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Hemiptera of Egypt, with remarks on some species of the adjacent Eremian region

R. LINNAVUORI

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I. Introduction

On a grant from the Finnish State Committee for Natural Science and the Finnish Academy of Sciences my wife, Mrs. Raija Linnavuori and I were able to make two entomological excursions to Egypt, from June to August 1961 and again in September 1962. The aim of these expeditions was to collect insect material from the different parts of the country for a survey of the Hemipterous fauna of Egypt.

In 1961, when we had to use public communications, studies were carried on in the Delta and the Nile Valley (the main collecting places: the vicinity of Cairo, the Canal Zone, Assiut and Luxor), in the Fayoum Oasis and in the coastal region near Alexandria. In 1962, when the trip was made in our own car, studies were mainly made in more remote areas: Sinai, the Red Sea Coast, the Eastern Desert and the Kharga and Dakhla Oases in the Western Desert. Unfortunately, time did not permit us to visit the Siwa Oasis, but from there a large amount of material had been collected by an English expedition in 1935. On our trips a comprehensive number of specimens was assembled, which are treated in the following parts of this paper.

When comparing the results with the records of earlier expeditions to Egypt, one is struck by the fact that several species even recorded as

common by them were not found by us at all. The main reason for this is the strong overcultivation of all suitable areas in Egypt. Owing to this the original vegetation has been entirely replaced by cultural biotopes, apart from some very small vestiges right at the border of the desert. Consequently, the original insect fauna has also been more or less replaced by cosmopolitan species characteristic of cultivated biotopes all around the Mediterranean. This has happened nowadays not only in the Nile Valley and Fayoum but also in the farther oases of Kharga and Dakhla. The only areas where the original vegetation and fauna have still survived are Sinai and certain areas in the deserts, e.g. near the Cairo – Suez desert road. It is notable that several insect species mentioned from Egypt in previous records were found to be common in the desert and semidesert areas of the Sudan, where the original vegetation is still comparatively untouched. Another very regrettable thing was that military precautions greatly restricted our possibilities to visit certain areas. In 1963 we were not allowed to continue work in the country.

The Heteroptera of Egypt have recently been treated in two important papers (PRIESNER & ALFIERI 1953, PRIESNER & WAGNER 1961). On the leafhoppers, on the contrary, very little has been published (MATSUMURA 1908 and 1910, HORVATH 1911, W. WAGNER 1954). In the present paper the species from the Jebel Elba area (recorded as Egyptian in the two first-mentioned publications) have been excluded, since the area belongs to Egypt neither politically nor biologically. Although adjacent to the Egyptian border in the Sudan, it is subject to special climatic conditions, with an annual rainfall remarkably higher than the surrounding parts of the Red Sea Mountains and is thus comparable with the more southern »mistoasis» Erkowit. Its fauna and flora therefore largely consist of the Ethiopian element, which is not found to the same extent in the other areas of the Red Sea Mountains. My material from Jebel Elba will be treated in my paper on Sudanese Hemiptera.

II. Taxonomy and distribution of the species treated

The species mentioned in the two main publications on the Hemiptera of Egypt (PRIESNER & ALFIERI 1953, PRIESNER & WAGNER 1961) and not found by the author have been included only in the distributional list (p. 345). On the contrary, the finds reported in some minor papers but omitted in these two publications have been included in the following treatment.

1. Heteroptera

Cydnidae

Aethus Dl.

A. pilosulus (K.) – Assiut, many, 30. – 31. VII. 1961; Cairo, some, IX. 1962; Dakhla, some, 20. – 21. IX. 1962; Kharga, some, 19. – 22. IX. 1962; Luxor, 1 spec., 26. – 28. VII. 1961; Mersa Matruh (HOBERLANDT 1953, p. 359); Sokhna, some, 16. VI. 1961. Common at lamps. In sand under desert plants.

A. pallidus (Pt.) – Mersa Matruh and Siwa (HOBERLANDT *op. cit.*, p. 359).

Byrsinus Fb.

B. brevicornis E. Wgn. – Gebel Asfar (E. WAGNER 1946 a, pp. 79 – 81).

Macroscytus Fb.

M. brunneus (F.) – Meadi, 2 spec., 12. VI. 1961; Mersa Matruh (HOBERLANDT *op. cit.*, p. 359); Kharga, 1 spec., 19. – 22. IX. 1962. At lamps.

Geotomus M.R.

G. intrusus E. Wgn. – Assiut, 1 spec., 30. – 31. VII. 1961. At lamp.

Cydnus F.

C. aterrimus (Fst.) – Mersa Matruh (HOBERLANDT *op. cit.*, p. 359).

Amaurocoris Stål

A. curtus (Br.) – Sinai, Wadi Feiran, 2 spec., 25 – 29. IX. 1962; Sokhna, 1 spec., 16. VI. 1961. In sand under desert plants.

Sehirus H.S.

S. melanopterus (H.S.) – Siwa (HOBERLANDT *op. cit.*, p. 359).

Ochetostethus Fb.

O. sahlbergi E.Wgn. – Cairo, 1 spec., U. Saalas.

Plataspididae

Coptosoma Lp.

C. sandahli Rt. – Originally described on the basis of a series found from Assuan (specimens in the British Museum, Mus. Zool. Helsinki, etc.), but never found since. I collected a couple of specimens near Wadi Halfa from *Rhynchosia memnonia*, 15. X. 1962.

Pentatomidae

Odontoscelis Lp.

O. seminitens E. Wgn. – Giza, 1 spec., 10. – 19. VI. 1961. Under grasses in a sandy field.

O. tomentosus (Gm.) – Near Sokhna, 12. VI. 1961. Under desert plants in a stony place.

Irochrotus A.S.

I. montandoni Schtd. – Cairo, 1 spec., U. Saalas.

Alphocoris Gm.

A. larinoides Gm. – Giza, many, 10 – 19. VI. and 1. – 3. VIII. 1961, IX. 1962. On *Panicum turgidum* in a sandy place at the border of a desert.

Odontotarsus Lp.

O. caudatus (Bm.) – Heluan, 1 spec., 9. IX. 1962; Luxor, 1 spec., 27. VII. 1961. Swept from grasses in sandy places.

O. armiger Kir. – Sinai, Wadi Feiran, 1 spec., 25. – 29. IX. 1962. Swept from desert plants. New to Egypt. Previously known from Turkestan and Turkey.

Tarisa A.S.

T. camelus Rt. – Sinai, Wadi Feiran, 2 spec., 25. – 29. IX. 1962. On *Haloxylon salicornicum*.

T. subspinosa (Gm.) – Fayoum, some, 14. VI. 1961. On halophytic Chenopodiaceae on the shore of a salt lake.

Ventocoris H.

V. fischeri (H.S.) – Mt. Mokattam, 1 spec., A. Sahlberg.

Putonia Stål

P. torrida Stål – Cairo, 1 spec., U. Saalas; Heluan, 2 spec., U. Saalas.

Leprosoma Bär.

L. reticulatum (H.S.) – Fayoum, spec., U. Saalas.

Tholagmus Stål

T. chobauti Pt. – Cairo-Suez desert road, 1 spec., 14. – 15. IX. 1962. On *Pityranthus tortuosus*.

Phricodus Spin.

P. aegyptiacus Izz. – Near Sokhna, 1 spec., 15. IX. 1962. Swept from Labiatae.

Mecidea Dl.

PRIESNER & ALFIERI (*op. cit.*) recorded from Egypt the species *M. pallida* Stål and *M. ingramsi* Ch. WAGNER (1957, p. 9) has synonymized *M. ingramsi* with *M. pallidissima* J. Hrp. *M. pallida* sensu PRIESNER & ALFIERI is most probably *M. lindbergi* E. Wgn., to which also all Palestinian *pallida* specimens belong (LINNAVUORI 1960, p. 10). Unfortunately I have not seen any material of the genus from Egypt.

Sciocoris Fn.

S. conspurcatus K. – Sinai, Wadi Feiran, 1 spec., 25. – 29. IX. 1962; Sokhna, 2 spec., 15. IX. 1962. From *Zygophyllum*.

The species has a Holomediterranean distribution. There are, however, differences between the specimens from Israel and Egypt on the one hand and those from the South of France on the other. I regard the last-named as a separate geographical subspecies which is described below:

conspurcatus nominate form

1. Smaller, ♂ 4.0 – 4.25 mm., ♀ 5.25 – 5.70 mm.
2. Ground colouring whitish yellow.
3. Puncturing of upper surface dark only on head and anterior part of pronotum, otherwise light fuscous or nearly concolorous, considerably finer and partly (e.g. in anterior part of pronotum) sparser.
4. Lateral margins of corium strongly curved, not only connexivum, but also parts of the 5th and 6th tergites visible.
5. Connexivum slightly convex, with only slight fuscous markings.
6. Puncturing of venter relatively light.
7. Antennae light ochraceous.
8. Legs nearly unicolorous, light stramineous.

ssp. *majusculus* ssp. n.

1. Considerably more robust, ♂ 5.0 – 5.25 mm.
2. Ground colouring greyish ochraceous.
3. Puncturing of upper surface dark fuscous, deep and more dense.
4. Lateral margins of corium less curved, only connexivum visible.
5. Connexivum somewhat concave, with distinct dark fuscous markings, puncturing somewhat coarser.
6. Puncturing of venter dense and dark fuscous.
7. Antennae darkened apically.
8. Legs, especially femora, with dark dots.

France: Le Lavandou, 1 ♂ type, 1 ♂ paratype, 17. X. 1955, Pinker.

S. angusticollis Pt. – El Arig (HOBERLANDT *op. cit.*, p. 360).

S. helferi Fb. – Giza, many, 10. – 19. VI. 1961. Under grasses in a dry sandy field.

S. sahlbergi E. Wgn.

Sciocoris scutellaris SCHMIDT 1939, p. 365 – 368, nom. praeocc.

Sciocoris sahlbergi E. WAGNER 1952, p. 77 – 80, syn. n.

Sciocoris clypeatus STICHEL 1961, p. 745, syn. n.

Sinai, Wadi Feiran, some, 25. – 29. IX. 1963.

A variable species. The shape of the head and the length of the scutellum are variable even in specimens from the same locality. I have seen specimens from Libya, Egypt, the Sudan, Israel and Turkey and regard *sahlbergi* as a strict synonym of *scutellaris*. It can be mentioned that SCHMIDT in his original description also reported *scutellaris* from Palestine, the type locality of *sahlbergi*. Since, however, *scutellaris* is a praeoccupied name, *sahlbergi* will be the valid name of the species and *clypeatus*, given as a new name in 1961 by STICHEL, is a synonym.

Dyroderes Spin.

D. umbraculatus (F.) – Mt. Mokattam, 1 spec., J. Sahlberg.

Eysarcoris Hn.

E. inconspicuus (H.S.) – Cairo, many, 10. – 19. VI and 1. – 3. VIII. 1961, and IX. 1962; Cairo – Suez desert road, some, 14. – 15. IX. 1962; Fayoum, many, 14. VI. 1961 and 17. IX. 1962; 50 km. N. of Ismailia, many, 17. VI. 1961; Luxor, 1 spec., 27. VII. 1961; Siwa (HOBERLANDT *op. cit.*, p. 360). Very common, especially in fresher cultivated areas.

Carpocoris Klt.

C. pudicus (Pd.) – Cairo, 1 spec., 10. – 19. VI. 1961. From a field.

Codophila M.R.

C. varia (F.) – Cairo, 1 spec., 10. – 19. VI. 1961. From a field.

Dolycoris M.R.

D. numidicus Hv. – Siwa (HOBERLANDT *op. cit.*, p. 360).

Chroantha Stål

C. ornatula (H.S.) – Near Suez, 1 spec., 14. – 15. IX. 1962; Siwa (HOBERLANDT *op. cit.*, p. 360).

Brachynema Ms.

B. virens (K.) – Siwa (HOBERLANDT *op. cit.*, p. 360).
B. cinctum (F.) – Fayoum, 1 spec., U. Saalas.

Eurydema Lap.

E. ornatum (L.) f. *pictella* Kk. – Cairo, 1 spec., 10. – 19. VI. 1961; 50 km. N. of Ismailia, 2 spec., 17. VI. 1961. From cultivated fields.

Bagrada Stål.

The following species of the genus have been recorded from Egypt and the adjacent Eremian areas (PRIESNER & ALFIERI *op. cit.*, pp. 26 – 28): *B. poecila* Kl., *B. picta* (F.), *B. royeri* Hv., *B. singularis* Hv., *B. amoenula* (Wk.) and *B. deserticola* Hv. In my large material from the area there are only 3 species. Two of them are well-known and easily distinguishable: *B. poecila* from Arabia and *B. picta* from Syria and Arabia. The other species mentioned above have been distinguished only on the colour markings and the body form (HORVATH 1936). The colouring of the *Bagrada* species is extremely variable, however, depending e.g. on the age of the specimens, and there is sexual variability in the body form. I have been able to examine the following material from the Budapest Museum: *B. royeri* v. *picticollis* Hv. holotype from Cairo, *B. singularis* Hv. holotype from Cairo and an authentic specimen of the same from Wadi Digla, Egypt. Moreover, Prof. H. Priesner from Linz has sent me a couple of *B. deserticola* from Wadi Digla and Wadi el Tih, Egypt. A comparison of these specimens with my series from Egypt and Arabia revealed a complete series from the pale-coloured *singularis* type to the dark *royeri* type, with every possible intermediate form. Consequently I am regarding these forms as conspecific. The oldest name is *B. amoenula* WALKER 1870, p. 2340 (= *deserticola* HORVATH 1936, p. 24 and 32, = *royeri* HORVATH 1936, p. 23 and 30, = *singularis* HORVATH 1936, p. 24 and 31, syn. n.).

B. amoenula (Wk.) – Cairo – Suez desert road, some, 14 – 15. IX. 1962; near Sokhna, 2 spec., 15. IX. 1962. From desert vegetation, e.g. *Zygophyllum*.

Nezara A.S.

N. viridula (L.) – Cairo, many, 10. – 19. VI. and 1. – 2. VIII. 1961. Common on fresh cultivated fields.

Acrosternum Fb.

A. millierei (M.R.) – Cairo – Suez desert road, some, 14. – 15. IX. 1962; Kharga, some, 19. – 22. IX. 1962. On cultivated fields. At lamps.
A. heegeri (Fb.) – Cairo, 2 spec., IX. 1962; Meadi, 1 spec., 12. VI. 1961; Siwa (HOBERLANDT *op. cit.*, p. 360). At lamps.

Pausias Jak.

P. leprieuri (Sgn.) – Cairo, 3 spec., U. Saalas; Dakhla, some, 20. – 21. IX. 1962; Deschena, 1 spec., U. Saalas; Kharga, 1 spec., 19. – 22. IX. 1961; Luxor, some, 26. – 28. VII. 1961. On *Acacia* and at lamps.

Coridius Ill.

C. viduatus (F.) – Kharga, 1 spec., 19. – 22. IX. 1962; Luxor, some, J. Sahlberg, On *Citrullus colocynthis*.

Schyzops Spin.

S. aegyptiaca (Lef.) – Cairo, many, 10. – 19. VI. 1961; Luxor, 2 spec., 26. – 28. VII. 1962. On halfa grass.

Coreidae

Arenocoris H.

A. intermedius (Jak.) — Cairo, 1 spec., U. Saalas.

Coriomeris Ww.

C. affinis (H.S.) – Cairo, 2 spec., 10. – 19. VI. 1961; 50 km. N. of Ismailia, many, 17. VI. 1961. On cultivated fields. The subspecies *aegyptiacus* Schmidt is scarcely distinguishable from the nominate form when larger series from different localities are studied.

Alydidae

Nemausus Stål

N. simplex Hv. – Assiut, 1 spec., 31. VII. 1962; Dakhla, 2 spec., 20. – 21. IX. 1962. On *Acacia nilotica* and at lamps.

Nariscus Stål

N. cinctiventris (Gm.) – Luxor, some, 26. – 28. VII. 1961. Swept from halfa grass under *Acacia nilotica*.

Rhopalidae

Liorhyssus Stål

L. hyalinus (F.) – Assiut, 1 spec., 30. – 31. VII. 1961; Alexandria, 1 spec., 5. – 6. VIII. 1961; Cairo, some, 10. – 19. VI. 1961; 50 km N. of Ismailia, 1 spec., 17. VI. 1961; Luxor, 1 spec., 26. – 28. VII. 1961; Mt. Mokattam, 1 spec., U. Saalas; Sinai, Wadi Feiran, 1 spec., 25. – 29. IX. 1962; Siwa (HOBERLANDT *op. cit.*, p. 361).

Stictopleurus Stål

S. riveti Roy. – Sinai, Wadi Feiran, 1 spec., 25. – 29. IX. 1962. Swept from desert vegetation. New to Egypt. Holomediterranean. According to PUCHKOV (1962, p. 142) the subspecies *parvus* Ldb. is a synonym of *riveti*.

Agraphopus Stål

A. lethierryi Stål – Cairo, 2 spec., 10. – 19. VI. 1961; Dakhla, 2 spec., 20. – 21. IX. 1962; Fayoum, 1 spec., J. Sahlberg; Luxor, 3 spec., J. Sahlberg. On cultivated fresher biotopes.

Leptoceraea Jak.

L. femoralis Hv. – Fayoum, 1 spec., 14. VI. 1961.

Lygaeidae

Lygaeus F.

L. longulus Dl. – Mt. Mokattam, 4 spec., U. Saalas.

L. pandurus (Scop.) – Cairo, 1 spec., 10. – 19. VI. 1961; Sokhna, 1 spec., 16. VI. 1961; Siwa (HOBERLANDT *op. cit.*, p. 362).

Hormopleurus Hv.

H. nysioides Hv. – Luxor, many, 26. – 28. VII. 1961. Swept from desert vegetation. Not previously recorded from Egypt. Eremian.

Nysius Dl.

N. (*Tropinysius*) *aegyptiacus* Prn. & Alf. – Cairo, 1 spec., 10. – 19. VI. 1961.

N. (*Macroparius*) *cymoides* (Spin.) – Cairo, some, 10. – 19. VI. 1961, IX. 1962; Dakhla, some, 20. – 21. IX. 1962; Luxor, some, 26. – 28. VII. 1961; Sinai, Wadi Feiran, some, 25. – 29. IX. 1962; Siwa (HOBERLANDT *op. cit.*, p. 362).

N. (*M.*) *graminicola* (Klt.) (incl. v. *karaganus* Hob.) – Alexandria, some, 5. – 6. VIII. 1961; Cairo, many, 10. – 19. VI. 1961, IX. 1962; Cairo – Suez desert road, some, 14. – 15. IX. 1962; Fayoum, many, 13. – 14. VI. 1961; 50 km N. of Ismailia, many, 17. VI. 1961; Luxor, many, 26. – 28. VII. 1961; Sokhna, many, 16. VI. 1961.

Camptocoris Pt.

C. longicornis (Pt.) – Dakhla, some, 20. – 21. IX. 1962; Sinai, Wadi Feiran, some, 25. – 29. IX. 1962. From desert vegetation.

Cymus H.

C. minutus Ldb. – Fayoum, many, 13. – 14. VI. 1961; 50 km N. of Ismailia, many, 17. VI. 1961; Kharga, 1 spec., 19. – 22. IX. 1962; n Suez, many, 16. VI. 1961. Common in damp places on *Cyperus* sp., *Juncus acutus*, etc.

Cymodema Spin.

C. tabidum Spin. – Fayoum, 1 spec., 13. – 14. VI. 1961; 50 km N. of Ismailia, 4 spec., 17. VI. 1961; near Suez, 1 spec., 16. VI. 1961. Together with the preceding.

Ischnodemus Fb.

I. caspius Jak. – 50 km N. of Ismailia, 2 spec., 17. VI. 1961. Swept from a dense *Phragmites* and *Typha* vegetation.

Stenoblissus E. Wgn. & Slat.

S. nubicus E. Wgn. & Slat. – Fayoum (WAGNER & SLATER 1964, p. 75). Eremian. I have often collected it by sweeping from grasses in the Eremian area of the Sudan.

Engistus Fb.

E. boops (Df.) – Sokhna, many, 15. IX. 1962. Swept from *Suaeda* sp. near the hot springs.

E. exanguis Stål – Cairo, 3 spec., U. Saalas, 1 spec., 10. – 19. VI. 1961; Cairo – Suez desert road, many, 14. – 15. IX. 1962; Heluan, 2 spec., U. Saalas; Mt. Mokattam, 3 spec., U. Saalas; Sinai, Wadi Feiran, some, 25. – 29. IX. 1962; Suez, 1 spec., 16. VI. 1961. Common in desert vegetation of various kinds (*Panicum*, *Haloxylon* etc.).

