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TABANIDAE (DIPTERA) OF IRAQ

by

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Thanks to the kindness of Prof. BASHIR E. ALLOUSE Director, and of Prof. KAMEL T. KHALAF, I had the opportunity to study a collection of Horseflies belonging to the Iraq Natural History Institute.

It included 27 species and subspecies with allotypes (3 Males) of *Tabanus fumidus* AUSTEN, and *T. tinnunculus* SZILADY, quite a number if one knows that next to nothing has been recorded concerning the Tabanidae fauna of Iraq, very few if one thinks that three or four more species are likely to be found in that country.

Thus the present paper has two purposes: firstly to record what has been collected so far by the staff of the Iraq Natural History Institute, secondly to draw attention upon the need for further investigations, a need that I will emphasize by summarizing some important facts concern-

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ing the habits and medical importance of Tabanidae. More details will be found in my previous papers (LECLERCQ, 1952, 1961).

A summarized account of the life-history and medical importance of Tabanidae.

Larvae.—Horseflies larvae are aquatic or semi-aquatic, living mainly in swamps. Very voracious, they feed upon larvae of other insects, upon Annelids, Molluscs, small Crustaceans, sometimes also upon various organic materials. They become easily cannibal, particularly when kept in laboratory.

Adults.—Males never suck blood. They drink free water, suck sap from plants or visit flowers. Most females on the contrary suck blood from big Mammals, mainly Equidae, Bovidae and Camelidae, rarely from sheep. Of course they are also a nuisance to Man. Some species attack pigs in North America, Crocodiles in Africa, Sand-Lizards in the Western Great Erg, marine Tortoises in the Seychelles Islands, terrestrial Tortoises in the Galapagos. They would also suck from recently killed game. Birds are rarely attacked, Ducks at least will catch the Horse-fly before being its victim.

Nevertheless their hematophagous habits are not so strict as those of the Tse-tse Flies. They always complete their diet by drinking water and by sucking sap, nectar, aphids and coccids secretions.

Predators.—Among the natural enemies of the adults, the most efficient are Hymenoptera Sphecidae and Vespidae, and also Birds. In Morocco, I had the opportunity to observe *Bubulcus ibis* L. catching very many Horse-flies on young bull calves (LECLERCQ 1961).

Sting effects.—Sometimes severe on Man, particularly when implying an allergic reaction (LECLERCQ and LECOMTE, 1961). Among domestic animals, constant harassing by Horse-flies may cause great troubles; Horses, Cattle and even Camels may become dangerous. They may become unable to graze normally, with the result that their breeding is impossible in some heavily infested areas.

Parasitology.—Like all hematophagous insects, Horse-flies may act as vectors of certain pathogenic agents. In many instances transmission is purely mechanical; in others it involves more specific relations between the parasite, the vector and the victim, in this case, it is a specific host and a reservoir for this pathogenic agent. Tabanidae become infected after having sucked blood from infected animals or after having sucked blood from infected animals or after having drunk contaminated water, for instance from a pond containing Rodents dead of Tularemia.

Here is a list of the pathogenic agents known so far to be transmitted by Tabanidae to Man or to domestic animals:

PROTOZOA: Surra and related Trypanosomiasis widespread in all continents.

Mal de Caderas of South America.

Trypanosoma theileri in all continents.

BACTERIA: Staphylococci (*Staphylococcus albus* and *aureus*) agents of furonculosis.

Anthrax (*Bacillus anthracis*).

Septicemic hemorragic of Buffalo and Rabbit (*Pasteurella bollingeri*).

Tularemia (*Francisella tularensis*).

PROTISTA : Bovine Anaplasmosis (*Anaplasma marginale*).

Ictero-hemorragic fever (*Leptospira icteronaemorragiae*).

ULTRAVIRUS : Swamp fever of Horse, Brain fever of Horse, Horse sickness, Rinderpest.

HELMINTH : Filariae, Diurnal Loiasis (*Loa loa*) in West Africa.

