of tibia 6

- - Prosternal process with only a faint indication of a line across the base; Setigerous striole long, more than 3/4 length of tibia... 7

6— Setigerous striole of metatibia with 10 or more spines. Length 3.5 - 4 mm ..... **H. fulvus** F.
Locality : Marsh districts near Qurna.

- - Setigerous striole of metatibia provided with only a few spines much less than 10. Length 2.5 - 3.5 mm..... **H. variegatus** Sturm.
Locality : Very common , collected from many places in southern Iraq.

7— Angle between lateral margin of pronotum and elytra very obtuse approaching a straight line. Length 3.5 - 4 mm. **H. fulvicollis** Sturm.
Locality : Common in the canals passing throngh date palm gardens at Qurna.

- - Angle between pronotum and elytron less obtuse approaching a right angle. Length 2.5 - 3 mm. ..... **H. laminatus** Schall .
Locality : This species has been collected only from the canals connected to the eastern bank of river Shatt-Al-Arab.

8— Anterior tarsal claws almost equal. Basal segment of mesotarsus excised along its inner edge ..... **H. lineolatus** Mann.

- - Anterior tarsal claws unequal, the inner claw being shorter and strongly curved inwards. Basal segment of mesotarsus not excised. pronotal stria short and usually slightly curved... **H. ruficollis** Deg.

Locality : H. ruficollis has been taken in ponds where almost stagnant water is available in Qurna and Karmat Ali, probably it was mixed with other species which can not be identified at this stage of study.

The writer is not that much satisfied about the determination of **H. lineolatus** but such specimens have been found within the collection from Hore Alhammar.

SUMMARY

Two genera **Brychius** and **Peltodytes** , and seven species, namely **Haliplus confinis, H. laminatus, H. lineolatus, H. mucronatus, H. obliquus. H. ruficollis,** and **H. variegatus** of aquatic beetles are recorded for the first time from Iraq. Keys to identify the three genera and the ten species recorded for the area are supplied.

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خلاصة

اجريت هذه الدراسه في متحف التاريخ الطبيعى البريطانى عام ١٩٧٦ على عائلة الـ Haliplidae وهى من عوائل الحشرات المائية العراقية تعود الى رتبه غمدية الاجنحه Coleoptera تشمل هذه الدراسة تسجيل جنسين جديدين من العراق هما **Brychius, Peltodytes** مع سبعة انواع تسجل لاول مرة من العراق تعود للجنس **Haliplus** هذه الانواع هى :ـ

Haliplus confinis, H. laminatus, H. lineolatus, H. mucronatus H. obliquus, H. ruficollis, & H. variegatus

كما وضعت مفاتيح لتشخيص الاجناس وكذلك مفاتيح لتشخيص الانواع مع نظرة عامة لتطور هذه العائلة وعلاقتها بالعوائل القريبة .