Geocoris Fn.

G. (*Piocoris*) *luridus* (Fb.) – Luxor, 2 spec., 26. – 28. VII. 1961; Siwa (HOBERLANDT *op. cit.*, p. 362). On Tamarix.

G. (*P.*) *nebulosus* Mtd. – As pointed out by me previously (LINNAVUORI 1962, p. 76), *G. aurantiacus* Bgv. is a synonym of *G. nebulosus* Mtd.

Assiut, some 30. – 31. VII. 1961; Cairo, 1 spec., J. Sahlberg; Fayoum, 1 spec., U. Saalas; Kharga, 1 spec., 19. – 22. IX. 1962; Luxor, some, 26. – 28. VII. 1961; near Sokhna, many, 15. IX. 1962. On different *Acacia* species. Common.

G. (s. str.) *scutellaris* Pt. – Cairo, 2 spec., 10. – 19. VI. 1961; Luxor, many, 26. – 28. VII. 1961; Sinai, Wadi Feiran, some, 25. – 29. IX. 1962; near Sokhna, some, 15. IX. 1962. On cultivated fields and on desert vegetation.

G. (s. str.) *acuticeps* Sgn. – Luxor, 2 spec., 26. – 28. VII. 1961.

G. (s. str.) *pallidipennis* (C.) – Cairo, some, 10. – 19. VI. 1961; Fayoum, 1 spec., 13. – 14. VI. 1961; Luxor, some, U. Saalas, 1 spec., 26. – 28. VII. 1961. On cultivated fields.

G. (s. str.) *timidus* Pt. – Suez, 1 spec. in coll. Reuter.

G. (s. str.) *siculus* (Fb.) – Cairo, some, 10. – 19. VI. 1961, IX. 1962; Fayoum, 1 spec., J. Sahlberg, some, 13. – 14. VI. 1961; Luxor, 1 spec., J. Sahlberg, some, 26. – 28. VII. 1961. Common on cultivated fields. All specimens belong to f. *deserta* Mtd. which might be a geographical subspecies (lighter, puncturing of pronotum denser, hair covering of upper surface longer than in the other forms). It is not quite clear whether G. *siculus* is a valid species or a synonym of *G. megacephalus* (R.).

G. (s. str.) *collaris* Pt. – Alexandria, 2 spec., 5. – 6. VIII. 1961; Cairo, 1 spec., U. Saalas; Heluan, 1 spec., U. Saalas; Fayoum, some, U. Saalas, 1 spec., 14. VI. 1961. Under halophytic shrubs in the Mediterranean coast near Alexandria.

G. (str.) *hispidulus* Pt. – Cairo, 2 spec., J. Sahlberg; Cairo, Ghiza, 2 spec., 1. – 2. VIII. 1961. Under *Echinops spinosissimus* in a sandy place.

G. (s. str.) *nigriceps* Rt. – Cairo, some, U. Saalas, some, 10. – 19. VI. 1961 and IX. 1962; Cairo – Suez desert road, some, 14. – 15. IX. 1962; Fayoum, some, J. Sahlberg; Sinai, Wadi Feiran, many, 25. – 29. IX. 1962; Siwa (HOBERLANDT *op. cit.*, p. 362); Sokhna, some, 15. IX. 1962. Common on desert vegetation.

Stenophthalmicus C.

Key to the pale-coloured Oriental species

1 (2) Antennae with long, dark and erect setae (length of setae 0.150 – 0.165 mm.) 3

3 (–) More robust. Antennae more gracile, with less dense hair covering. Pronotum broader, 1.43 × as broad as long. Pronotal calli, although constricted and provided with some coarse punctures, not separated from each other in the middle .. *S. spissicornis* Kir.

– Slenderer. Antennae thicker, with remarkably dense hair covering. Pronotum narrower, 1.2 – 1.3 × as broad as long, with calli distinctly separated in the middle ..... *S. hirticornis* Ldb.

2 (1) Antennae with short and rather smooth hair covering (length of hairs at most 0.09 mm.) 4

4 (5) Antennae remarkably long and gracile, 2nd joint 0.64 – 0.68 × as long as diatone. Puncturing of pronotum very sparse, with only 1 or 2 rows of punctures in apical part before calli .... *S. biskrensis* Pt.

5 (4) Antennae considerably shorter, 2nd joint less than 0.6 × as long as diatone. Puncturing of pronotum more dense 6

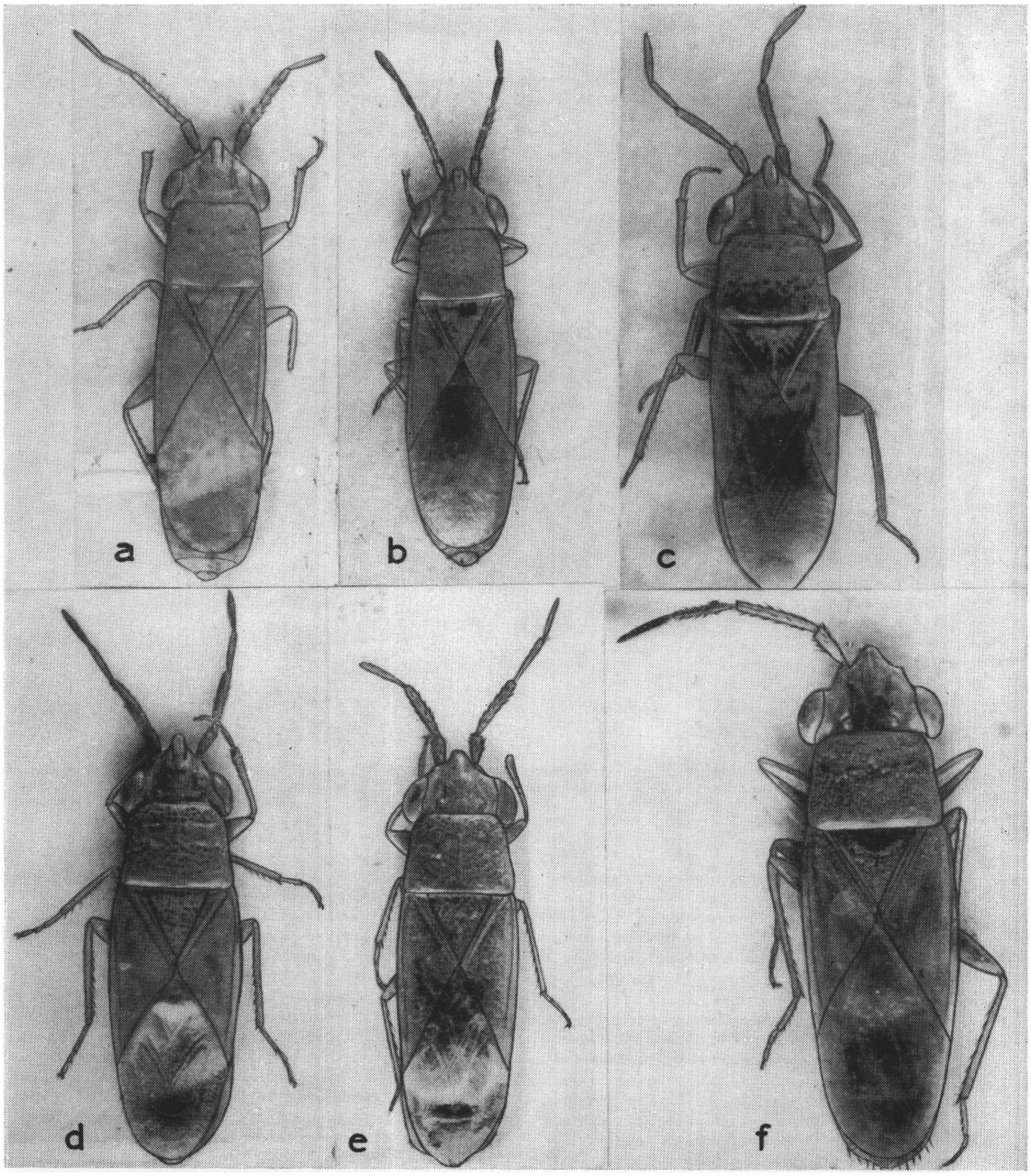

Fig. 1 a = *Stenophthalmicus biskrensis* Pt., b = *S. leptosomus* sp. n., c = *S. hilaris* sp. n., d = *S. panici* Prn., e = *S. punctatulus* sp. n., and f = *S. spissicornis* Kir.

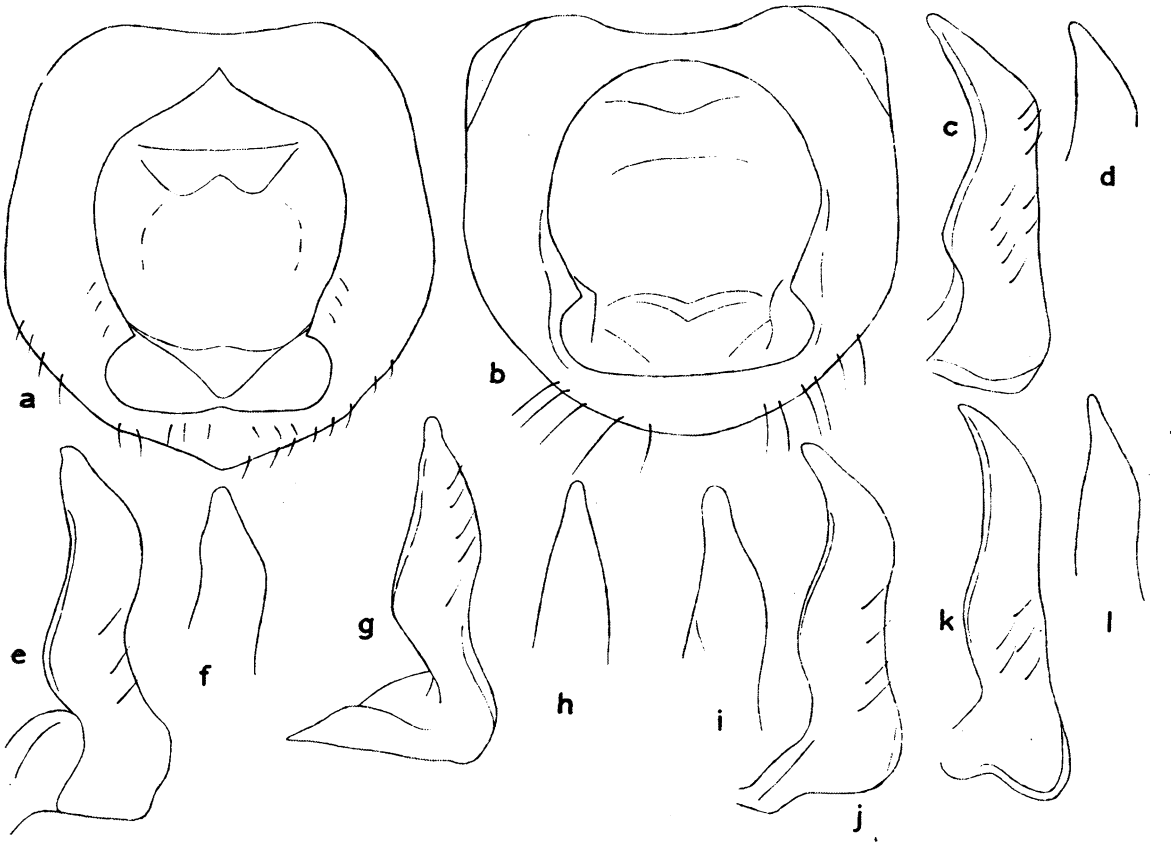

Fig. 2. *Stenophthalmicus biskrensis* Pt.: a genital segment (♂) without styli, caudal aspect; c-d stylus. – *S. leptosomus* sp. n.: b, k-l same. – *S. panici* Prn.: e-f stylus. – *S. hilaris* sp. n.: i-j same.

6 (–) Puncturing of pronotum and scutellum remarkably dense and fine, although deep; median longitudinal puncture rows of pronotum consisting of about 14 punctures ..... *S. punctatulus* sp. n.

– Puncturing of pronotum and scutellum coarse; median longitudinal puncture rows of pronotum consisting of less than 10 punctures 7

7 (8) Elongate, body 4 × as long as broad. Puncturing of pronotum and scutellum sparse; distances between most punctures distinctly longer than the diameter of the punctures ..... *S. leptosomus* sp. n.

8 (7) More robust, body 3.3 – 3.6 × as long as broad. Puncturing of pronotum and scutellum more dense; distance between most punctures as long as the diameter of the punctures or shorter 9

9 (–) Antennae thicker, reddish; breadth of 2nd joint 0.11 – 0.12 mm. ..... *S. panici* Prn.

– Antennae gracile, ochraceous or fulvous ochraceous, only rarely with a slight reddish tinge; breadth of 2nd joint 0.09 mm ..... *S. hilaris* sp. n.

S. biskrensis Pt.

Fig. 1 a. 5.1 – 5.6 mm. Uniformly pale stramineous. Body long and slender, 4.1 – 4.3 × as long as broad. Vertex about 3.32 × as broad as eye. Antennae pale stramineous, long and gracile; proportions between the joints 10 : 23 : 12 : 16 (♂) or 11 : 24 : 12 : 18 (♀); 2nd joint 0.64 – 0.68 × as long as diatone; breadth of 2nd joint 0.09 – 0.11 mm.; hair covering smooth and short, length of hairs of 2nd joint 0.068 – 0.075 mm. Pronotum (Fig. 3) relatively narrow, parallel-sided, 1.13 – 1.14 × as broad as long; puncturing very sparse, particularly in anterior margin, where it is absent in the middle; calli broad and fused to each other in the middle. Membrane shorter than abdomen. Genital opening of pygofer (♂) relatively narrow (Fig. 1 a). Stylus as in Fig. 2 c-d.

Tunisia: El Hamma de Gabés, some, 23. VIII. 1962. On *Panicum* sp. on inland dunes. Recorded also from Egypt, Gebel Asfar (PRIESNER & ALFIERI *op. cit.*, p. 50). Also known from Algeria.

S. leptosomus sp. n.

S. biskrensis LINNAVUORI 1960, p. 37, et auct.

Fig. 1 b. 4.2 – 4.8 mm. Uniformly pale stramineous.

Long and slender, 4 × as long as broad. Vertex 3.0 – 4.0 × as broad as eye. Antennae ochraceous or somewhat infuscate, gracile; proportions between the joints 8 : 16 : 10 : 13 (♂) or 8 : 17 : 11 : 14 (♀), 2nd joint 0.53 × as long as diatone; breadth of 2nd joint 0.09 mm.; hair covering rather smooth, length of hairs of 2nd joint 0.060 – 0.075 mm. Pronotum

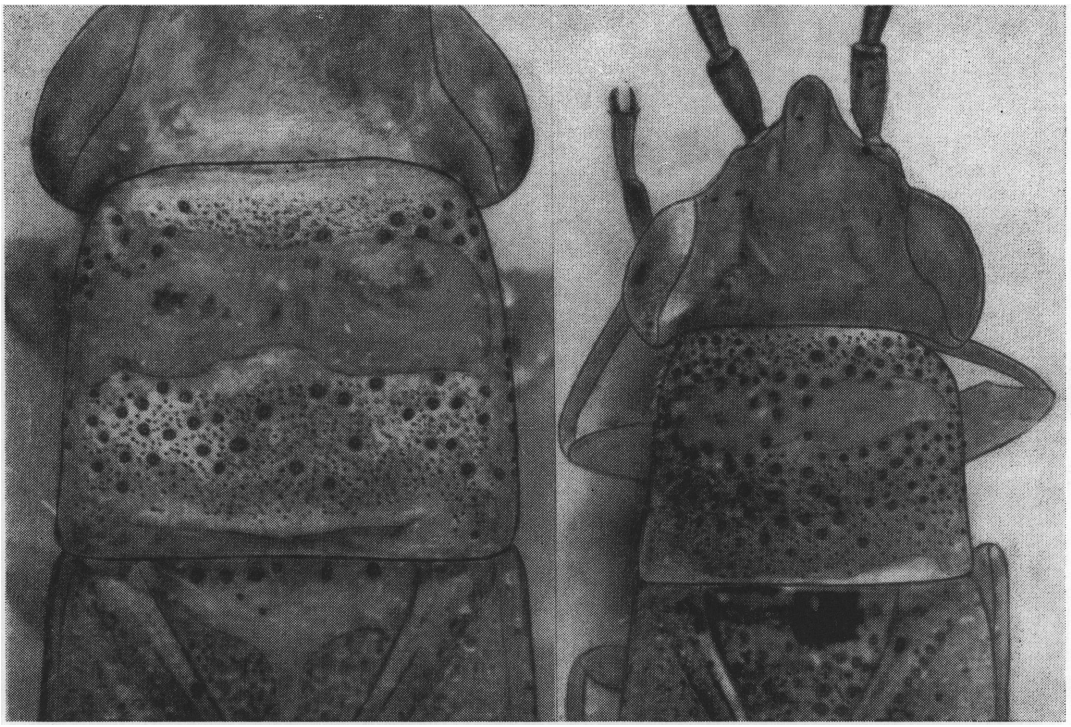

Fig. 3. Pronotum of *Stenophthalmicus biskrensis* Pt. (left) and *S. leptosomus* sp. n. (right).

(Fig. 3) 1.23 – 1.30 × as broad as long, ± distinctly tapering apicad; puncturing coarse and rather sparse, although present in the anterior margin also in the middle; distances between punctures distinctly longer than the diameter of their own; calli broad, fused to each other in the middle. Puncturing of scutellum sparse. Membrane reaching apex of abdomen, Genital opening (♂) (Fig. 2 b) broad. Stylus (Fig. 2 k-l) somewhat slenderer than in the preceding species.

USSR: Turcmenia, 1 ♂ type and 1 paratype, J. Sahlberg; Ashabad, Turcm., 1 paratype, 12. XII. 1932, Vlasov; Bossaga, Amu-Dar, 1 paratype, 1. X. 1931, Uminskij; Buchara merid., Termez., 1 paratype, 23. VI. 1912, Kiritšenko. Israel: Eilat, 1 paratype, 20. IV. 1958, Linnavuori. All types in the author's collection.

Resembling *S. biskrensis* in the slender body, but smaller, antennae shorter, puncturing of pronotum and scutellum much more dense and genital opening of ♂ broader.

S. hilaris sp. n.

Fig. 1 c. 4.4 – 4.7 mm. Uniformly pale stramineous.

Relatively robust, 3.4 – 3.6 × as long as broad. Vertex 2.7 – 2.8 × as broad as eye. Antennae pale stramineous or fulvous, gracile; proportions between the joints 9 : 17 : 12 : 16 (♂) or 9 : 19 : 12 : 16 (♀); 2nd joint 0.52 × as long as diatone, breadth 0.09 mm.; hair covering smooth, length of hairs of 2nd joint 0.060 – 0.075 mm. Pronotum (Fig. 4) 1.33 – 1.34 × as broad as long, rather parallel-sided; puncturing coarse and dense; calli broad, fused (although often provided with a few punctures) to each other in the middle. Scutellum coarsely punctate. Membrane reaching apex of abdomen. Male genitalia as in *S. leptosomus*. Stylus as in Fig. 2 i-j.

Somalia: Near Silil, ♂ type and several paratypes of both sexes, 29. VI. 1963. Swept from *Panicum* sp. on inland dunes.

This and the following two species differ from the preceding two in the distinctly more robust body.

S. panici Prn.

Fig. 1 d. 4.4 – 5.0 mm. Uniformly pale stramineous.

Body as in *S. hilaris*. Vertex 2.4 – 2.8 × as broad as eye. Antennae thick reddish; proportions between the joints 8 : 18 : 12 : 15 (♂) or 9 : 19 : 12 : 15 (♀); 2nd joint 0.52 – 0.54 × as long as diatone, breadth 0.11 – 0.12 mm.; hair covering darker, longer, more erect, length of hairs of 2nd joint 0.060 – 0.090 mm. Pronotum (Fig. 4) 1.23 – 1.30 × as broad as long, parallel-sided, puncturing as in *hilaris*; calli broad, fused to each other, medially without punctures. Scutellum coarsely punctate. Membrane reaching apex of abdomen. Genital opening (♂) as in *S. leptosomus*. Stylus as in Fig. 2 e-f, hypophysis broad.

Cairo, some, 10. – 19. VI. 1961 and IX. 1962. On *Panicum turgidum*.

As *S. hilaris*, but somewhat bigger, with different antennal structure and dissimilarly shaped stylus.

S. punctatulus sp. n.

Fig. 1 e. Uniformly stramineous. Dorsum of abdomen infumed.