Onchocerciasis (*Onchocerca gibsoni*) in Australia.

In South America, Tabanidae are also more or less frequent vectors of eggs of the fly *Dermatobia hominis* L. whose larvae cause *specific* cutaneous myiasis of Man and animals.

Many more observations and experimental data are needed in order to check the exact role of Tabanidae in the epidemiology of these diseases. Anyhow the pathogenic and economic importance of Tabanidae in tropical and subtropical regions is far from being negligible.

To attest that a species of insect is the specific vector or transmit mechanically a pathogenic agent, registered experiments are evidently always necessary. The simultaneous prevalence of certain insects and a malady, so in a locality or in certain seasons, prove nothing in the matter, although it is able to furnish valuable indications for the experimentation. Therefore, the taxonomic and zoogeographic treatment of hematophagous insects shows so many interest.

Identification of Old World species.—The Tabanidae of Aethiopian Region were monographed by OLDROYD (1952, 1954, 1957) and there is not much difficulty in recognizing species from that zoogeographical region, thanks to the value of OLDROYD'S contribution. The basic works for the Palaearctic Region are those of KROBER (1938) (quite insufficient for many reasons) and of OLSOUFIEV (1937), the latter being a very good work which has however become difficult to obtain and is no longer up to date and concern only the fauna of U.S.S.R. The Tabanidae of the Oriental Region are not sufficiently known; there are only some general works (RICARDO,

1911; SCHUURMANS STEKHOVEN, 1926; PHILIP, 1959, 1960; PHILIP and MACKERRAS, 1960). I do my best to produce a complete revision of the Palaearctic species, the first part of it (*Pangoniinae, Chrysopina*) having been printed (LECLERCQ, 1960). Needless to say that such a revision and the zoogeographical surveys produced with it would benefit very much from a more thorough exploration of the Middle East and the neighbouring countries, including Iraq. Fortunately, the Tabanidae of Iran become better known with the good collaboration and the great activity of ABBASSIAN-LINTZEN (1960, 1961; LECLERCQ, 1960). These areas of the Old World have Tabanidae problems with medical, veterinary and economic implications; they are in a position to reveal a curious zoogeographical mixture of species from Oriental, Aethiopian and truly Palaearctic origins; yet they remain poorly explored so far.

First List of Iraq Tabanidae

SUBFAMILY *CHRYSOPINAE*: TRIBE *CHRYSOPINI*:

1. **Nemorius irritans** RICARDO.

Hilla, 2 Females, V. 1952.

Distribution: Turkey, Afghanistan, Iran, Iraq.

2. **Chrysops** (*Heterochrysops*) **flavipes punctifer** LOEW.

Swaratuka, M. & F., VIII. 1961 (ABUL HAB).

Distribution: Baluchistan, Caucasus, Iran, Iraq, Asia Minor, Anatolia, Syria, Israël, Roumania, Bulgaria, Greece, Corfou, Cyprus, Hungary, Dalmatia, Italy, Austria, France, Spain, N. Africa (Morocco, Algeria).

3. **Chrysops** (*Heterochrysops*) **flavipes simillimus** AUSTEN.

Swaratuka, Female, VIII. 1961 (ABUL HAB).

Distribution: Iran, Iraq.

SUBFAMILY *TABANINAE*: TRIBE *TABANINI*:

4. **Atylotus agrestis** WIEDEMANN.

Hilla, Male, 10. VI. 1945 (Museum Munich).