Body 3.6 × as long as broad, robust. Vertex 2.8 × as broad

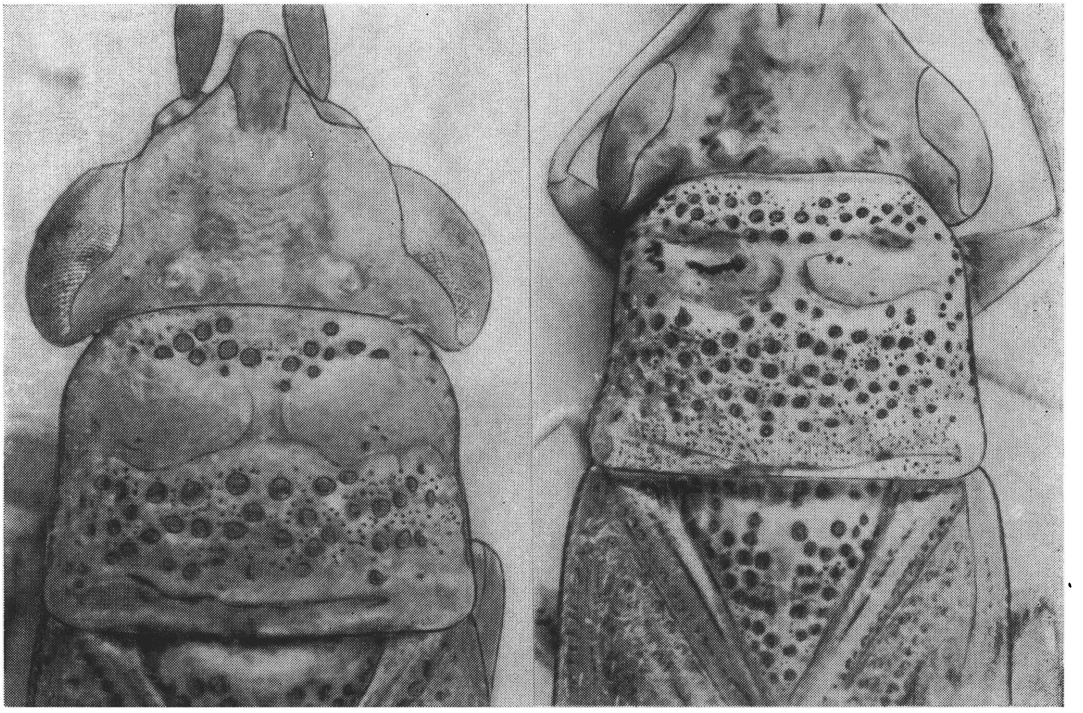

Fig. 4. Pronotum of *Stenophthalmicus hilaris* sp. n. (left) and *S. panici* Prn. (right).

as eye. Antennae reddish and thick as in *S. panici*, but longer; proportions between the joints 10 : 20 : 15 : 17; 2nd joint 0.56 × as long as diatone, breadth 0.12 mm.; hairs dark, long and relatively erect, length of hairs of 2nd joint 0.090 mm. Pronotum (Fig. 5) 1.36 × as broad as long, somewhat tapering apicad; puncturing of pronotum and scutellum fine, although deep and remarkably dense; median longitudinal puncture rows of pronotum consisting of about 14 punctures; calli narrower and less elevated, fused to each other, but interrupted medially by two longitudinal puncture rows. Elytra with 4 puncture rows along claval suture (3 in the preceding species); membrane nearly reaching apex of abdomen.

Arabia: W. Aden Protectorate, Anad, ♀ type and ♀ paratype, 9. – 15. VII. 1963. On *Panicum* sp. on inland dunes.

Resembling *S. panici*, but easily recognized by the puncturing of the upper surface.

S. hirticornis Ldb.

4.8 – 5.6 mm. Uniformly stramineous.

Robust, 3.4 – 3.5 × as long as broad. Vertex 3.1 – 3.3 × as broad as eye. Antennae reddish, thick; proportions between the joints 11 : 20 : 15 : 20 (♂) or 11 : 23 : 17 : 20 (♀); 2nd joint 0.53 – 0.57 × as long as diatone, breadth 0.12 – 0.15 mm; hairs long, dark and erect, length of hairs of 2nd joint 0.150 – 0.165 mm. Pronotum 1.23 – 1.30 × as broad as long, nearly parallel-sided, puncturing somewhat finer and sparser than in *panici*; calli distinctly separated in the middle. Membrane somewhat shorter than abdomen. Genital opening (♂) as in *S. leptosomus*.

Luxor, some, J. Sahlberg, some, 26. – 28. VII. 1961. On *Panicum turgidum*.

S. spissicornis Kir.

Fig. 1 f. 6 mm. Uniformly stramineous.

The largest species of the genus. Body 4 × as long as broad. Vertex 3.1 × as broad as eye. Antennae longer than in *S. hirticornis*, 1st and 2nd joints ochraceous, with a reddish tinge; the other joints purplish; proportions between the joints 13 : 24 : 17 : 20; 2nd joint 0.56 as long as diatone, breadth 0.12 mm; hairs dark, long and erect, length of hairs of 2nd joint 0.150 – 0.165 mm. Pronotum (Fig. 5) 1.43 × as broad as long, somewhat tapering apicad; lateral margins sharply ridged; puncturing somewhat more dense than in *S. hirticornis*; calli fused, although provided with some punctures medially. Membrane somewhat shorter than abdomen.

USSR: Tadzhikistan, Aivadzh, Kafirnigan, 1 ♀, VI. 1944, Kiritshenko.

Artheneis Spin.

A. aegyptiaca Ldb. – 50 km N. of Ismailia, 1 spec., 17. VI. 1961; Fayoum, many, J. Sahlberg; Kharga, some, 19. – 22. IX. 1962; Siwa (Hoberlandt *op. cit.*, p. 362); near Suez, many, 16. VI. 1961. On *Tamarix*. Common.

A. alutacea Fb. – Fayoum, 2 spec., U. Saalas; Kharga, some, 19. – 22. IX. 1962; Sinai, Wadi Feiran, some, 25. – 29. IX. 1962. On *Tamarix*.

Artheneida Kir.

A. tenuicornis Kir. – Near Suez, many, 16. VI. 1961. On

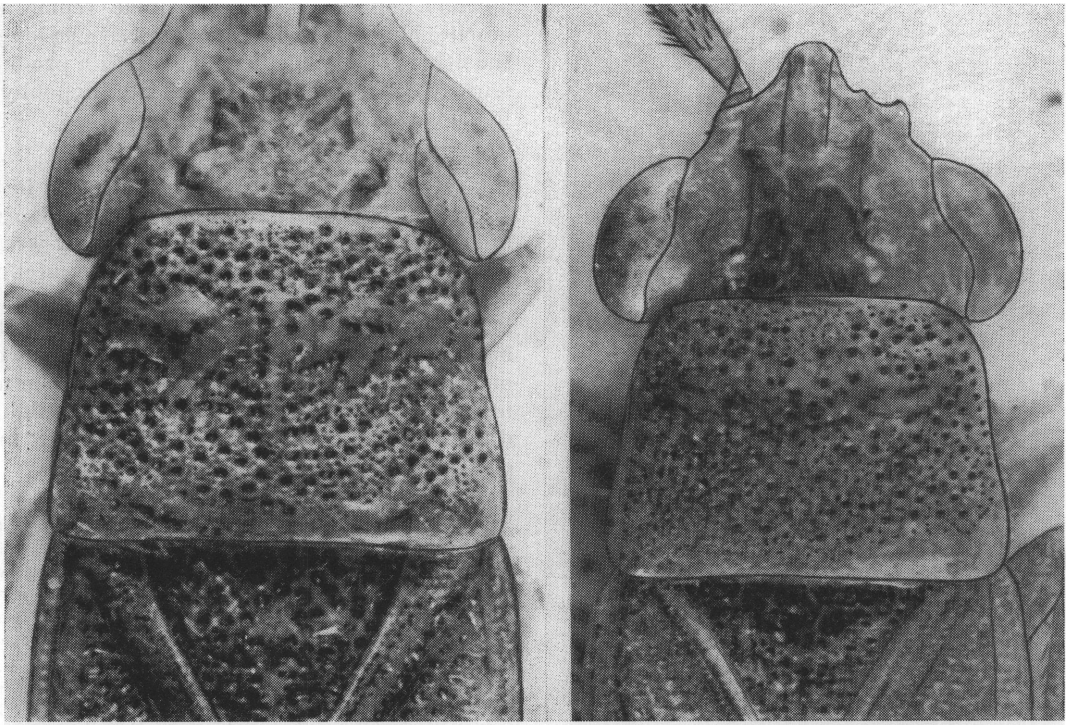

Fig. 5. Pronotum of *Stenophthalmicus punctatulus* sp. n. (left) and *S. spissicornis* Kir.

Tamarix. First record from Egypt. Irano-Turanian. Recorded also from Iraq and Israel.

Holcocranum Fb.

H. karumense Bgv. – Originally described from Fayoum and later recorded from Israel (Linnavuori 1960, p. 37). The species was not mentioned by Priesner & Alfieri (*op. cit.*, p. 51), who, on the contrary, recorded *H. eburneum* Bgv. from Egypt. Most probably, however, it was *H. karumense*; *H. eburneum* has been recorded only from Algeria.

Heterogaster Schl.

H. urticae (F.) – Priesner & Alfieri (*op. cit.*, p. 51) recorded this species from Egypt. Most probably it is *H. longirostris* E. Wgn., to which also the records of *H. urticae* from Israel are to be transferred (Linnavuori 1960, p. 38). Unfortunately, I have not seen material of the genus from Egypt.

Cymophyes Fb.

C. ochroleuca Fb. – Cairo, 1 spec., 10. – 19. VI. 1961; 50 km N. of Ismailia, some, 17. VI. 1961; Fayoum, 1 spec., 13. – 14. VI. 1961. On *Panicum turgidum*.

C. decolor Stål – Cairo, some, J. Sahlberg; Fayoum, 1 spec., J. Sahlberg; Luxor, some, 26. – 28. VII. 1961. On *Panicum turgidum*.

Macropternella Slat.

M. inermis (Fb.) – Cairo, some, 10. – 19. VI. 1961, IX. 1962. In sand under *Echinops* and *Panicum*.

Leptodemus Rt.

L. minutus (Jak.) – Sinai, Wadi Feiran, 1 spec., 25. – 29. IX. 1962; near Sokhna, 16. VI. 1961. Swept from desert vegetation.

Microplax Fb.

M. interrupta (Fb.) – Cairo, 2 spec., J. Sahlberg.

Oxycarenus Fb.

O. hyalinipennis (C.) – Cairo, some, J. Sahlberg; some, 10. – 19. VI. 1961. On *Malvaceae*.

O. pallens (H.S.) ssp. *luteolus* Hob. – Luxor, some, 26. – 28. VII. 1961; near Suez, 1 spec., 15. IX. 1962. Swept from vegetation in dry places.

Remaudiereana Hob.

R. annulipes (Bär.) – Cairo, some, 10. – 19. VI. 1961, IX. 1962; 50 km N. of Ismailia, some, 17. VI. 1961; Luxor, some, 26. – 28. VII. 1961. Under fallen leaves and at lamps.

Tethallotrum Scd.

T. heteronotum (Pt.) – Dakhla, 1 spec., 20. – 21. IX. 1962. Under plants on inland dunes.

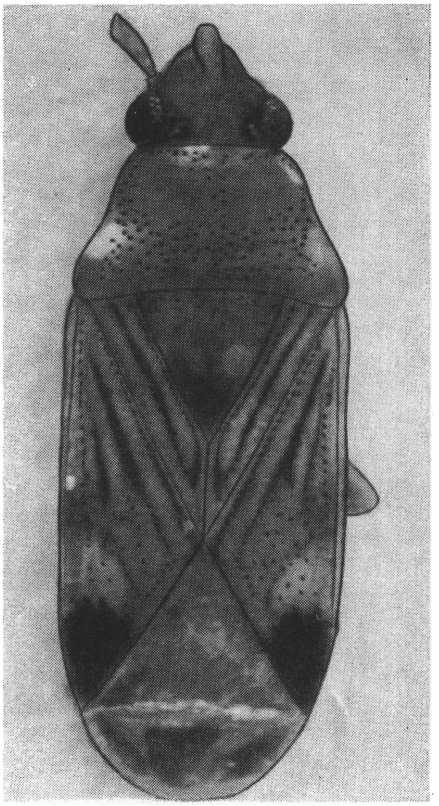

Fig. 6. *Dakhla striipennis* gen. et sp. n.

Dakhla gen. n.

Very small species, superficially resembling *Camptocera* Jak. General colouring golden brown, with longitudinal dark stripes on elytra. Body parallel-sided, depressed, opaquely shining. Glabrous. Head sharply angularly tapering apicad, finely microsculptured, rather dull. Eyes with remarkably large and convex facets. Ocelli present. Ist antennal joint surpassing the apex of the head. Rostrum extending to middle coxae. Pronotum flat, transverse, lateral margins distinctly insinuated in the middle; disk with only very faint microsculpturing; anterior margin, about 3 longitudinal median rows and basal part finely punctate; basal margin slightly insinuated; basal angles somewhat swollen. Scutellum finely punctate. Elytra with membrane extending to apex of abdomen; veins on corium densely punctate, apex of corium and cuneus finely and irregularly punctate. Anterior femora incrassate, ventral margin with a row of several teeth; anterior tibiae slightly curved and broadened apically. Middle and hind tibiae remarkably gracile; hind tarsi with lst joint 1.5 × as long as the other joints together. Styli with a produced sensory lobe and with a falcate hypophysis. Penis with a spiral.

Type: *D. striipennis* sp. n.

Near *Tropistethus* Fb., but differing 1) in the entirely dissimilar colouring, 2) in the glabrous upper surface, 3) in the shining and only weakly microsculptured head, pronotum and scutellum, 4) in the large facets of the eyes, 5) in the longer head, 6) in the depressed body, 7) in the shorter, broader, trapezoidal and flatter pronotum without elevated anterior portion and in the gracile middle and hind legs. From *Camptocera* Jak. it differs in the presence of ocelli, in the male genitalia, etc.

D. striipennis sp. n.

Fig. 7. 2.1 mm. Golden brown. Basal angles of pronotum somewhat infuscate, lateral margins before them with a whitish triangular spot. Elytra whitish, with a yellowish tinge; a golden transverse fascia at apex of clavus; cuneus fuscous; dark stripes following the puncture rows of corium and clavus, giving to the elytra a striate appearance; membrane golden hyaline. Legs pale yellowish.

Small, parallel-sided, 2.5 × as long as broad, depressed. Head (Fig. 7 a) 1.5 × as long as broad, 0.9 as long as pronotum. Vertex 2.6 × as broad as eye. Pronotum 0.5 × as long as basal width. Anterior femora (Fig. 7 b) with a row of 13 teeth. Styli as in Fig. 7 c-d.

Dakhla, 1 ♂ type and 1 ♂ paratype, 20. – 21. IX. 1962. At lamp together with *Camptocera glaberrima*.

Lethaeus Dl.

L. fulvovarius Pt. – Cairo, 1 spec., IX. 1962. At lamp.

Peritrechus Fb.

P. ambiguus Hv. – Cairo, 1 spec., J. Sahlberg.

Emblethis Fb.

E. angustus Mtd. – Cairo, 1 spec., 10. – 19. VI. 1961; Kharga, 1 spec., 19. – 22. IX. 1962. The specimens recorded by PRIESNER and ALFIERI (*op. cit.*, p. 60) as *E. verbasci* (F.) belong without doubt to *E. angustus*. The genuine *E. verbasci* does not occur in the southern parts of the Orient. The specimens recorded by me as *E. verbasci* from Israel (LINNAVUORI 1960,p. 42) likewise belong to *angustus*.

E. griseus (Wl.) – Cairo, 2 spec., 10. – 19. VI. 1961.

E. ciliatus Hv. – Alexandria, some, 5. – 6. VIII. 1961; Cairo, some, 10. – 19. VI. 1961, IX. 1962.

E. gracilicornis Pt.

Emblethis gracilicornis PUTON 1877, p. 117.

Emblethis oblongus E. WAGNER 1959, p. 327, syn. n.

100 km. W. of Safaga, 1 spec., Eckerlein; Dakhla, 1 spec., 20. – 21. IX. 1962.

Camptocera Jak.

C. glaberrima (Wk.) – Assiut, some, 30. – 31. VII. 1961; Dakhla, some, 20. – 21. IX. 1962; Luxor, some, 26. – 28. VII. 1962. Common at lamps.

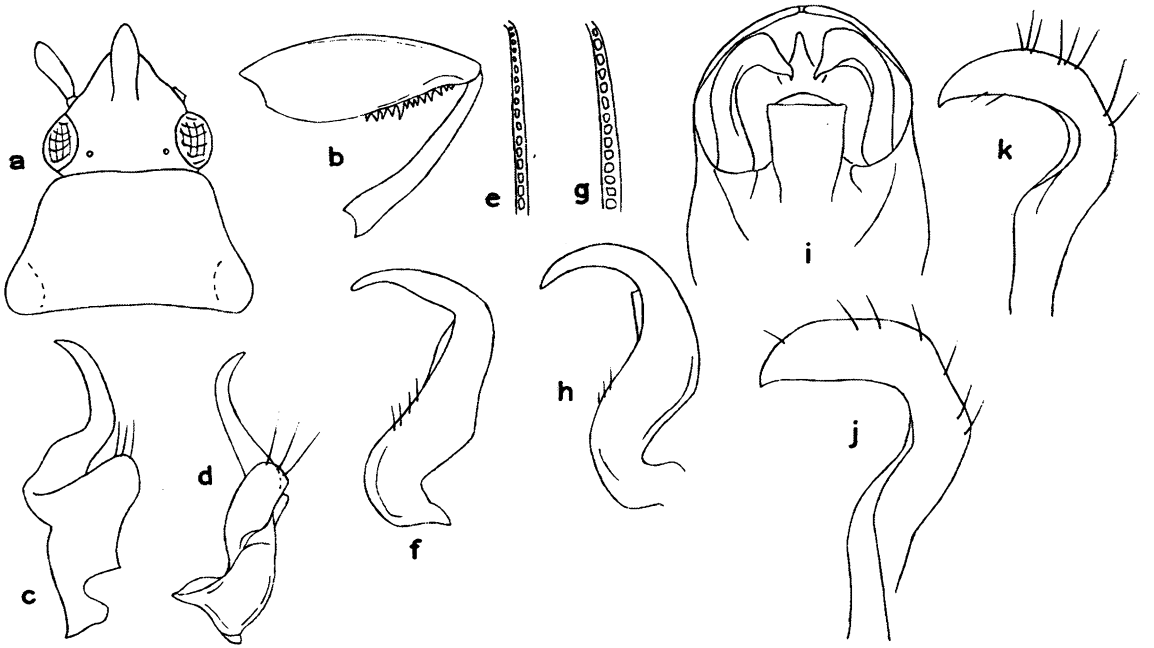

Fig. 7. *Dakhla striipennis* gen. et sp. n.: a head and pronotum; b fore leg; c-d stylus. – *Agramma atricapilla pallens* Hv.: e costal margin of elytron; f stylus. – *A. confluens* sp. n.: g-h same. – *Holotrichius nitidicollis* sp. n.: i pygofer (♂), dorsal aspect. – *Reduvius dorsalis* Stål (type): j stylus. – *R. infirmus* Mill.: k same.

Tingidae

Galeatus Ct.

G. scrophicus Sd. – Alexandria, many, 5. – 6. VIII. 1961; Cairo, some, 10. – 19. VI. 1961; Dakhla, many, 20. – 21. IX. 1962; Luxor, many, 26. – 28. VII. 1961; Sinai, Wadi Feiran, 2 spec., 25. – 29. IX. 1962. Common on desert plants, e.g. *Echinops*.

Urentius Dist.

U. abutilinus Prn. & Alf. – Luxor, 1 spec., 26. – 28. VII. 1961.

Tingis F.

T. rotundipennis Hv. – Cairo, many. 10, – 19. VI. 1961, IX. 1962; Sinai, Wadi Feiran, 1 spec., 25. – 29. IX. 1962. On *Echinops spinosissimus* in sandy places.

Dictyla Stål

D. nassata (Pt.) – Alexandria, 2 spec., 5. – 6. VIII. 1961; Luxor, 1 spec., 26. – 28. VII. 1961.

Monosteira C.

M. priesneri E. Wgn. – Kharga, 4 spec., 19. – 22. IX. 1962. On *Zizyphus spina-Christi*.

M. cleopatra Hv. – Dakhla, many, 20. – 21. IX. 1962; Luxor, many, 26. – 28. VII. 1961.

Agramma (Ww.) Steph.

A. atricapilla (Spin.) ssp. *pallens* (Hv.)

The subspecies has been treated by me (LINNAVUORI 1961, pp. 49 – 50). The stylus is figured here (Fig. 7 f). I have studied a cotype (♀) in coll. Reuter, Fayoum, J. Sahlberg, and labelled it as the lectotype.

A. confluens sp. n.

Belongs to the *atricapilla* group (head longer than high in lateral aspect, body elongate and flat, etc.), but differing from *atricapilla* in the following respects: 1) much smaller, length 2 – 2.4 mm., and robuster, body 3.1 × as long as broad, while 3.5 × in *A. atricapilla*; 2) antennae more gracile, proportions between the joints 5 : 9 : 13 : 6 (♂) or 4 : 25 : 10 : 5 (♀); 3) pronotum uniformly rusty brown, elytra whitish yellow; 4) calli of pronotum smaller and more indistinct; 5) costal membrane relatively broad with well developed cells also basally (Fig. 7 g), while in *A. atricapilla* it is very narrow basally, with only minute cells (Fig. 7 e); 6) exo- and mesocorium separated from each other by a distinct ridge (although less sharp than in *A. tropidoptera* Fl.); 7) mesocorium with 4 rows of punctures at the level of the scutellar apex of the pronotum, with 6 rows in *A. atricapilla*, and 8) stylus (Fig. 7 h) curved more roundedly.

Fayoum, 1 ♂ type, many paratypes, 13. – 14. VI. 1961; Dakhla, some paratypes, 20. – 21. IX. 1962. Swept from *Juncus* and different grasses.

Sabestena Dr.

S. alfierii Dr. & Ruh. – Wadi Nouega, Galala (DRAKE & RUHOF 1961, pp. 166 – 167.).

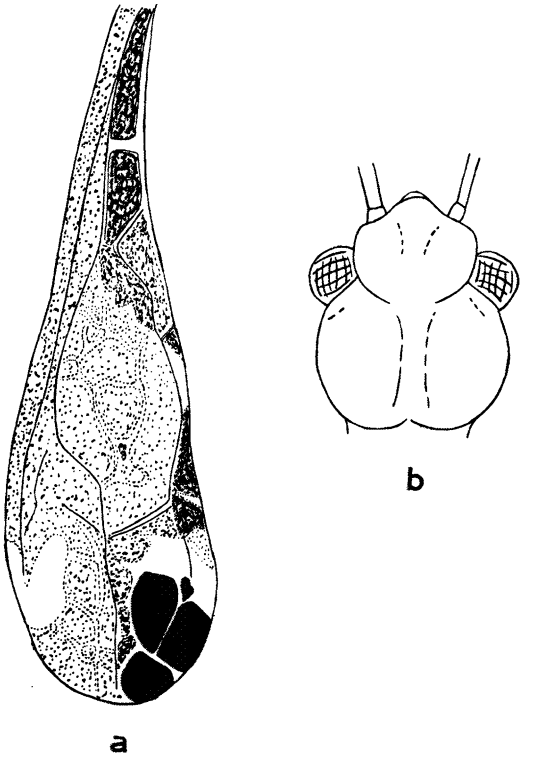

Fig. 8. *Empicoris litoralis* sp. n.: a elytron, b head and pronotum.

broad. Fore tibiae with 2 narrow basal and 2 broad apical dark brown rings. Fore tarsi dark. Middle and hind legs annulated with dark brown.

A small species. Head slightly broader than long, 0.9 × as broad as pronotum. Vertex 1.38 × as broad as eye. Anterior lobe slightly shorter than the posterior one (5 : 5.5), posterior lobe strongly globose. Proportions between the antennal joints 50 : 44 : 12 : 10. Pronotum moderately broadening caudad, 1.1 × as long as broad, lateral margins faintly insinuated; anterior lobe moderately swollen, with a median triangular depression; posterior lobe 1.25 × as long as anterior, convex; basal margin with a short median tubercle as in *E. brevispinus*. Scutellar spine straight and rather long. Length of elytra 2.7 mm. Legs as in *E. brevispinus*.

Type, a male, and some paratypes, near Alexandria, 5. – 6. VIII. 1961. Under *Juncus acutus* in coastal dunes.

Very similar to *E. brevispinus* (Pt.), but differing in the shape of the head, the longer posterior lobe of the pronotum, the colouring of the elytra, etc.

Tinna D.

T. grassator (Pt.) – Fayoum, 2 spec., Saalas.

Oncocephalus K.

O. pilicornis (H.S.) – Cairo, 3 spec., 1. – 2. VIII. 1961, IX. 1962. At lamp.

O. obsoletus K. – Luxor, 2 spec., 26. – 28. VII. 1961. At lamp.

O. fasciatus Rt. – Siwa (HOBERLANDT *op. cit.*, p. 363).

O. fokkeri Hv. – Siwa (HOBERLANDT *op. cit.*, p. 363).

Dasycnemus Bg.

D. sahlbergi Bg. – Cairo – Suez desert road (WYGODZINSKY & USINGER 1963, p. 50). In rodent burrows (*Meriones* sp.). I have often collected it at a lamp in the Sudan.

Reduviidae

Empicoris Wf.

E. litoralis sp. n.

Fig. 8. Length 3.30 – 3.45 mm. Ground colouring dark brown. Head uniformly dark coffee-brown, with silvery hairs. Antennae pale greyish; 1st joint with 8 dark brown rings, the apical ones being distinctly broader than the greyish rings. 2nd joint with the apical third dark brown and the basal two-thirds with 5 dark brown rings being somewhat broader than the greyish ones. The apical joints uniformly dark brown. Hair covering of antennae semierect, pale. Rostrum pale ochraceous, 1st joint with base and a transverse ring dark brown. Pronotum dark coffee-brown, laterally and basally margined with white; disk with 2 obscure lighter longitudinal bands; anterior lobe with 6 rows of silvery hairs, basal portion with only scattered hairs of the same colour. Scutellum dark brown. Elytra with basal part of corium brown, interrupted by whitish veins; pterostigmal area dark brownish, interrupted by a triangular narrow pale area, apex pale; outer lateral corner of membrane with 3 large blackish brown areas; other parts of elytra pale brownish with a net of whitish veins; membrane with a triangular whitish area on either side. Paratergites pale with dark markings. Under surface dark coffee-brown. Legs pale greyish. Anterior coxa with a brown transverse ring. Fore femora with 4 dark rings, the proximal and apical ones being

Stirogaster Jak.

Key to the species

1 (4) Pronotum unicoloured, piceous to dirty yellowish brown; anterior lobe at most slightly lighter than posterior 2
2 (3) Humeral angles of pronotum sharp (Fig. 9 c) ..... *S. fausti* Jak.
3 (2) Humeral angles of pronotum obtuse (Fig. 9 d) ..... *S. fausti* var. *obtusangulus* var. n.
4 (1) Pronotum distinctly bicoloured 5
5 (6) Pronotum pale sordid yellow with humeral angles and middle of basal margin infuscate ..... *S. uvarovi* Ch.
6 (5) Anterior lobe of pronotum pale yellowish, basal lobe entirely piceous 7
7 (8) Small species, length 7.5 mm. *S. ruttledgei* Mill.
8 (7) Larger species, length > 10 mm 9
9 (10) Head remarkably broad, 0.63 × as broad as basal width of pronotum; vertex 1.27 × as broad as eye ..... *S. laticeps* sp. n.
10 (9) Head smaller, 0.56 × as broad as pronotum; vertex 1.36 – 1.38 × as broad as eye ..... *S. desertorum* Hv.

S. herzi JAKOVLEV 1893 belongs, according to a letter from Dr. Kerzhner from Leningrad, to the genus *Oncocephalus* K.

S. laticeps sp. n.

1. Head remarkably broad, 0.63 × as broad as basal width of pronotum.
2. Vertex 1.27 × as broad as eye, with the medio-apical tubercles shorter and thicker.
3. Anterior lobe of pronotum censiderably broader.
4. Ist antennal joint somewhat shorter, 0.9 × as long as diatone.
5. Anterior femora (Fig. 9 b): tubercles of the anterior margin distinctly of two sizes, the small ones each bearing a long seta.
6. Hind legs shorter, femur 3.45 mm., tibia 3.75 mm.

S. E. Iran: Djiroft, Anbar-Abad, 1 ♂ (type), 21. – 30. IV. 1956, Richter.

S. desertorum Hv.

1. Head smaller, 0.56 × as broad as basal width of pronotum.
2. Vertex 1.36 – 1.38 × as broad as eye, with the medio-apical tubercules longer and thinner.
3. Anterior lobe of pronotum narrower.
4. Ist antennal joint 1.1 – 1.3 × as long as diatone.
5. Anterior femora (Fig. 9 a): tubercles of the anterior margin of nearly the same size, the smaller bearing an apical tooth each.
6. Hind legs longer, femur at least 3.75 mm, tibia 4.35 mm.

Algeria: S. of Ghardaia, 1 ♂ (type) in the Budapest Museum. Iran: Makran, Novadzh Mataseng, 1 ♂, 31. III. 1901, Zarudnyi (labelled as *S. dimidiatus* Kiritshenko, but certainly only a manuscript name). Iran: Baluchistan, Iranshar, 800 m a. l. s., 1 ♂, 11. – 21. IV. 1954, Richter and Schäuffele.

Priesner & Alfieri (*op. cit.*, p. 73) record one *Stirogaster* species of the *desertorum* group from Egypt.

S. fausti Jak.

Latero-basal angles of pronotum (Fig. c) sharply prominent, concealing the corresponding lateral surface of pronotum in dorsal view.

USSR: Buhara, Kamtsashi near Guzara, 1 spec., Gussakovskij; Dort-Kuju, 1 spec. (det. Jakovlev), 5. V. 1889, Sakenov. Iran: Baluchistan, Sangun, E. Kuh i Taftan, 1 spec., 4. – 18. VI. 1954, Richter.

S. fausti Jak. var *obtusangulus* var. n.

Latero-basal angles of pronotum (Fig. 9 d) bluntly rounded, distinctly shorter than the corresponding part of the lateral surface of pronotum in dorsal view.

USSR: Turcmenistan, Tahta-Bazar, 1 ♂ (type), 29. VI. 1930, V. Popov.

Holotrichius Bm.

H. innesi Hv. – According to Dispons (1962, p. 3) a valid species.

H. nitidicollis sp. n.

Much as *H. philbyi* Mill., but 1) pronotum with anterior part considerably smaller, with only a faint pattern, unicoloured dark coffee-brown, posterior portion remarkably shining and convex, with only a faint transverse wrinkling, caudo-lateral angles more rounded and lateral margins distinctly curvate (nearly straight in *H. philbyi*), 2) scutellum less elevated and dark, 3) connexivum dorsally unicoloured, ochraceous, 4) legs dark brown, only fore and middle tibiae yellowish brown, 5) genital segment (Fig. 7 i) parabolically produced caudad in dorsal aspect (truncately rounded apically in *H. philbyi*).

Some measurements: Length 18.2 mm. Head 0.62 × as long as pronotum; proportion between anterior and posterior lobes 50 : 13; vertex 1.56 × as broad as eye. Pronotum 0.7 × as long as broad; anterior lobe 0.62 × as long as posterior.

Colouring: uniformly dark coffee-brown; connexivum pale ochraceous; anterior and middle tibiae yellowish brown.

To be placed after *H. philbyi* in Dispons' (1962, p. 36) key.

Reduvius F.

R. minutus Rt. – Siwa (Hoberlandt *op. cit.*, p. 363).
R. pallipes (K.) – Siwa (Hoberlandt *op. cit.*, p. 363).
R. jakovlevi Rt. – Siwa (Hoberlandt *op. cit.*, p. 363).
R. ustulatus Mill. – W. Fawakheir (Miller 1955, p. 70).

R. dorsalis Stål

♂ 12.8 mm. Head dark brown, with a whitish spot near ocellus. Antennae pale stramineous. Pronotum reddish brown, dull. Scutellum reddish brown, apex stramineous. Elytra pale stramineous; apical part of corium with a dilute brown transverse band; another transverse dilute brown band in membrane, both bands connected with a longitudinal band of the same colour; membrane otherwise whitish. Paratergites unicoloured, pale. Abdomen stramineous, partly infuscate. Under surface of thorax dark. Legs uniformly pale stramineous.

Vertex 0.71 × as broad as eye. Lower margin of eyes relatively narrowly separated (as in *R. tabidus*). Interspace narrower than ocellus. Pronotum 1.25 × as broad as long. An-

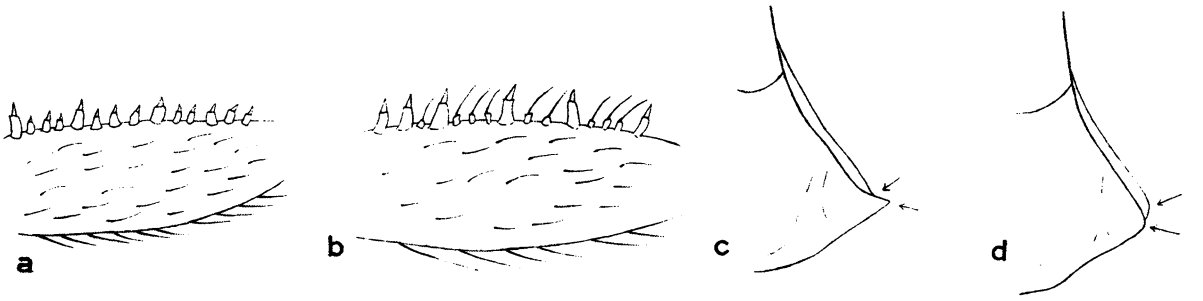

Fig. 9. *Stirogaster desertorum* Hv.: a anterior femur. – *S. laticeps* sp. n.: b same. – *S. fausti* Jak.: c right latero-basal angle of pronotum. – *S. fausti* Jak. var. *obtusangulus* var. n.: d same.

terior part with distinct rugose pattern, surface with dense shagreen, faintly shining. Posterior portion opaque, with dense shagreen, minutely granulose and with fine transverse wrinkles anteriorly. Scutellar spine relatively long, subhorizontal; base of scutellum minutely granulose and shagreened, opaque. Fossula spongiosa of fore tibiae about one-sixth as long as tibia. Genital segment as in *R. infirmus* Mill. (MILLER *op. cit.*, p. 66). Stylus as in Fig. 7 j.

Egypt, Natt., 1858, 1 ♂ (type) in coll. Reuter.

Among the species with opaque pronotum, easily recognized by the dark pattern of the elytra (basal part of corium and clavus entirely without dark markings). In this it resembles *R. infirmus* Mill. (MILLER *op. cit.*, pp. 65 – 66). *R. infirmus* is smaller, however, length 10.5 mm. and, according to MILLER, with the eyes widely separated at the lower margin. I have 2 ♂♂ from the Sudan (Ed Damer) that agree with the description. In one of them the eyes are narrowly separated in the middle, relatively broadly before and behind the middle; in the second specimen the eyes are relatively broadly separated as in *R. dorsalis* and *R. tabidus*. There is thus individual variation in the distance between the eyes. The male genitalia of *R. infirmus* are very similar to those of *R. dorsalis*, except that the stylus (Fig. 7 k) is slightly slenderer. Additional material of *R. dorsalis* is needed to decide the taxonomic status of these two forms.

R. harterti Hv.

Resembling *R. dorsalis* Stål in the size and the pale colouring (pronotum reddish brown, apical dark markings of elytra dilute brown, with the anterior transverse band on corium incomplete, not reaching the lateral margin), but 1) eyes somewhat smaller; vertex 0.77 × as broad as eye; ocelli slightly smaller, but interspace always narrower than an ocellus, 2) pronotum with anterior lobe distinctly smaller, 0.73 × as long as basal lobe (0.84 × in *dorsalis*) and posterior lobe smoother, not granulated and only obsoletely transversely wrinkled in the middle, 3) scutellar spine distinctly shorter and thicker, 4) base of elytra distinctly reddish brown (the dark pattern of the elytra much as in *R. thesigeri* Mill. in shape, but the dark colouring of the base not extending apically along clavus), 5) fossula spongiosa of anterior tibiae only one-ninth of the length of the tibia, and 6) male genitalia much as in *R. dorsalis*, but pygofer somewhat more truncately rounded apically, with the apical spine directed straight dorsad (obliquely caudo-dorsad in *R. dorsalis* and most other species of the group).

Algeria: S. Oued Mya, C. Sahara, 1 ♂ (type), IV. 1912, Hartert.

R. bidens sp. n.

♂ 10 mm. Vertex 0.82 × as broad as eye. As *R. ustulatus* Mill. (MILLER *op. cit.*, pp. 69 – 70), but 1) smaller, 2) ocelli large, interspace less than half as wide as an ocellus, 3) scutellum dark brownish, 4) dark pattern of elytra as in *R. thesigeri* Mill., *R. inermipes* Jak. and *R. pallipes* K.: dark base of corium and of clavus not united to the dark transverse apical band of corium with a longitudinal dark band, 5) apical spine of pygofer (♂) (Fig. 10 a-b) of unique shape: expanded and bidentate apically; stylus (Fig. 10 c) semicircularly curved.

Saudi Arabia: El Riyadh, 1 ♂ (type), VI. 1958, Diehl.

Resembles also *R. pallipes* (K.) and *R. inermipes* Jak. in the very faint pattern of the anterior part of the pronotum, but size smaller, the pronotum more opaque and shagreened, the scutellum arcuately striate, etc.

R. insularis sp. n.

♂ 11 mm. Vertex nearly as broad as eye. As *R. tabidus* (K.), but 1) head slightly broader, 2) pronotum remarkably broader, 1.35 × as broad as long (1.2 × as broad in *R. tabidus*), with anterior part much more strongly shagreened and basal part considerably more rugose and opaque, 3) scutellar spine (Fig. 10 f) short and black, 4) fossula spongiosa of fore tibia one ninth as long as tibia, 5) hind tarsi shorter with 1st joint as long as 2nd (shorter than 2nd in *R. tabidus*) and 6) genital segment (♂) (Fig. 10 e) strongly insinuated in lateral aspect.

Bahrain Is., 1 ♂, the type.

In the structure of the hind tarsi *R. insularis* comes near to *R. ciliatus* Jak., which is, however, much smaller, with long erect hairs on upper surface, etc.

R. occultans sp. n.

As *R. bidens* Lv., but 1) smaller, length 9.2 mm, 2) antennae darker, 3) pronotum blackish and more opaque; anterior lobe with a distinct pattern; basal lobe with a stronger microsculpturing, with caudo-lateral angles somewhat more prominent, 4) scutellum with some long and erect setae, 5) paratergites bicoloured with dilute fuscous spots, 6) caudal process of pygofer spiniform, as for instance in *R. thesigeri* Mill., and 7) stylus (Fig. 10 h) less curved.

Measurements: Vertex 0.94 × as broad as eye; interspace slightly narrower than an ocellus. Pronotum 0.83 × as long as broad.

Type, a male, W. Aden Protectorate, Dhala road.

Easily recognized from the other species with bicoloured paratergites on the small size and the pale, unicoloured legs. The male of *R. israelensis* Dps. is unknown, but since the *Reduvius* species often have a relatively restricted range, it is very probable that *R. occultans* is not identical with it.

R. varipes sp. n.

♂ 12 mm. Head black. Antennae yellowish or brownish. Pronotum and scutellum black. Elytra with dark pattern as in *R. tabidus*. Paratergites yellowish, with ± distinct rectangular dark spots. Venter dark brown, lateral margins yellowish. Metasternum yellowish brown, other parts of thorax black. Anterior and middle legs yellowish. Hind legs either yellowish or femora dark brown with basal third and apex yellowish and tibiae basally dark brownish.

Elongate. Vertex 0.7 × as broad as eye, with a deep median sulcus. Ocelli large, interspace half as wide as ocellus. Ist antennal joint 0.6 × as long as basal width of pronotum; 2nd joint 2.1 × as long as Ist. Pronotum opaque, 1.3 × as broad as long; anterior part 0.8 × as long as basal part, pattern distinct and rugose, surface otherwise densely and strongly shagreened; basal part very densely shagreened, especially anteriorly also finely transversely wrinkled, entirely opaque. Scutellum shagreened and transversely wrinkled, apical spine long. Fossula spongiosa of fore tibiae short, one ninth of the length of tibia. Hind legs remarkably long and gracile; length of hind femur 4.8 mm, of hind tibia 6 mm. Genital segment (Fig. 10 i) boat-shaped and carinate in ventral surface, provided with a globose apical lobe with a median depression; caudal spine well developed. Stylus nearly semicircularly curved.