Distribution: *Aethiopian Region*: Savannas from Senegal to Natal and westwards to Angola and the lower Congo, Northern Rhodesia, Tanganyka, Parc National Albert of the Congo; it reaches the Guinea Coast in the belt of savanna woodland which streches from near Sekongi in the Gold Coast to Dahomey (OLDROYD, 1954). In the north-east, it extends through Egypt, north of Tchad, Arabia, far into the *Oriental Region* (Hong Kong, Ceylon). It is recorded from Mauritius and Reunion. *Palaearctic Region*: Iraq, Iran, U.S.S.R. (Kazakstan, Turkmenia, East Turkestan, Mongolia, Altai, Uzbekistan, Daghestan, Azerbaidjan, Caucasus, Grusien), Afghanistan, north-west China, Greece, France (Var, Bouches du Rhône, Gard,

Hérault, Pyrénées Orientales, Ille et Vilaine, Loire Atlantique, Vendée, Ile d'Yeu), Spain (Gerona), Portugal (Monchique), Morocco.

5. **Atylotus albopruinosus** SZILADY.

Baghdad.

Distribution: Iraq.

6. **Atylotus pulchellus** LOEW.

Abu Ghuraib (Baghdad), Male, 18. VII. 1953; Female, 29. VIII. 1954; Female; 2. VIII. 1956; Basra, Male, 21. III. 1957 (Museum Munich).

Distribution: Iraq, Iran, U.S.S.R. (Kazakstan, Tadzhikistan, Turkmenia, Transcaucasia, Azerbaidjan, Nakhitchevan), Asia Minor, Cyprus, Sardinia, N. Africa (Algeria, Egypt).

7. **Atylotus quadrifarius** LOEW.

Distribution: Iraq, U.S.S.R. (Turkestan: Schachrud), Asia Minor (Sarepta).

8. **Hybomitra decora** LOEW.

Anc.-CC Fne, Female, 24. III. 1958; Sulaimaniya, Female, 12. V. 1957 (Museum Munich).

Distribution: Iraq, Israël, Lebanon, Crete, Bulgaria, Algeria.

9. **Hybomitra mendica** VILLENEUVE.

Cap Zawé, Female, 29. III. 1944 (Museum Munich).

Distribution: Iraq, Israël, Syria.

10. **Tabanus arabicus** MACQUART. (= *fennicus* LUNDSTR.)

Daurah, R. Tigris, five miles below Baghdad, 2 M., 2 F., 23-30. V. 1920 and Kurna, V. 1918 (AUSTEN, 1923).

Distribution: Iraq.

11. **Tabanus assuetus** GAUZER.

Arbil Liwa, Female, VIII. 1942.

Distribution: Iraq, U.S.S.R, (Nakhitchevan),

12. **Tabanus autumnalis brunnescens** SZILADY.

Mosul, Female, 30. VIII. 1962 (K. KHALAF); Baghdad Female, 1. III. 1951 (T. AL RAWI); Arbil Liwa, Female, VIII. 1962 (K. KHALAF); Swaratuka, Female, VIII. 1961 (ABUL HAB); Diwaniya, M. & F., 12. VII. 1958. (IBRAHIM); Amadiya, Male, summer 1953 (WAHEED); Sa'diya, Male, 3. IV. 1955 (RUHMAN); Baghdad, Female, 1. IV. 1956 (AL AMIN); Female, 22. III. 1956 (AHMED); Female, 23. VI. 1953; Male, 2. VI: 1958 (MAJED); Male, VIII. 1949 at light; Mosul, Female, VIII. 1954 (ALAZAWI).

Distribution: Iraq, Iran, Afghanistan, Syria, Israël, Asia Minor, U.S.S.R. (Turkestan, Caucasus, Daghestan, Azerbaidjan, Nakhitchevan, Armenia), Roumania, Cyprus, Switzerland (Yverdon), Spain, Majorca, Morocco, Algeria.

13. **Tabanus fumidus** AUSTEN.

Hit and Anah, R. Euphrates (AUSTEN, 1923); Arbil Liwa, Female, VIII. 1961; Aski Kalak, 2 Males, 20. VIII. 1962 (K. KHALAF).

Distribution: Iraq.

14. **Tabanus inaequatus** AUSTEN,

Amara (AUSTEN, 1923).

Distribution: Iraq.

15. **Tabanus leleani** AUSTEN.