Morocco: Tafraoute, 1 ♂ type, some ♂ paratypes, 28. VII. 1959, Eckerlein.

Of the group with bicoloured paratergites (*R. christophi* Jak., *R. putoni* Rt., *R. maroccanus* Vid. and *R. zebra* Mill.). *R. christophi* is very similar but smaller, with anterior part of pronotum only faintly shagreened between the pattern, different genitalia, etc. Both in *R. putoni* and in *R. zebra* the ocelli are small, the interspace being wider than the

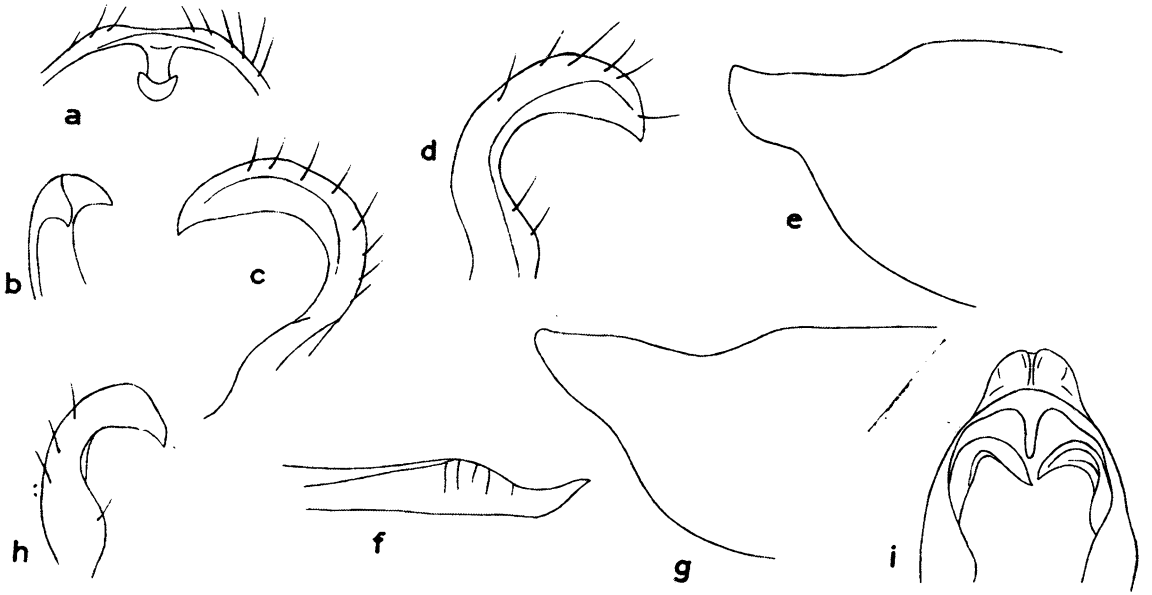

Fig. 10. *Reduvius bidens* sp. n.: a apex of pygofer, dorsal aspect; b medio-apical process of pygofer, lateral aspect, c stylus. – *R. insularis* sp. n.: d stylus ; e pygofer, lateral aspect; f scutellum from side. – *R. tabidus* K : g pygofer, lateral aspect. – *R. occultans* sp. n.: h stylus. – *R. varipes* sp. n.: i pygofer, dorsal aspect.

ocellus, all femora dark brown, etc. *R. maroccanus* (only ♀ known) has the pronotum provided with a yellow-brown basal margin and dark brown legs.

Pirates S.

P. chiragra (F.) – Cairo, 2 spec., Saalas, 1 spec., IX. 1962; Heluan, 1 spec., Saalas. At lamp.

Vibertiola Hv.

V. cinerea (Hv.) – Cairo, Giza, 1 larva, 1. – 2. VIII. 1961, 1 adult and 1 larva, IX. 1962. On *Panicum turgidum* in a sandy place.

Vachiria Stål

V. natolica Stål – Cairo, some, 10. – 19. VI. 1961, IX. 1962; Cairo – Suez desert road, some, 14. – 15. IX. 1962; Heluan, some, 9. IX. 1962; Siwa (Hoberlandt *op. cit.*, p. 363). Common on different desert plants.

Amphibolus K.

A. venator K. – Egypt, 2 spec., in coll. Reuter.

Coranus Ct.

C. aegyptius (F.) – Alexandria, some, 5. – 6. VIII. 1961; Cairo, some, 10. – 19. VI. 1961, IX. 1962; Cairo – Suez desert road, 1 spec., 14. – 15. IX. 1962; Fayoum, 2 spec., 13. – 14. VI. 1961; Kharga, some, 19. – 22. IX. 1962; Siwa (Hoberlandt *op. cit.*, p. 363). Common in dry places.

C. angulatus Stål – Cairo, 1 spec., 10. – 19. VI. 1961; Cairo – Suez desert road, 1 spec., 14. – 15. IX. 1962. In dry places.

C. angulatus Stål ssp. *chanceli* Bgv. – Kharga, some, 19. – 22. IX. 1962; Dakhla, 1 spec., 20. – 21. IX. 1962. Among dune vegetation. The subspecies is bigger than the nominate form, with pale yellow-brown colouring. The shape of the basal angles of the pronotum, on the contrary, is variable both in *chanceli* and in the nominate form, so that there is no sharp limit between them in this respect. The subspecies has previously been recorded from Algeria and Libya.

C. arenaceus Wk. – Kharga, 1 spec., 19. – 22. IX. 1962; Suez, 1 spec. (coll. Linnavuori). Among dune vegetation.

Nagusta Stål

N. simoni Pt. – Cairo, 1 spec. J. Sahlberg.

N. tuberosa Stål – Fayoum, some, 17. IX. 1962. On *Acacia nilotica*.

Nabidae

N. capsiformis Gm. (= *siticus* Wk.) – Cairo, many, 10. – 19. IV. 1961, IX. 1962; 50 km N. of Ismailia, 1 spec., 17. VI. 1961; Siwa (Hoberlandt *op. cit.*, p. 363); near Sokhna, some, 15. IX. 1962.

N. (Aspilaspis) viridis Br. – Heluan, 1 spec., 9. IX. 1962; 50 km N. of Ismailia, some, 17. VI. 1961. On *Tamarix*.

Cimicidae

Cimex L.

C. lectularius L. – Abu Maner Is., E. of Hurgada, Red Sea Coast (Usinger 1960, p. 83); Cairo, some, 1. – 2. VIII. 1961; El Amiriya, Qalyubiya Prov. (Usinger *op. cit.*); Siwa (Hoberlandt *op. cit.*, p. 363); Wadi Natroun (Usinger *op. cit.*).

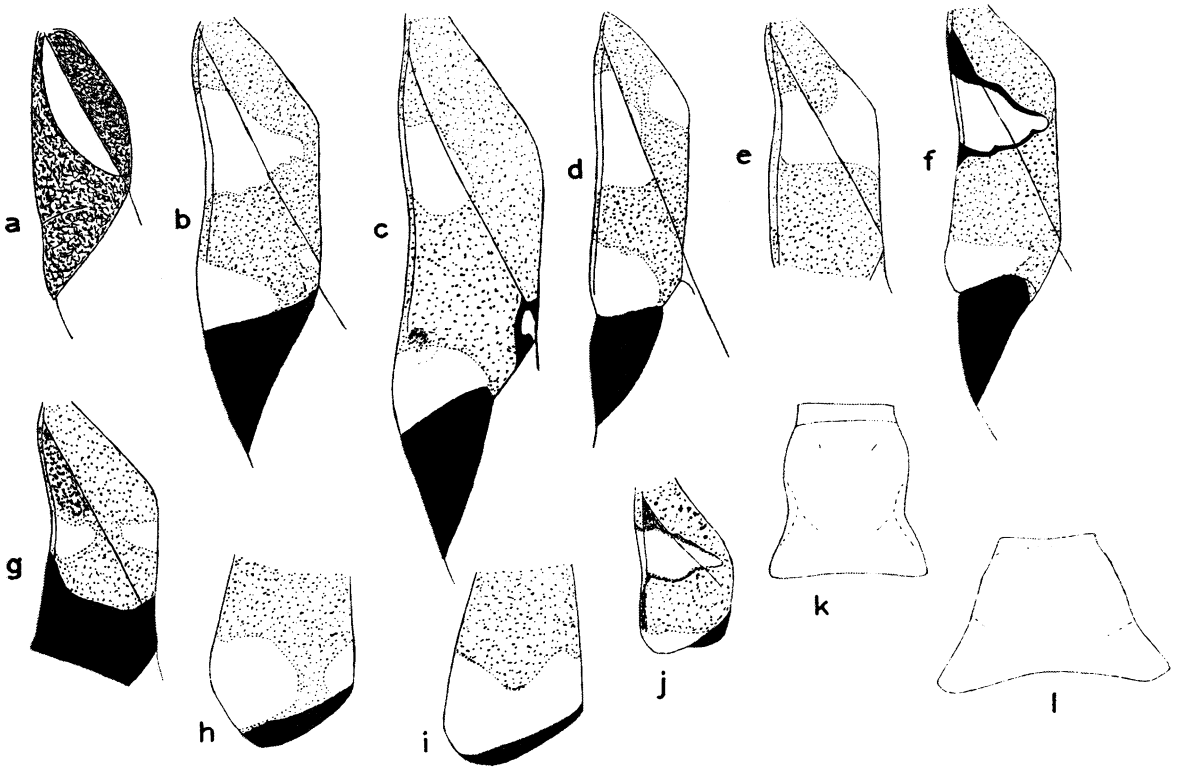

Fig. 11. *Argyrotelaenus simoni* Rt. Pop.: a elytron. – *Laemocoris reuteri* Jak.: b elytron ♂; h same ♀; k pronotum ♀. – *L. orphanus* sp. n.: c elytron ♂. – *L. trimaculatus* sp. n.: d same. – *Trachelonotus kiritshenkoi* (Pop.): e same. – *Systellonotus wagneri* (Kir.): f same; j same ♀. – *Hypomimus nocturnus* sp. n.: g same ♂. – *Laemocoris divisus* sp. n.: i same ♀. – *Paralaemocoris ahngeri* (Rt.): l pronotum ♀.

Cacodmus Stål

C. tunetanus Hv. (= *aridus* Ferr. Us.) – Abu Rawash, Imbala, Giza Prov. (Usinger *op. cit.*, p. 84); El Mansuriya, Giza Prov.; near Mersa Matruh and Sinnaris, Fayoum Prov. (Usinger *op. cit.*). 2 spec. from Abu Rawash, 24. IX. 1951, H. Hoogstraal, in my collection.

Strictivimex Us.

S. namru Us. – Giza (Usinger *op. cit.*, p. 86).

Leptocimex Us.

L. duplicatus Us. – Giza (Usinger *op. cit.*, p. 87). In my collection 1 spec., Giza, Mycerinus Pyramid, 12. V. 1960, Usinger.

Anthocoridae

Orius W.

O. niger W. ssp. *aegyptiacus* E. Wgn. – Cairo, some, J. Sahlberg.

O. pallidicornis (Rt.) – Siwa (Hoberlandt *op. cit.*, p. 364).

O. laevigatus (Fb.) ssp. *inaequalis* E. Wgn. – Alexandria, many, 5. – 6. VIII. 1961; Cairo, many, 10. – 19. VI. 1961, IX. 1962; Fayoum, many, 13. – 14. VI. 1961; 50 km N. of Ismailia, some, 17. VI. 1961. Common on various plants both in cultivated and in desert biotopes.

O. albidipennis (Rt.) – Assiut, some, 21. VI. 1961; Cairo, many, 10. – 19. VI. 1961, IX. 1962; Fayoum, some, 13. – 14. VI. 1961; 50 km N. of Ismailia, some, 17. VI. 1961; Kharga, some, 19. – 22. IX. 1962; Luxor, many, 26. – 28. VII. 1961; Sinai, Wadi Feiran, 25. – 29. IX. 1962; Siwa (Hoberlandt *op. cit.*, p. 364); near Suez, some 15. IX. 1962. A common ubiquitous species like the preceding.

Xylocoris Df.

X. galactinus (Fb.) – Siwa (Hoberlandt *op. cit.*, p. 364).

X. afer (Rt.) – 50 km N. of Ismailia, 3 spec., 17. VI. 1961; Memphis, some, J. Sahlberg.

Cardiastethus Fb.

C. pseudococci E. Wgn. – 50 km N. of Ismailia, 1 spec., 17. VI. 1961.

Dokkiocoris Mill.

D. bicolor Mill. – Luxor, 2 spec., 26. – 28. VII. 1961, some, Eckerlein. On *Saccharum officinarum*.

Miridae

Termatophylum Rt.

T. insigne Rt. – Assiut, some, 30. – 31. VII. 1961; Luxor, some, 26. – 28. VII. 1961. On *Acacia* and at lamps.

Argyrotelaenus Rt. Pop.

A. elegans Rt. – Deschena, some, J. Sahlberg. The colour markings of the elytra have been illustrated by LINNAVUORI 1951, p. 104.

A. simoni Rt. Pop. – Kharga, 2 spec., 19. – 22. IX. 1962. Moreover I have found it in Israel, Ein Gedi, many, 18. – 19. VI. 1958. On *Acacia*. Colour pattern of elytra as in Fig. 11 a. The type from Aden (coll. Reuter) has also been studied.

Phytocoris Fn.

P. desertorum Rt. – Cairo – Suez desert road, 2 spec., 14. – 15. IX. 1962. On *Haloxylon salicornicum*.

Creontiades Dist.

C. pallidus (Rb.) – Assiut, some, 30. – 31. VII. 1961 Cairo – Suez desert road, 1 spec., 14. – 15. IX. 1962; Dakhla, some, 20. – 21. IX. 1962; Luxor, some, 26. – 28. VII. 1961; Siwa (HOBERLANDT *op. cit.*, p. 364). Common especially in cultivated fields. Also at lamps.

Megacoelum Fb.

M. sordidum Rt. – Fayoum, 1 spec., Saalas.

Eurystylus Stål

E. bellevoyei (Rt.) – Cairo, many, 10. – 19. VI. 1961; Cairo – Suez desert road, some, 14. – 15. IX. 1962; Heluan, 1 spec., 9. IX. 1962; Sinai, Wadi Feiran, 1 spec., 25. – 29. IX. 1962; Siwa (HOBERLANDT *op. cit.*, p. 365). Common in drier cultivated biotopes as well as on desert vegetation.

Lygus Hn.

L. (*Taylorilygus*) *pallidulus* (Blanch.) (= *apicalis* Fb.) – Cairo, some, 10. – 19. VI. 1961, IX. 1962; Cairo – Suez desert road, some, 14. – 15. IX. 1962; Siwa (HOBERLANDT *op. cit.*, p. 365). Common on cultivated fields.

L. (*Exolygus*) *italicus* E. Wgn. ssp. *israelensis* Lv. – Cairo, 2 spec., 10. – 19. VI. 1961; Cairo – Alexandria desert road, 1 spec., 2. VIII. 1963; 50 km N. of Ismailia, 2 spec., 17. VI. 1961. On cultivated biotopes. In Egyptian specimens the apex of the tylus is less blackened than in specimens from Israel, but in other respects they are similar. Probably the species recorded as *L. gemellatus* (H. S.) by PRIESNER & ALFIERI (*op. cit.*, p. 92) belongs to the form mentioned above.

Deraeocoris Kb.

D. (*Camptobrochis*) *serenus* Dgl. Sc. – Assiut, some, 30. – 31. VII. 1961; Cairo, some, 10. – 19. VI. 1961, IX. 1962; Dakhla, some, 20. – 21. IX. 1962.

D. (*Phaeocapsus*) *addendus* Lv. – Fayoum, 1 spec., Saalas; Heluan, 1 spec., Bergevin; Suez, 1 spec., 16. VI. 1961; Wadi Hoffi, 1 spec., Schmiedeknecht. On *Tamarix*. Previously confused with *D. martini* (Pt.) (LINNAVUORI 1960, pp. 66 – 68). I have seen no specimens of the genuine *D. martini* from Egypt, and obviously most records of *D. martini* by PRIESNER & ALFIERI (*op. cit.*, p. 93) are to be referred to *addendus*. Since *D. martini* occurs in Israel, it is probable that it has been found in Egypt, too.

D. (*Cranocapsus*) *sinuaticollis* Rt. (= *puncticeps* E. Wgn.) – Heliopolis, 1 spec., J. Sahlberg.

Platycapsus Rt.

P. acaciae Rt. – Dakhla, some, 20. – 21. IX. 1962. At lamp. On *Acacia* spp., living apparently high up in the trees, since I have never caught it with a net, although it has repeatedly been found at lamps in the Sudan.

Trigonotylus Fb.

T. pallidicornis Rt. – Cairo, many, 10. – 19. VI. 1961, IX. 1962; Fayoum, many, 13. – 14. VI. 1961; Meadi, some, 12. VI. 1961; 50 km N. of Ismailia, many, 17. VI. 1961. Common on various grasses in cultivated fields.

Macrolophus Fb.

M. costalis Fb. – Sinai, Wadi Feiran, 2 spec., 25. –29. IX. 1962. From desert vegetation. New for Egypt. Holomediterranean.

Cyrtopeltis Fb.

C. tenuis (Rt.) – Assiut, many, 30. – 31. VII. 1961; Cairo, many, 10. – 19. VI. 1961, IX. 1962; Luxor, many, 26. – 28. VII. 1961; Sinai, Wadi Feiran, some, 25. – 29. IX. 1962. Common on various types of vegetation. Also at lamp.

C. pygmaea E. Wgn. – Dakhla, some, 20. – 21. IX. 1962; Sinai, Wadi Feiran, some, 25. – 29. IX. 1962; near Suez, some, 15. IX. 1962. On *Hyoscyamus* sp.

C. sedilloti (Pt.) (= *kochi* E. Wgn.) – Alexandria, many, 5. – 6. VIII. 1961. Common on *Silene* sp. on coastal dunes. Found on *Silene succulenta* in Israel.

Hallodapus Fb.

H. costai (Rt.) (= *longicornis* Rt.)– Cairo, 1 spec., 10. – 19. VI. 1961; Dakhla, many, 20. – 31. IX. 1962; 50 km N. of Ismailia, 1 spec., 17. VI. 1961; Luxor, 2 spec., 26. – 28. VII. 1961. Under plants. Often at lamps.

Laemocoris Rt.

Fig. 12. Small, gracile, rather opaque, sexually dimorphic species. ♀ narrow and rather parallel-sided at head and thorax, abdomen together with elytra strongly expanded, nearly pear-shaped. Colouring brown, elytra with 2 white transverse fasciae. Head broader than pronotum, nearly vertically declivous anteriorly; tylus not unusually prominent; basal margin of vertex carinate. Antennae gracile. Pronotum (♂) strongly broadening caudad, lateral margins only slightly insinuated; disk basally convex, strongly sloping anteriorly or (♀) cylindrical, with lateral margins strongly insinuated. Apex of scutellum strongly turned upward, especially in ♀. Elytra (♂) extending well beyond abdomen or (♀) shorter than abdomen, strongly constricted basad, apical margin roundedly truncate. Male genitalia: right stylus very small, bearing an apical tooth. Left stylus: sensory lobe with a

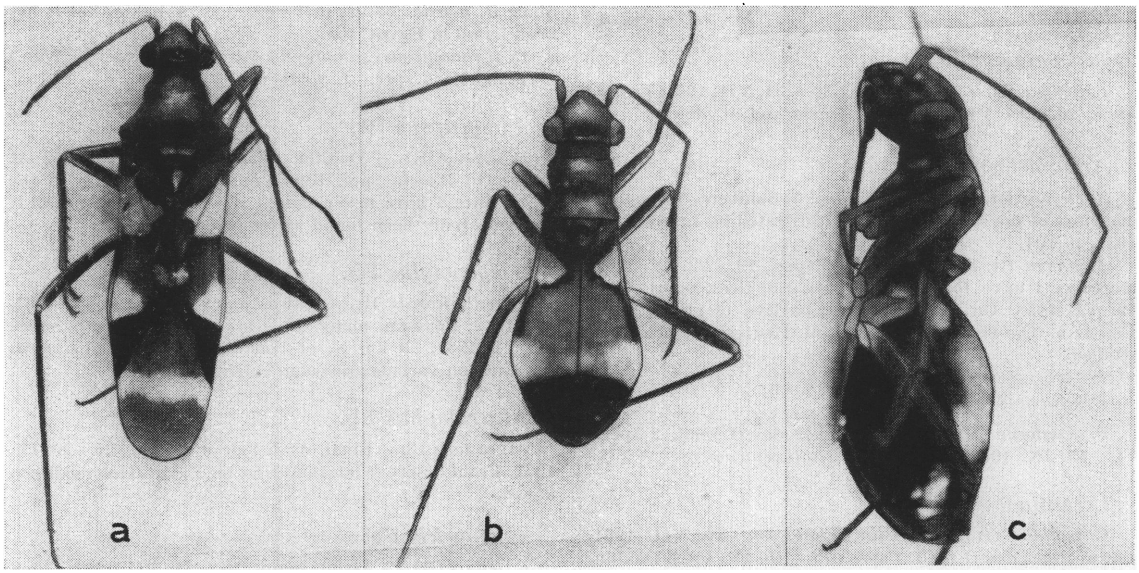

Fig. 12. *Laemocoris reuteri* Jak.: a ♂; b ♀; c ♀ from side.

blunt tooth, hypophysis falcate. Theca long, nearly semicircularly curved, simple. Vesica very long and thin; secondary gonopore far from apex; apex sharp-tipped, also bearing a small ± pointed lobe.