Baghdad, Ramadi (AUSTEN, 1923); Arbil Liwa, 2 Females, VIII. 1962, Swaratuka, Female, VIII. 1962 (ABUL HAB).

Distribution: N.-W. China, Punjab, Afghanistan, Iran, Iraq, U.S.S.R. (Mongolia, Kazakstan, Turkestan, Azerbaidjan, Nakhitchevan, Armenia, Grusien, Caucasus), Anatolia, Cyprus, Greece, Morocco, Algeria, Tunisia.

16. **Tabanus leleani pallidus** OLSOUFIEV.

Swaratuka, 2 Female, VIII. 1962 (ABUL HAB).

Distribution: Iraq, U.S.S.R. (Turkmenia, Nakhitchevan).

17. **Tabanus lunatus** FABRICIUS.

Sekreen, Summer 1953 (K. KHALAF); Shaklawa, Female, VII. 1953 (K. KHALAF).

Distribution: Iraq, Lebanon, Israël, Turkey, U.S.S.R. (Transcaucasia, Azerbaidjan, Nakhitchevan, Armenia). Greece (Attika, Skyros, Peloponese), Albania, Roumania, Jugoslavia, (Bosnia, Dalmatia), Poland (Cracovie), Italy, Sicily, France (Var, Vaucluse, Alpes Maritimes, Hérault), Spain, Portugal, Morocco, Algeria, Tunisia, Egypte.

18. **Tabanus pallidipes** AUSTEN.

Hilla, Male, 10. VI. 1945, Female, 29. V. 1945; Abu Ghuraib (Baghdad) (Museum Munich).

Distribution: Iraq, Iran, Syria, Israël.

19. **Tabanus polygonus** WALKER.

Shaklawa, Female, VII. 1953; Swaratuka, Female, VIII. 1961 (ABUL HAB); Diwaniya, Female. VIII. 1958; Abu Ghuraib (Baghdad), Female, 16. IV. 1945 (WECKEEL); Aski Kalak, Male, 20. VIII. 1962 (K. KHALAF); Hilla, Male, 10. VI. 1945, Female, 29. V. 1945 (Museum Munich).

Distribution: Iraq, Iran.

20. **Tabanus pulverifer** WALKER.

Swaratuka, Female. VIII. 1961 (ABUL HAB).

Distribution: Iraq, Iran.

21. **Tabanus regularis rufus** SZILADY.

Hilla, 4 Females, V. 1952; Karbala, Female, March 18. 1952 (ABUL HAB), Shaklawa, Female, VII. 1953 (K KHALAF); Swaratuka, 2 Males 1 Female

VIII. 1961 (ABUL HAB); Aski Kalak, Male, 20. VIII. 1962 (K. KHALAF); Abu Ghuraib (Baghdad), Male, 13. III. 1958 (KATEEB).

Distribution: S. Europe, Caucasus, Asia Minor, Iran, Iraq, Tunisia, Morocco, Cyprus and Corsica.

22. **Tabanus spectabilis** LOEW.

Aski Kalak, Male, 20. VIII. 1962 (K. KHALAF); Arbil Liwa 1 Male, 3 Females, VIII. 1962 (KHALAF); Hinaidai (Baghdad) (AUSTEN, 1923).

Distribution: Iraq, Iran, U.S.S.R. (Kazakstan, Turkmenia, Azerbaidjan. Nakhitichevan, Daghestan, Armenia, Caucasus, Grusien, S.W. Ukraine); Asia Minor, Turkey, Bulgaria, Roumania, Greece, Albania, Jugoslavia, S. Hungary, Italy, Sicily, France (Bouches du Rhöne, Hérault,) Spain, Morocco.

23. **Tabanus strix** SZILADY. → *fenulus* Szil. !

Basra, Female, 10. VII. 1961 (IHSAN AL- SHAHBAZ); Baghdad, Karybenth (SZILADY, 1923).

Distribution: Iraq.

24. **Tabanus sufis** JAENNICKE.

Baghdad, 1 Male, 1 Female, VIII. 1949 at light.

Distribution: *Aethiopian Region*: it is a species of the semi-deserts belts to the south and east of the Sahara; Senegal, Gambia, Nigeria and Chad, Sudan, Ethiopia, Red Sea, Kenya, Tanganyka (OLDROYD, 1954).
Palaearctic Region : Iraq, Iran, Israël, Egypt.

25. **Tabanus tinnunculus** SZILADY.

Swaratuka, 5 Females, VIII. 1961 and 1 Male allotype; Baghdad (SZILADY, 1923); Baghdad, Female. 24. VI. 1962.

Distribution: Iraq.

26. **Tabanus zimini** OLSOUFIEV.

This species is a synonym of T. *luppovae* BARATOV (OLSOUFIEV, *in litteris*, 25. XII. 1962). Swaratuka, Female, VIII. 1961 (ABUL HAB).

Distribution: Iraq, Iran, U.S.S.R. (Azerbaidjan, Nakhitchevan).

SUBFAMILY *TABANINAE*: TRIBE *HAEMATOPOTINI*:

27. **Haematopota pallens** LOEW.

Loc. Zakho, Female, 29. IX. 1956 (Museum Munich).

Distribution: U.S.S.R. (South Ukraine, Crimea, Caucasus, Turkestan, Daghestan, Armenia, Grusien, Azerbaidjan, Nakhitchevan, Kazakstan), Iran, Iraq.

DESCRIPTION OF ALLOTYPE MALE OF *TABANUS FUMIDUS* AUSTEN.

The male of *Tabanus fumidus* AUSTEN had not previously been described; this species belong to the group of *T. cordiger* MEIGEN.

Head.—Eyes bare, area of enlarged facets about two thirds of total eye area, strongly limited from small facets by a colored band (after rehydratation); postocular border narrow with very short white hairs. Frontal triangle with dirty yellow dull top and the rest with whitish pruinosity, yellowish tint near the antennae; face with white pruinosity and pilosity. Antennae: yellowish, third segment with base a little enlarged. Palpi with white pruinosity and pilosity, terminal segment elongated, obtuse, blunt at extremity.

Thorax.— Mesonotum and scutellum dull, whitish pruinosity but a little yellowish on the sutures, whitish pilosity with some blackish hairs. Prealar calus with whitish pruinosity, some blackish hairs. Pleura with white pruinosity and pilosity.

Wings clear, costa mummy brown, other veins tawny olive; basicosta sparsely black haired; r4 with an appendix.

Legs similar to those of the female. Coxae pale neutral-grey pollinose, clothed with fine whitish or silvery white hair; femora, except tips which are cinnamon-buff, neutral grey pollinose, clothed with silvery white hair, middle femora sometimes entirely or mainly cinnamon-buff pollinose, mottled with neutral grey; tibiae cream-coloured or cream-buff (distal thirds or rather less than distal halves of front pair blackish-brown or black), clothed with short silvery white hairs, extreme tips of middle and hind parts, or at any rate of later brownish, at least on inner sides; front tarsi blackish-brown or black, not noticeably expanded or fourth segment very slightly so; middle and hind tarsi mummy-brown and clothed above with minute black hairs, first segment in each case, except tip, more or less cream or cinnamon buff coloured, and clothed above, at least in part except distal extremity, with minute, appressed, silvery white hairs; hind tarsi, except tips of first four segments, sometimes cinnamon-buff, second and following segments of middle tarsi distinctly expanded.