Type: *L. reuteri* (Jak.)

According to Stichel (1958, p. 824 – 825) the following Palearctic *Laemocoris* species have been described: *L. ahngeri* Rt., *L. costai* Rt., *L. dispar* Schm., *L. facetus* Hv., *L. kiritshenkoi* Pop., *L. reuteri* (Jak.), *L. strigifrons* Rt. and *L. zarudnyi* Rt. *L. costai* was transferred to *Hallodapus* by Linnavuori (1961, p. 4). Of *L. dispar* and *L. facetus* no material was available, but their generic position is clear. Of *L. zarudnyi* the type (coll. Reuter) was studied by the present author. The other species are to be found in my collection together with *L. minimus* Kir. and *L. wagneri* Kir., which are only manuscript names. A study of the material revealed that the genus is heterogenic: to *Laemocoris* s.str. belong only *L. reuteri*, *L. dispar*, *L. facetus*, *L. zarudnyi* and 4 new species described below, *L. kiritshenkoi* belongs to *Trachelonotus* Rt., *L. wagneri* to *Systellonotus* Fb. and for the rest a new genus *Paralaemocoris* Lv. had to be established.

Key to the species

♂♂

1 (2) Elytra with 3 whitish spots .... *L. trimaculatus*
2 (1) Elytra with 2 whitish spots 3
3 (4) Membrane with a sharply delimited whitish transverse band. ..... *L. reuteri*
4 (3) Transverse whitish band of membrane absent or, if present, faint or poorly delimited 5
5 (6) Length only 3 mm ..... *L. dispar*
6 (5) Length at least 3.4 mm 7
7 (8) Length 4.4 mm. Membrane with a poorly delimited and faint whitish transverse band .... *L. orphanus*
8 (7) Length 3.4 mm. Membrane without a whitish band 9
9 (–) Eyes remarkably large; vertex only 1.17 × as broad as eye ..... *L. zarudnyi*
– Eyes smaller; vertex 1.3 × as broad as eye ..... *L. divisus*

♀♀

1 (2) Pronotum (lateral aspect) straight in anterior part ..... *L. dispar*
2 (1) Pronotum (lateral aspect) concavely sloping apicad 3
3 (4) Larger, length 3 – 5.5 mm; vertex 2.25 × as broad as eye; 2nd antennal joint 1.6 × as long as basal width of pronotum ..... *L. reuteri*
4 (3) Smaller, length < 3 mm. 5
5 (6) Lighter, reddish brown species; 2nd antennal joint 1.9 × as long as basal width of pronotum *L. divisus*
6 (5) Darker; head and pronotum black, ground colouring of elytra dark brown or black 7
7 (–) Vertex narrow, only 1.9 × as broad as eye .. *L. beja*
– Vertex considerably broader ..... *L. facetus*

L. reuteri (Jak.)

Fig. 12. ♂ 3.7 – 4 mm, ♀ 3 – 3.5 mm. Reddish brown. Antennae brownish; 1st joint and base of 2nd lighter. Elytra reddish brown with white markings as in Fig. 12 b; the basal spot triangular, extending far onto clavus; cuneus purplish brown; membrane brownish, smoky, with a distinct whitish transverse band at the level of the apex of cuneus. ♀: Elytra (Fig. 11 h) reddish brown; basal whitish spot triangular as in ♂; apex with 2 roundish whitish spots; apical margin broadly dark fuscous. Abdomen shining black.

♂ f. macropt. Body 4 × as long as broad at pronotum. Vertex 1.78 × as broad as eye. Proportions between the antennal joints 6 : 27 : 19 : 14, 2nd joint 1.0 – 1.3 × as long as

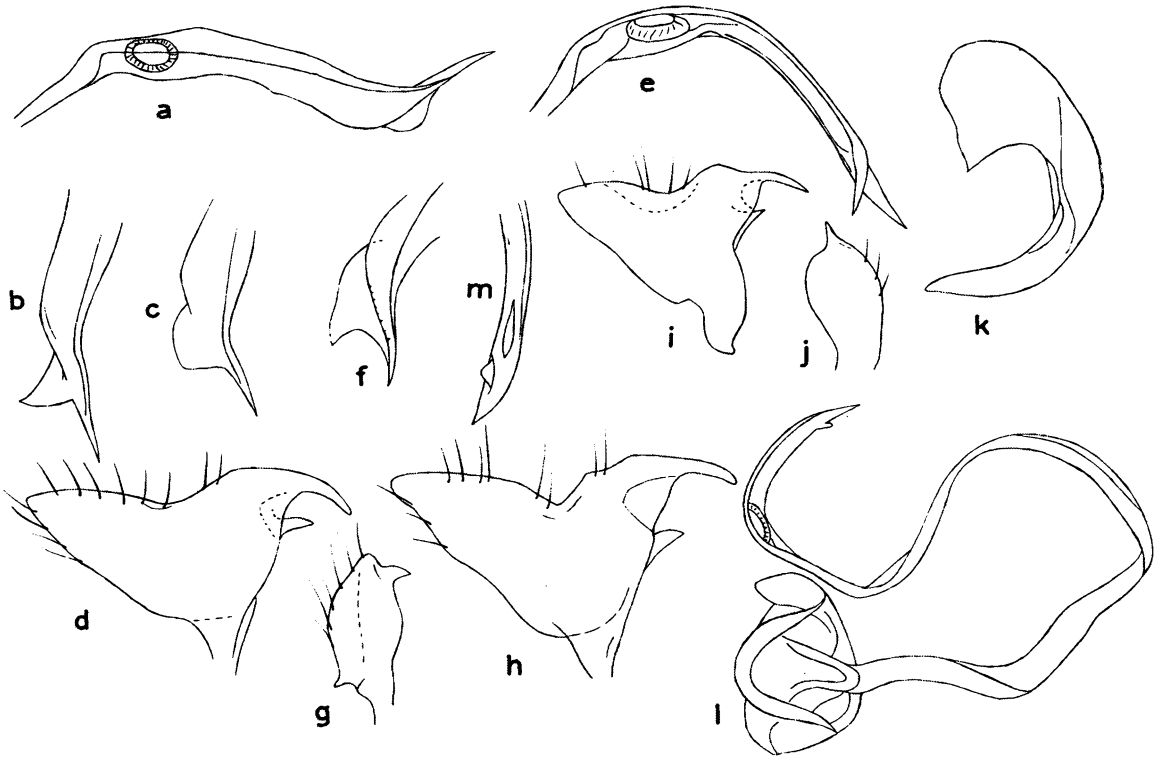

Fig. 13. *Laemocoris reuteri* Jak.: a-c apex of vesica in different aspects; d left stylus. - *L. divisus* n. sp.: e-f apex of vesica; g right stylus; h left stylus. - *L. orphanus* n. sp.: i left stylus; j right stylus; k theca; l-m vesica.

basal width of pronotum. Scutellum with a prominent apical hump. Pronotum strongly broadening caudad, lateral margins only slightly insinuated. Elytra extending far beyond the abdomen. – ♀ f. brachypt. Vertex 2.25 × as broad as eye. Proportions between the antennal joints 7 : 26 : 21 : 15, 2nd joint 1.6 × as long as basal width of pronotum. Pronotum (Fig. 11 k) cylindrical, lateral margins strongly insinuated; disk concavely sloping apicad in lateral aspect. Scutellar hump prominent. Elytra leaving the two last tergites uncovered. Male genitalia: Right stylus and theca as in *L. orphanus*. Left stylus (Fig. 13 d): sensory lobe with a sharp process; hypophysis with a claw-like process. Vesica as in *L. orphanus*, but apex as in Fig. 13 a-c.

L. minimus Kir. n. nud. is, according to my opinion, a brachypterous male of *L. reuteri*: length 2.6 mm., membrane reduced; elytra only as long as abdomen; pronotum narrower. The genitalia, etc., as in typical specimens of *L reuteri*.

Material studied: Iran, Schacrud, some, Kiritshenko.

L. divisus sp. n.

♂ 3.4 mm, ♀ 2.6 mm. As *L. reuteri*, but ♂ 1) much smaller and robuster, body 3.4 × as long as broad at pronotum, 2) elytra with white pattern as in *L. reuteri*, but central part red, cuneus deeply black and membrane without a distinct light transverse band, 3) vertex 1.3 × as broad as eye, 4) proportions between the antennal joints 6 : 27 : 20 : ?, 2nd joint 1.35 × as long as basal width of pronotum, 5) membrane much shorter, extending much less beyond abdomen, 6) right stylus as in Fig. 13 g, left stylus as in Fig. 13 h, and 7) apex of vesica as in Fig. 13 e-f. Theca as in *L. orphanus*. ♀ as *L. reuteri*, but 1) smaller, 2) somewhat lighter, 3) proportions between the antennal joints 6 : 28 : 20 : 13, 2nd joint 1.9 × as long as basal width of pronotum, 4) elytra shorter, leaving 3 last tergites uncovered, whitish apical markings forming a continuous band (Fig. 11 i), apical margin only narrowly fuscous.

Jordania: Jordan, near Jericho, 1 ♂ (type), 6. V. 1962, Eckerlein; Israel, Herzliya, 1 ♀ (paratype), 26. VII. 1958, Linnavuori.

L. zarudnyi Rt.

♂ 3.4 mm. As *L. reuteri*, but 1) robuster, body 3.6 × as long as broad, 2) eyes much larger, vertex 1.17 × as broad as eye; 2nd antennal joint 1.4 × as long as basal width of pronotum, 3) apex of scutellum less sharply upturned, 4) membrane without a transverse whitish fascia, 5) left stylus as in Fig. 14 a; apex of vesica as in Fig. 14 b, with only a very small subapical lobe; right stylus and theca as in *L. orphanus*.

Material studied: Iran, Nasratabad, Seistan, 1 ♂ (type), Zarudnyi, in coll. Reuter.

L. orphanus sp. n.

♂ 4.4 mm. Much as *L. reuteri*, but 1) elytra with the basal white spot roundish extending only a little onto the clavus (Fig. 11 c), central part of corium reddish, cuneus shining black and membrane dark smoky with the transverse light band only faint and poorly delimited, 2) body much more gracile, 4.8 × as long as broad at pronotum, 3) vertex 1.17 ×

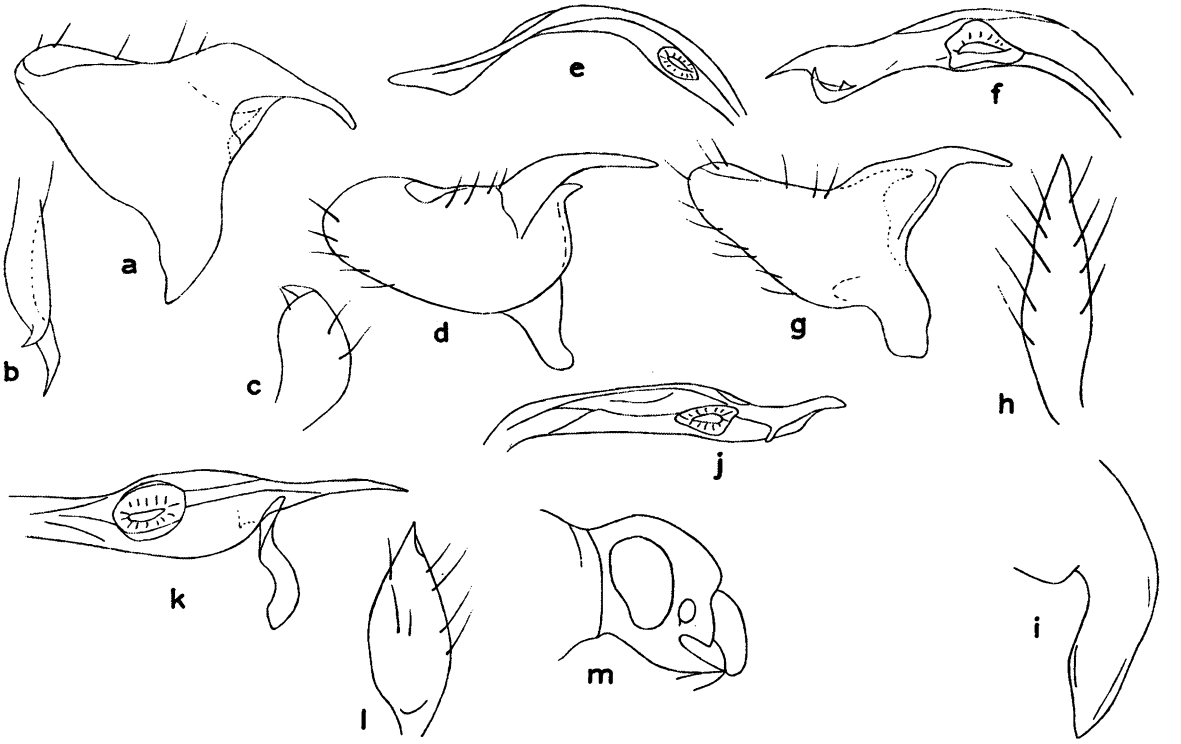

Fig. 14. *Laemocoris zarudnyi* Rt.: a left stylus; b apex of vesica. – *L. trimaculatus* sp. n.: c right stylus; d left stylus; e apex of vesica. – *Paralaemocoris strigifrons* (Rt.): h right stylus; g left stylus; i theca; f apex of vesica. – *P. macrophthalmus* sp. n.: j apex of vesica. – *P. ahngeri* (Rt.): k apex of vesica; l right stylus; m head of ♂, lateral view.

as broad as eye, 4) proportions between the antennal joints 7 : 37 : 20 : ?, 2nd joint 1.4 × as long as basal width of pronotum, 5) scutellar hump less prominent, 6) legs distinctly longer, and 7) male genitalia as in Fig. 13 i-m, subapical lobe of vesica very small and rounded.

Saudi Arabia: El Riyadh, 1 ♂ (type), 18. – 30. III. 1959, Diehl.

L. beja sp. n.

♀ 2.7 mm. As *L. reuteri*, but 1) considerably smaller, 2) colouring darker : pronotum and scutellum black, the triangular basal white spot on elytra bordered by a blackish brown area, 3) antennae lighter, with 1st and 2nd joints whitish; proportions between the joints 6 : 25 : 20 : ?, 2nd joint 1.6 × as long as basal width of pronotum, and 4) vertex much narrower, only 1.9 × as broad as eye.

Sudan: Erkowit, 1 ♀ (type), 5. – 10. VII. 1961. Swept from desert plants.

I have not seen *L. facetus* Hv., but according to the figure by SCHMIDT (1939, p. 382) it has a much broader vertex.

L. trimaculatus sp. n.

♂ 3.45 mm. Head, pronotum and scutellum shining, dark brown; vertex and anterior part of pronotum lighter, with a reddish tinge. Antennae yellowish brown. Elytra coffee-brown, with 3 white spots as in Fig. 11 d; cuneus purplish; membrane smoky, with an irregular, colourless band, broken at middle. Under surface dark brown. Legs yellowish brown, femora with a reddish tinge.

Hair covering of upper surface long, yellowish, erect. Vertex 1.33 × as broad as eye. Proportions between the antennal joints 9 : 30 : 10 : ?; 2nd joint 1.36 × as long as basal width of pronotum. Pronotum strongly expanded basad, disk shining and strongly sloping apicad. Scutellum swollen, but not upturned apically. Male genitalia: Right stylus (Fig. 14 c) ovate, with a distinct apical tooth. Left stylus as in Fig. 14 d. Apex of vesica (Fig. 14 e) simple. The general shape of the vesica and theca of the common type.

Type, a male, W. Aden Protectorate, Dhala road.

Paralaemocoris gen. n.

As *Laemocoris*, but 1) body remarkably robuster, 2) elytra with different colour pattern: uniformly dark brown with a broad, regular transverse fascia just caudad of the tip of scutellum and with a large white spot in apex of corium, 3) vertex not margined basally, 4) tylus (Fig. 14 m) prominent and in lateral aspect distinctly separated from the frons by a notch, 5) apex of scutellum swollen, but not sharp-tippedly upturned and 6) ♀ *Hallodapus*-shaped, broad and rather flat, with pronotum distinctly broadening basad, with much less convex disc. Male geni-

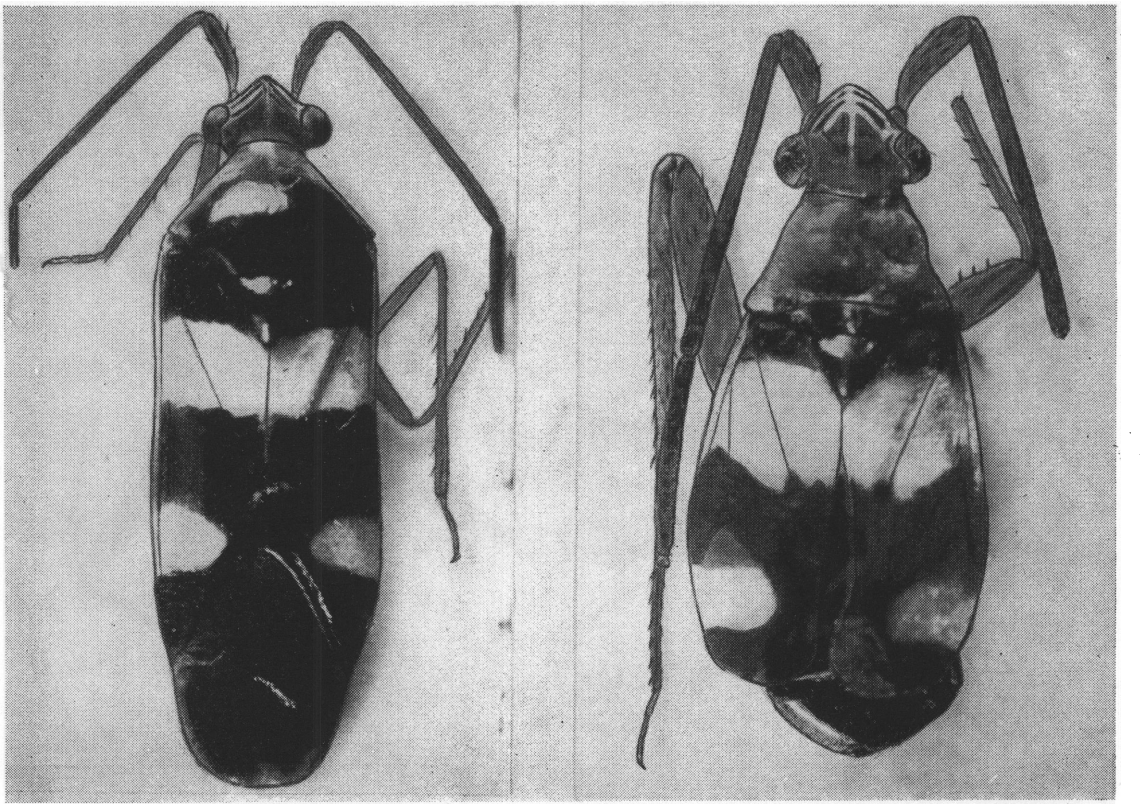

Fig. 15. *Paralaemocoris strigifrons* (Rt.). Left ♂, right ♀.

talia of the *Laemocoris* type, but right stylus larger.

Type: *Laemocoris strigifrons* Rt.

Ribautocapsus E. Wgn. (type: *Laemocoris brucki* Rt.) has also an unmargined vertex, but has, according to STICHEL (1956, p. 391 and 396 – 397), 1) the tylus not prominent and not separated from frons by a notch in lateral aspect, 2) scutellum conically upturned apically, and 3) colour pattern of the *Laemocoris* type.