Abdomen.—similar to those of female, but pointed. Second (visible) and three or four following tergites each with a pair of admedian, elongate, slightly oblique blackish-brown marks, resting on front margin in each case but not reaching hind border, second and two or three following tergites also each with a small, oblique, more or less distinct blackish-brown fleck near lateral extremity of the fore border, and near or resting upon anterior margin in each case; ground-colour of sides of second and third, or

second, third and fourth tergites sometimes vinaceous buff; lateral extremities of first (visible) tergite clothed wiih fine whitish hair of moderate length, lateral extremities of five following tergites clothed with silvery hair, short and appressed in case of second and third, longer on the lateral margins of the other three tergites, dark markings clothed, at least in part, with minute, appressed black or blackish-brown hairs, hind border of terminal segment fringed with fairly long, fine black hairs, sometimes mixed with pale hairs; ventral surface of first three or four (visible) segments uniformly smoke grey pollinose, two following sternites, except hind margins, usually darker (mouse-grey), ventral surface of first six segments clothed with minute, appressed, glistening whitish or silvery white hairs, in case of sixth sternite sometimes intersersed with longer blackish hairs, ground colour of hind margins of second to fifth sternites inclusive ivory-yellow, hind margin of sixth sternite cream coloured, hind margins of fourth and two following sternites clothed with longer whitish hair, seventh sternite deep mouse-grey or dark mouse grey, clothed with usual coarse, erect, black hair.

Length.—14-15 mm (excl. antennae).

Allotype Male. — Aski Kalak, 20. VIII. 1962 (K. KHALAF) in the collections of Iraq Natural History Institute.

DESCRIPTION OF ALLOTYPE MALE OF *TABANUS TINNUNCULUS* SZILADY.

The male of *Tabanus tinnuculus* SZILADY had not previously been described; this species belong to the group of *T. tergestinus* EGGER.

Head.—Eyes bare, area of enlarged facets about two thirds of total eye area, strongly limited from small facets by a colored band and a second band under (after rehydratation). Postocular border narrow with very short whitish pubescence. Forntal triangle light yellow, greyish translucent; face light yellow with scarse yellow pubescence. Antennae: reddish yellow, style of third segment a little darkened. Palpi yellowish with white pruinosity, long whitish pilosity with some black hairs, terminal segment enlarged and pointed, not swelled.

Thorax.—Mesonotum and scutellum dark, sides of mesonotum yellowish: dense yellowish grey pilosity; prealar calus yellow reddish, Wings without markings, slightly smoky, with brown and red veins; basicosta with black hairs; r4 without appendix.

Legs similar to those of the female, reddish yellow, the front legs darker towards their end, all tarsi darker.

Abdomen.—similar to those of female, but pointed, reddish yellow, only some narrow dark grey, because of the pruinosity a scarcely conspicuous, row of spots shows in the fore part the rest of a dorsal middle stripe.

Length.—14-15 mm (excl. antennae).

Allotype Male. Swaratuka, VIII. 1961 (ABUL HAB) in the collections of Iraq Natural History Institute.

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(خلاصـــة)

مجموعة من فصيلة « ذباب الخيل » (الحشرات الثنائية الاجنحة) فى العراق

للدكتور مارسيل لكلارك (بلجيكا)

كان معهد التاريخ الطبيعى قد ارسل مجموعة من حشرات « ذباب الخيل » التى جمعت فى العراق الى الاخصائى البلجيكى الدكتور مارسيل لكلارك فتفضل مشكورا بتشخيصها واعادتها الى المعهد ، كما وضع هذا التقرير العلمى عنها • وقد اظهر هذا التقرير ان مجموعة المعهد احتوت على ٢٧ نوعا وضربا من هـــذه الفصيلة مع ذكرين من نوعين مختلفين قام الاخصائى المذكور بوصفهما خدمـة للعلم •

ان اهمية هذه المجموعة تتجلى فى حقيقة ما اشار اليه المؤلف من قلة ما سبق ان عرف من الانواع الموجودة فى العراق من هذه الفصيلة ، بحيث بات يعتقد ان ثمة (٣) او (٤) انواع اخرى فقط يمكن ان تسجل فى منطقتنا بعد ان ضمت مجموعة المتحف هذا العدد الكبير من الانواع • والطريف فى هـــذا التقرير تناوله الاهمية الطبية لهذه الحشرات •