Key to the species

1 (2) Robust species. Antennae thick. Frons with silvery tomentous lateral stripes (*Paralaemocoris* s. str.) ..... *P. strigifrons*

2 (1) Smaller and less robust species. Antennae gracile. Frons without tomentous light lateral stripes (*Laemocorella* subgen n.; type: *Laemocoris ahngeri* Rt.) 3

3 (–) Eyes smaller, vertex 1.23 (♂) or 1.8 (♀) × as broad as eye ..... *P. ahngeri*

– Eyes large, vertex only as broad as eye ..... *P. macrophthalmus*

P. strigifrons (Rt.)

Fig. 15. Easily recognized in the large size, in the frontal stripes and in the thick antennae. Male genitalia: Right stylus (Fig. 14 h) well developed, narrow and sharp-tipped. Left stylus (Fig. 14 g) as in the genus *Laemocoris*. Theca (Fig. 14 i) thick, digitate, simple. Vesica very long and gracile as in *Laemocoris*, apex as in Fig. 14 f.

Material studied: Egypt, Cairo – Suez desert road, 2 ♂♂ and 1 ♀, 14. – 15. IX. 1962. From *Haloxylon salicornicum*. New to Egypt. Eremian.

P. ahngeri (Rt.)

Fig. 16. Vertex 1.23 (♂) or 1.8 (♀) × as broad as eye. Proportions between antennal joints 9 : 38 : 30 : 14 (♂) or 10 : 32 : 34 : 25 (♀); 2nd joint 1.3 (♂) or 1.6 (♀) × as long as basal width of pronotum. Male genitalia: Left stylus and theca as in *L. strigifrons*. Right stylus (Fig. 14 l) shorter and broader. Apex of vesica (Fig. 14 k) with a long subapical process.

Material studied: Iran, Schacrud, some, Kiritshenko.

P. macrophthalmus sp. n.

♂ 4 mm. As *P. ahngeri*, but 1) eyes much larger, vertex only as broad as eye, 2) proportions between antennal joints 11 : 34 : 22 : ?, 2nd joint 1.1 × as long as basal width of pronotum, 3) apex of scutellum somewhat more swollen, 4) hind tibiae brown (light ochraceous in *P. ahngeri*) and 5) apex of vesica (Fig. 14 j) not sharp-tipped and provided with a small subapical process.

SSSR: Transcaspia, Repetek, 1 ♂ (type), Hohlbeck; Transcaspia, 2 ♂♂ (paratypes), Ahnger.

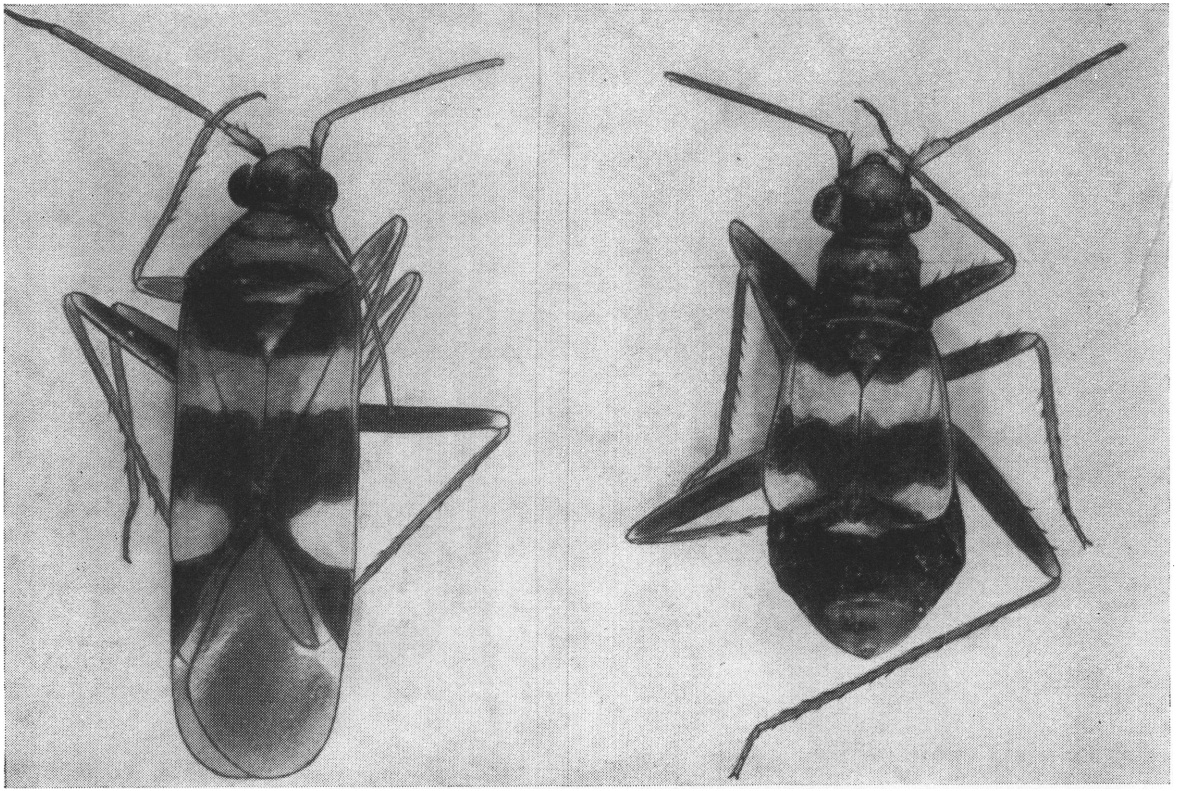

Fig. 16. *Paralaemocoris ahngeri* (Rt.). Left ♂, right ♀.

Trachelonotus Rt.

Differs from *Laemocoris* in the following respects: 1) robuster, 2) tylus prominent, 3) upper surface strongly shining, 4) the different pattern of elytra: only the basal white fascia present, 5) apex of scutellum swollen, but not sharply upturned, 6) legs shorter and 7) the genitalia different: theca short, claw-like and provided with a subbasal tooth and vesica of normal length.

Differs from *Glaphyrocoris* Rt. (= *Linoceraea* Hv.) in the following respects: 1) tylus more prominent, 2) pronotum less globose and 3) legs, especially hind legs, much more gracile.

The type species *T. unifasciatus* Rt. is unknown to me.

T. kiritshenkoi (Pop.)

Fig. 11 e and 17. 3.3 mm. Vertex 1.3 as × broad as eye, sharply margined basally. Proportions between antennal joints 6 : 23 : 14 : ?, 2nd joint 0.85 × as long as basal width of pronotum. Male genitalia: Styli much as in *Glaphyrocoris lunigera* (Hv.) (illustrated by HOBERLANDT *op. cit.*, pp. 364—367). Theca as in Fig. 19 b. Vesica as in Fig. 19 a.

Material studied; SSSR, Transcaspia, Repetek, 1 ♂, Hohlbeck.

Glaphyrocoris Rt.

G. lunigera (Hv.) – Siwa (HOBERLANDT *op. cit.*, pp. 364 – 367). A rare Eremian species. I have one specimen from Saudi Arabia, near Mahd. Dhehd.

Systellonotus Fb.

S. wagneri (Kir.)

Fig. 19. ♂ 4 mm, ♀ 3.8 mm. ♂ reddish brown. Antennae dark brown, 3rd joint basally whitish. Elytra reddish brown, with white pattern as in Fig. 11 f; cuneus purplish; membrane brownish smoky. Legs dark brown. ♀ lighter reddish brown. Antennae as in ♂. Elytra with whitish markings bordered with dark fuscous as in Fig. 11 j. Abdomen shining black.

Upper surface with erect dense hair covering. ♂ macropterous, elongate. Vertex 2.67 × as broad as eye. Proportions between the antennal joints 8 : 28 : 21 : 18, 2nd joint 0.93 × as long as basal width of pronotum. Pronotum distinctly broadening caudad. ♀ ant-shaped. Vertex 2.8 × as broad as eye. Proportions between the antennal joints 10 : 30 : 20 : 18,

2nd joint 1.37 × as long as basal width of pronotum. Pronotum cylindrical, lateral margins slightly insinuated before basal angles. Elytra very short, concealing only the base of abdomen. Abdomen strongly expanded. Rostrum extending to hind coxae. Male genitalia: Right stylus (Fig. 19 d) ovate and sharp-tipped. Left stylus (Fig. 19 c) high, strongly sloping mesad. Theca (Fig. 19 e) thick, bearing 2 pairs of teeth. Vesica (Fig. 19 f) long and slender. Material studied: Iran, Schachrud, 1 ♂ and 2 ♀♀, Kiritshenko.

Hypomimus Ldb.

H. nocturnus sp. n.

♂ 3.6 mm. Dark coffee-brown. Elytra with whitish pattern as in Fig. 11 g; membrane dark.

Slender. With long erect light hairs on upper surface. Vertex 1.3 × as broad as eye, microsculptured, base only very faintly margined. Antennae relatively slender, proportions between the joints 6 : 29 : 21 : 15, 2nd joint 1.1 × as long as basal width of pronotum. Pronotum strongly expanded caudad, relatively shining, distinctly microsculptured. Scutellar hump prominent. Rostrum extending to middle coxae.

Sudan, Erkowit, 1 ♂ type, 5. – 10. VII. 1961. At lamp.

H. secundus Lv. is smaller, with shorter antennae, the whitish band on elytra is not broken, etc.

Orthotylus Fb.

O. priesneri Schm. – Assiut, many, 30. – 31. VII. 1961; Dakhla, 2 spec., 20. – 21. IX. 1962; Kharga, 1 spec., 19. – 22. IX. 1962; Luxor, many, 26. – 28. VII. 1961. Common on *Acacia* and at lamps.

O. minutus Jak. – Cairo, 1 spec., 10. – 19. IV. 1961. At lamp.

O. pusillus Rt. – Fayoum, some, 13. – 14. VI. 1961. From halophytes on the shore of a salt lake.

O. haloxyloni E. Wgn. – Cairo – Suez desert road, some, 14. – 15. IX. 1962; Sinai, Wadi Feiran, some, 25. – 29. IX. 1962. On *Haloxylon salicornicum*.

Zanchius Dist.

Zanchius DISTANT 1904. Type: *Z. annulatus* Dist.

Habrocoris E. WAGNER 1951, p. 153. Type: *H. breviceps* E. Wgn., syn. n.

Z. breviceps (E. Wgn.)

Claw as in Fig. 19 k. Right stylus (Fig. 19 g) small. Left stylus (Fig. 19 h-i) with a curvate, slender hypophysis. Vesica with short teeth bearing lobes as in *Z. alatanus* Hob., moreover a falcate spiculum (Fig. 19 j) is to be found.

Assiut, 3 spec., 30. – 31. VII. 1961; Luxor, 2 spec., 26. – 28. VII. 1961. At lamps.

Platycranus Fb.

P. putoni Rt. – Cairo – Suez desert road, some, 14. – 15. IX. 1962. On *Retama raetam*.

Nasocoris Rt.

N. albipennis Ldb. – Sinai, Wadi Feiran, some, 25. – 29. IX. 1962. On *Ephedra alata*.

Hadrophyes Pt.

H. decipiens sp. n.

3 – 3.2 mm. As *H. sulphurella* Pt., but 1) smaller and more gracile, 2) eyes larger, vertex 1.38 – 1.47 (♂) or 1.7 (♀) × as broad as eye (in *sulphurella* ♂ 1.73 ×), 3) 2nd antennal joint shorter, as long as (♂) or shorter than (♀) the basal width of pronotum (in *H. sulphurella* ♂ distinctly longer), and 4) with different genitalia: Right stylus (Fig. 20 d) small, bearing a short, sharp apex. Left stylus (Fig. 20 e-f): sensory lobe with a short tooth, hypophysis slender, recurved ventrad apically. Theca (Fig. 20 g) digitate. Vesica (Fig. 20 b-c) not expanded apically, apex bearing a minutely serrate ridge and a short subapical claw. In *H. sulphurella* the vesica (Fig. 20 a) is shorter and thicker and strongly expanded apically.

Sokhna, 1 ♂ (type), many paratypes, 15. IX. 1962. On *Suaeda* sp. in a salt marsh.

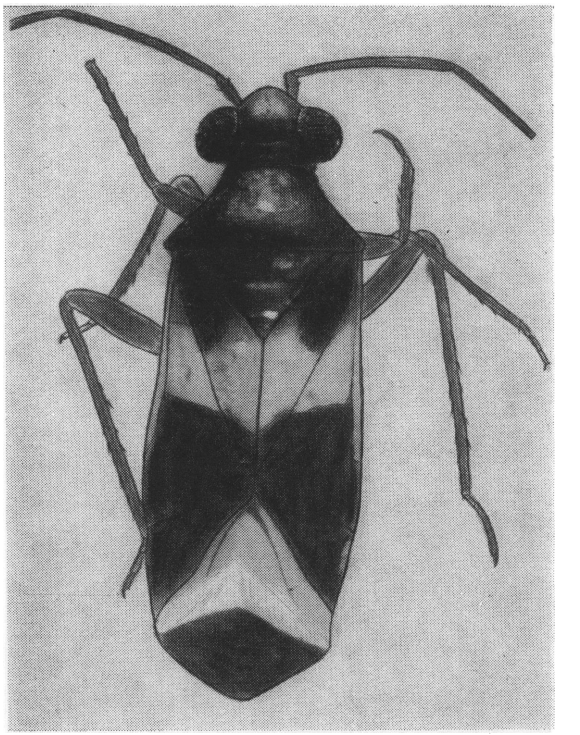

Fig. 17. *Trachelonotus kiritshenkoi* (Pop.) ♂.

Megalocoleus Rt.

M. chrysotrichus (Fb.) – Siwa (HOBERLANDT *op. cit.*, p. 368).

Camptotylus Fb.

C. yersini (M.R.) – Cairo, some, 10. – 19. VI. 1961. On *Tamarix*.

Macrotylus Fb.

M. atricapillus (Sc.) – Sinai, Wadi Feiran, some, 25. – 29. IX. 1962. Swept from desert vegetation. New to Egypt. Holomediterranean.

Ectagela Schm.

E. guttata Schm. – Luxor, 2 spec., 26. – 28. VII. 1961. At lamp.

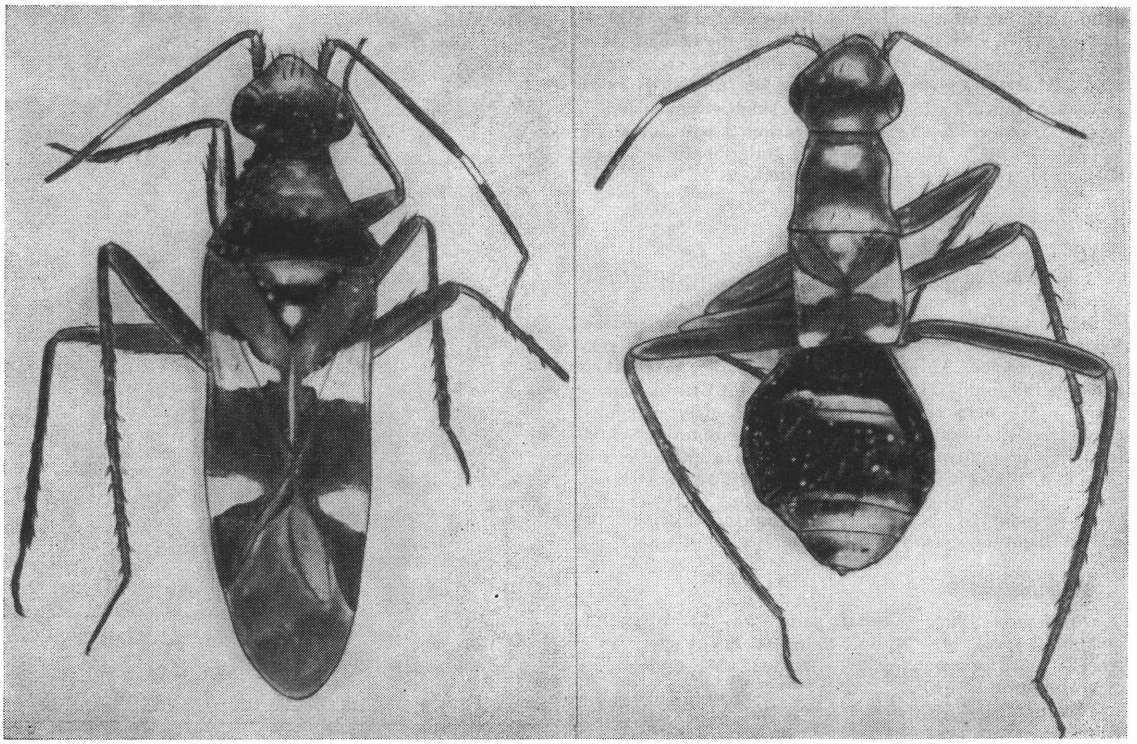

Fig. 18. *Systellonotus wagneri* (Kir.). Left ♂, right ♀.

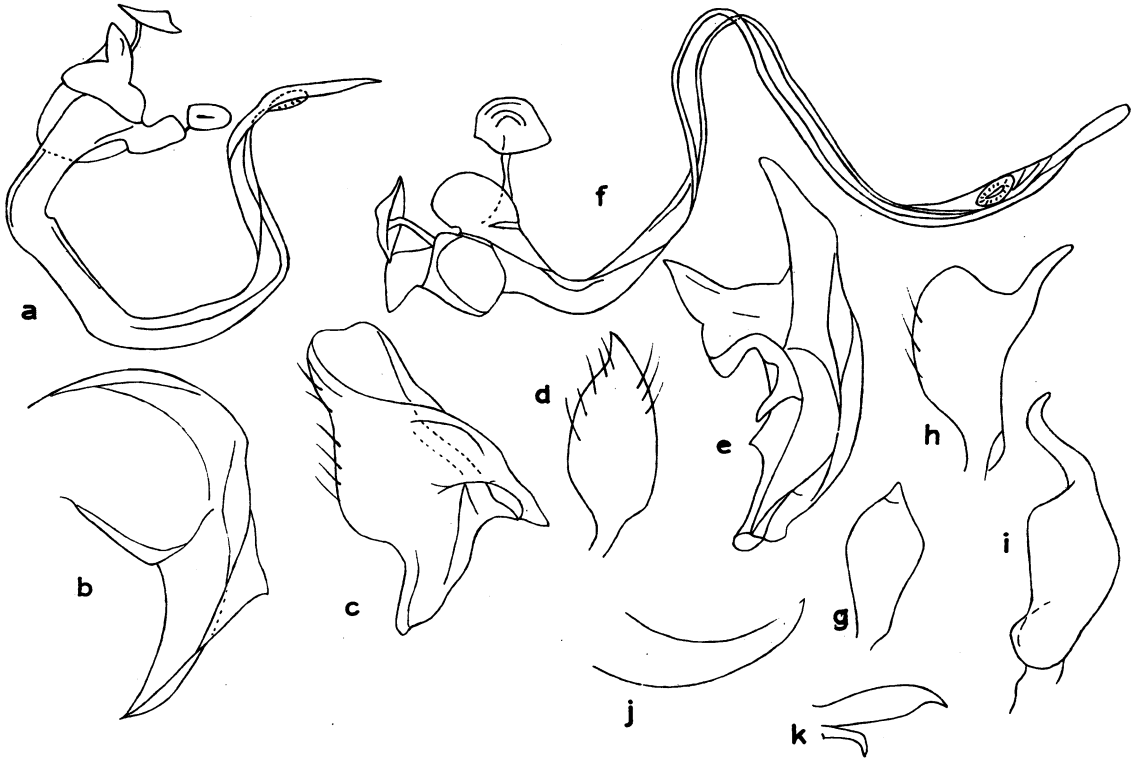

Fig. 19. *Trachelonotus kiritshenkoi* (Pop.) : a vesica; b theca. – *Systellonotus wagneri* (Kir.): c left stylus; d right stylus; e theca; f vesica. – *Zanchius breviceps* (E. Wgn.): g right stylus; h-i left stylus; j spiculum of vesica; k claw.

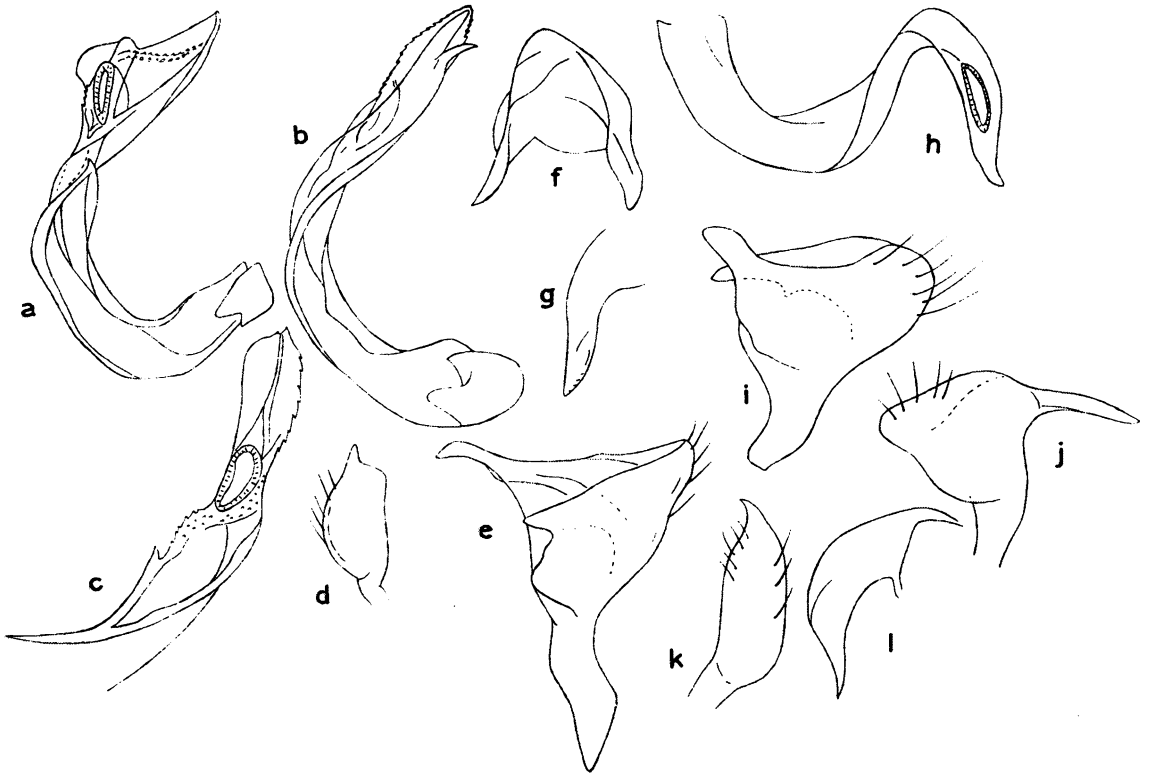

Fig. 20. *Hadrophyes sulphurella* Pt.: a vesica. – *H. decipiens* sp. n.: b-c vesica; d right stylus; e left stylus, lateral aspect; f same from above; g theca. – *Psallus* (*Compsidolon*) *elegantulum* Rt.: h vesica; i-j left stylus; k right stylus; l theca.

Tylthus Fb.

T. parviceps (Rt.) – Cairo, some, 10. – 19. VI. 1961, IX. 1962; Fayoum, 2 spec. 13. – 14. VI. 1961; Meadi, 1 spec., 12. VI. 1961. On *Cyperus* spp. in damp places and at lamps.

Yotvata gen. n.

Earlier (Linnavuori 1961, p. 17 – 19) I regarded *Compsidolon* Rt. as a valid genus, basing my opinion on the genital structure of *C. acacicola* Lv. Now I have been able to examine males of the enigmatic type species *C. elegantulum* Rt. (Jordania, Petra, Eckerlein leg., Fig. 20 h-l). The species is obviously congeneric with species of *Psallus* Fb. subgen. *Coniortodes* E. Wgn. (E. Wagner 1954, syn. n., regarded as a valid genus by Kerzhner 1962, p. 383.) Since *C. elegantulum* is not congeneric with *acacicola* Lv., this leaves the latter without a generic name. The description of a new genus *Yotvata* – named after the first find locality of the species in Israel is as follows:

As *Psallus* subgen. *Compsidolon* Rt., but hair covering of elytra simple, consisting only of erect light brown hairs, and genitalia different: left stylus like a peaked cap, theca bearing a pair of long basal processes and vesica provided with an undulate, serrate apical membrane and with the secondary gonopore far from apex. For a complete description of the type species see Linnavuori (*op. cit.*, pp. 18 – 19).

Type: *Compsidolon acacicola* Lv.

Y. acacicola (Lv.) – Luxor, some, 26. 28. VII. 1961. On *Acacia*. New to Egypt. The species has a wide range in the Eremian zone. Specimens available from Arabia, Israel and the Sudan.

Psallus Fb.

P. (s. str.) *deserticola* E. Wgn. – Cairo – Suez desert road, many, 14. – 15. IX. 1962. Very common on *Haloxylon salicornicum*.

P. (*Compsidolon*) *sinaiticus* sp. n.

2.4 – 2.7 mm. Pale greyish ochraceous. Head sometimes with faint fulvous markings. Antennae pale, 1st joint with 2 small dark dots. Pronotum with a longitudinal line of dark dots behind either eye and extending to the basal half

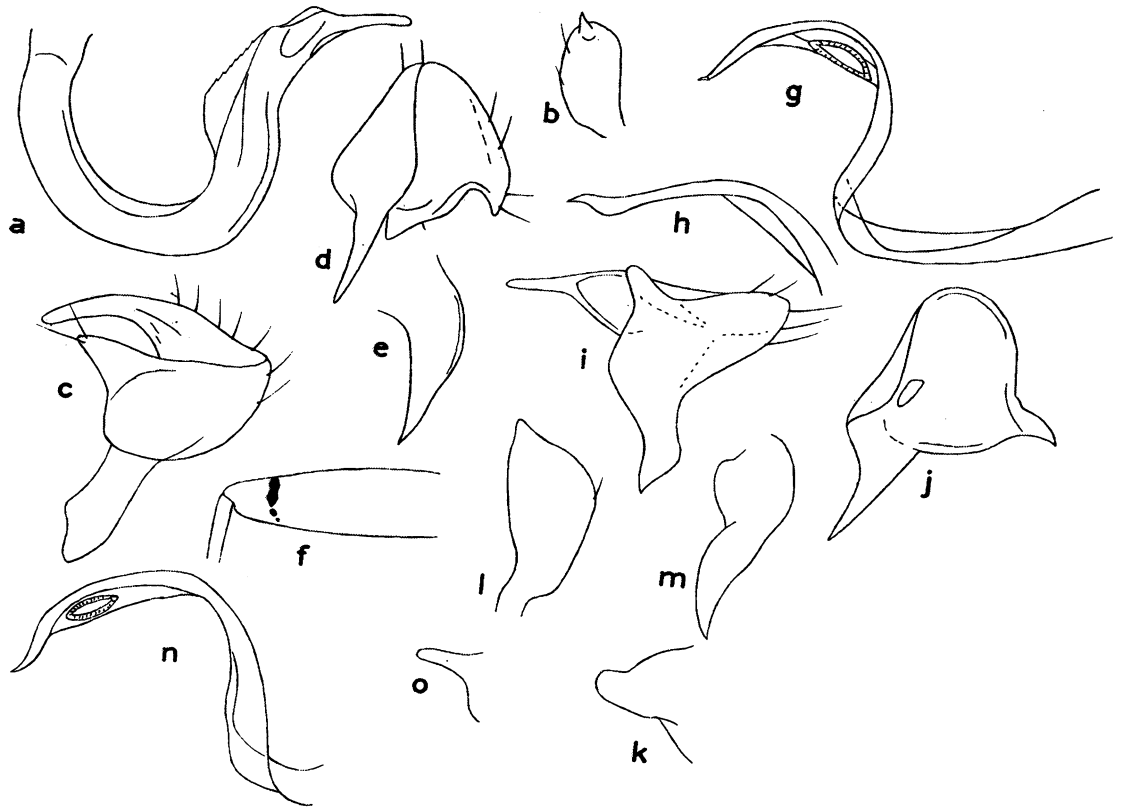

Fig. 21. *Psallus* (*Compsidolon*) *sinaiticus* sp. n.: a vesica; b right stylus; c-d left stylus; e theca; f hind femur. – *P.* (*C.*) *balachowskyi* E. Wgn.: g-h vesica; i left stylus, lateral aspect; j same from above; k sensory lobe of same; l right stylus; m theca. – *P.* (*C.*) *scutellaris* Rt.: n vesica; o sensory lobe of left stylus.

of the disk. Corium and clavus with only very scanty dark dotting, only apical margin against cuneus with distinct dark fuscous spots, sometimes coalescent, then forming a transverse dark band; cuneus whitish; lateral margin of corium and of cuneus with some small red spots; membrane with dense smoky irroration. Femora with only scanty dark dotting, hind femora (Fig. 21 f) only with an apical transverse band of dark spots. Tibiae with only very faint dark spots or nearly unicoloured.

Small, delicate species. Vertex 2.6 (♂) or 3.3 (♀) × as broad as eye. 2nd antennal joint as long as basal width of pronotum. Upper surface with light hair covering. Tibial spines light. Rostrum extending slightly beyond hind coxae. Male genitalia: Right stylus (Fig. 21 b) small, ovate, bearing a short apical tooth. Left stylus (Fig. 21 c-d): sensory lobe with a strongly produced process, hypophysis curved ventrad in lateral aspect. Vesica (Fig. 21 a) thick, nearly semicircularly curved, finely serrate subapically and ending in a thin apex. Theca as in Fig. 21 e.

Sinai, Wadi Feiran, 1 ♂ (type), 2 paratypes, 25. – 29. IX. 1962. On *Haloxylon salicornicum*.

Near *P. salviae* Lv., which is, however, somewhat bigger, has a sharper head with the vertex 2.0 (♂) or 3.0 (♀) × as broad as the eye, the upper surface with more developed dark dotting, the tibiae with distinct black spots, etc.

P. (*Compsidolon*) *balachowskyi* E. Wgn.

Originally described as a subspecies of *P. scutellaris* Rt. (Wagner 1958, p. 209). Certainly a valid species, differing from *scutellaris* in the pale colouring, the smaller size and in the considerably thinner vesica (Fig. 21 g-h) bearing the secondary gonopore much farther from the apex than in *scutellaris* (Fig. 21 n); also the sensory lobe of the left stylus is much thicker than in *scutellaris* (Fig. 21 i-k). Right stylus as in Fig. 21 l, theca as in Fig. 21 m.

P. pumilus Jak. is also closely related, but differs in the somewhat bigger size, in the dissimilar colouring (ground colouring greyish, head darker, femora, especially hind femora, darker), the whitish hair covering of the upper surface (yellowish in *P. balachowskyi*), the membrane extending much farther beyond the abdomen and the considerably robuster vesica. The tibial spines are light in *pumilus* also, not black as erroneously reported by Wagner (1954, p. 9). *P. absinthii* Sc. is much bigger, usually (but not always) has light 1st antennal joint, the dark dotting on the elytra is well developed and dense. The male genitalia of *P. absinthii* resemble those of *P. balachowskyi* but the vesica is somewhat robuster and the sensory lobe of the left stylus longer and thicker.

Sinai, Wadi Feiran, 2 spec., 25. – 29. IX. 1962. On *Artemisia* sp.

Atomoscelis Rt.

A. signaticornis Rt. – Cairo, 2 spec., 10. – 19. VI. 1961; Heluan, 1 spec., 9. IX. 1962; Luxor, some, 26. – 28. VII. 1962; Sinai, Wadi Feiran, 2 spec., 25. – 29. IX. 1962. From desert vegetation and at lamps.

Brachycranella Rt.

B. fokkeri (Rt.) – Alexandria, many, 5. – 6. VIII. 1961; 50 km N. of Ismailia, many, 17. VI. 1961. Swept from halophytes.

Campylomma Rt.

C. nicolasi P. Rt. – Mersa Matruh, some, Eckerlein; Siwa (HOBERLANDT *op. cit.*, p. 368).

C. impicta E. Wgn. – Assiut, many, 30. – 31. VII. 1961; Cairo, many, 10. – 19. VI. 1961, IX. 1962; Cairo – Suez desert road, some, 14. – 15. IX. 1962; Dakhla, some, 20. – 21. IX. 1962; Fayoum, many 13. – 14. VI. 1961; Heluan, some, 9. IX. 1962; 50 km N. of Ismailia, 17. VI. 1961; Kharga, many, 19. – 22. IX. 1962; Luxor, many. 26. – 28. VII. 1961; Meadi, some, 12. VI. 1961. Common on cultivated fields and in deserts both on herbaceous plants and on bushes and trees. Also at lamps.

C. annulicornis (Sgn.) – Siwa (HOBERLANDT *op. cit.*, p. 368).

C. diversicornis Rt. – Siwa (HOBERLANDT *op. cit.*, p. 368).

C. zizyphi Rt. – Heluan, 1 spec., U. Saalas.

C. angustula Rt. – Heliopolis, 1 spec., J. Sahlberg; Siwa (HOBERLANDT *op. cit.*, p. 368).

Paramixia Rt.

P. suturalis Rt. – 50 km N. of Ismailia, some, 17. VI. 1961; Meadi, 1 spec., 12. VI. 1961; Sokhna, 1 spec., 16. VI. 1961. On *Cyperaceae* in wet places. At lamp.

Auchenocrepis Fb.

A. alboscutellata Pt. – Alexandria, 2 spec., 5. – 6. VIII. 1961; Cairo, many, 10. – 19. VI. 1961; 50 km N. of Ismailia, some, 17. VI. 1961; Luxor, many, 26. – 28. VII. 1961; near Suez, some, 16. VI. 1961. On *Tamarix*.

Tuponia Rt.

T. pallida Rt. – Siwa (HOBERLANDT *op. cit.*, p. 369).

T. elegans (Jak.) – Siwa (HOBERLANDT *op. cit.*, p. 369). – The species is common in Turkestan and Iran, but I have not seen it from the western parts of the Middle East. The westernmost find I have seen, probably as a separate subspecies, is from Bulgaria.

T. lethierryi Rt. nominate form. – Fayoum, 2 spec., J. Sahlberg.

T. lethierryi Rt., ssp. *vulnerata* Lv. – Cairo, some, 10. – 19. VI. 1961; 50 km N. of Ismailia, some 17. VI. 1961; near Suez, some, 16. VI. 1961. On *Tamarix*.

T. tamaricicola Ldb. – Dakhla, some, 20. – 21. IX. 1962; Fayoum, 1 spec., 13. – 14. VI. 1961; Kharga, some, 19. – 22. IX. 1962; Luxor, many, 26. – 28. VII. 1961. On *Tamarix*.

T. hippophaes (Fb.) – Siwa (HOBERLANDT *op. cit.*, p. 369).

T. longipennis Hv. ssp. *guttata* E. Wgn. – Cairo, many, 10. – 19. VI. 1961; Dakhla, 1 spec., 20. – 21. IX. 1962; Heluan, 2 spec., 9. IX. 1962; 50 km N. of Ismailia, some, 17. VI. 1961. On *Tamarix*.

T. concinnoides Lv. – Alexandria, many, 5. – 6. VIII. 1961; Fayoum, 2 spec., J. Sahlberg; 50 km N. of Ismailia, 1 spec., 17. VI. 1961; near Suez, 1 spec., 16. VI. 1961. On *Tamarix*.

T. concinna Rt.

In the Egyptian specimens the vertex (♂) is 1.2 – 1.44 × as broad as eye, while 1.6 × in specimens from Algeria. Possibly the Egyptian specimens belong to a separate subspecies. Additional material from different parts of the Sahara are needed before this can be confirmed. As I have pointed out before, (LINNAVUORI 1962, p. 34), *T. conspersa* Rt. is also closely related to *T. concinna*. If *T. concinna* were to be split into different subspecies in the Sahara, *T. conspersa* could possibly be regarded as the easternmost subspecies of *T. concinna*.

Assiut, 1 spec., 30. – 31. VII. 1961; Dakhla, some, 20. – 21. IX. 1962; Luxor, 1 spec., 26. – 28. VII. 1961; Sinai, Wadi Feiran, some, 25. – 29. IX. 1962; near Suez, many, 16. VI. 1961. On *Tamarix*.

T. minutissima Lv. – Sokhna, some, 16. VI. 1961. On *Tamarix*. New for Egypt. Previously known from Israel.

T. minima E. Wgn. – Dakhla, 2 spec., 20. – 21. IX. 1962. On *Tamarix*. New to Egypt. Previously known from Iran.

Aphanophyes Rt.

E. WAGNER (1964 b, p. 21 – 26) discussed the taxonomic status of the genus *Aphanophyes* Rt. and regarded it as a separate genus, closely related to *Tuponia* Rt. The relationship is very close indeed; it is to be noted that, for instance, a much similar biramose penis type occurs also in the *concinna* group within the genus *Tuponia*. Nevertheless, *Aphanophyes* deserves at any rate a subgeneric rank within *Tuponia*.

E. WAGNER (*op. cit.*) recorded 3 species of the genus: *A. laticeps* Rt. (= *vitticollis* Rt.), *A. richteri* (E. Wgn.) and *A. obscuriceps* (Rt.). These species were synonymized by me (LINNAVUORI 1961, p. 32 – 33) on the base of the similarity in the genitalia. Afterwards I have been able to collect a considerable additional material from North Africa and Arabia. At present I regard *A. laticeps* and *A. richteri* as separate species. Some additions, however, have to be made to WAGNER's recent paper. 1) The size of *A. richteri* is usually smaller than in *A. laticeps*, although both species overlap. The length of *A. laticeps* is 2.6 – 3.25 mm, of *A. richteri* 2.2 – 3.15 mm. There seems to be a certain local variability in the populations of *A. richteri*. I have seen series of unusually large specimens from Libya and Arabia. 2) The vertex in *A. laticeps* is 1.67 – 2.0 × (♂) or 2.7 – 3.3 × (♀) as broad as eye, while in *A. richteri* the corresponding proportions are 1.5 – 2.0 × (♂) or 2.4 – 3.1 × (♀); there is thus a broad overlapping also in this respect. 3) The vesica of *A. richteri* is somewhat robuster, with one of its branches expanded apically. The shape of the last-named is, however, somewhat variable. 4) The other differences mentioned by WAGNER are too small and variable to be of greater taxonomic importance. 5) A good difference is to be found in the colouring. Although *A. laticeps* is very variable in this respect, this species is usually considerably darker and never bright green as *A. richteri* always is. 6) The biology is entirely different in both species: *A. laticeps* lives on *Limoniastrum guyonianum*, while *A. richteri* is strictly monophagous on *Tamarix*. The record of *Ephedra alata* as the host plant is erroneous.

WAGNER also regarded *A. obscuriceps* as a valid species. I have not seen the male type of this species. The female cotype in coll. Reuter has greenish elytra and could belong to *A. richteri*. The male has, according to WAGNER, a somewhat exceptional ocular index, the vertex being 2.2 × as broad as the eye. Noting, however, the considerable indi-

vidual variability in the ocular index in *A. richteri*, and the fact that the specimens were collected from *Limoniastrum* in the same locality as *A. laticeps*, there seems to be no doubt about the identity of *A. obscuriceps* and *A. laticeps*, as I pointed out before.

A. richteri (E. Wgn.) – Alexandria, many, 5. – 6. VIII. 1961; Luxor, many, 26. – 28. VII. 1961. On Tamarix. New to Egypt. Eremian.

Eurycranella Rt.

E. geocoriceps Rt. – Luxor, many, 26. – 28. VII. 1961; Siwa (HOBERLANDT *op. cit.*, p. 369). On *Tamarix*.

Mesoveliadae

Mesovelia Ms.

M. vittigera Hv. – Cairo, many, 10. – 19. VI. 1961, IX. 1962. Very common in canals among dense vegetation, e.g. *Eichhornia*.

Hydrometridae

Hydrometra Latr.

H. aegyptia Hf. Ev. – Fayoum, 1 spec., J. Sahlberg.

Gerridae

Limnogonus Stål

L. cereiventris (Sgn.) ssp. *leptocerus* (Rt.) – Cairo, many, 10. – 19. VI. 1961, IX. 1962. Common in canals among vegetation.

Naboandelus Dist.

N. bergevini Bg. – Cairo, 3 spec., S. Patrizi.

Veliadae

Rhagovelia M.

R. nigricans (Bm.) – Fayoum, many, 13. VI. 1961; Kharga, many, 22. IX. 1962. On rapidly running water in small brooks. In Kharga the rare macropterous form was also found.

Microvelia Ww.

M. waelbrocki Kk. – Cairo, 2 spec., 1. – 2. VIII. 1961. Among dense vegetation (*Eichornia*) in a canal.

M. pygmaea (Df.) – Cairo, many, 10. – 19. VI. 1961, 1. – 2. VIII. 1961, IX. 1962. Like the preceding.

M. priesneri Hob. – Alexandria, many, 5. – 6. VIII. 1961. Common among floating green algae in small artificial brackish water pools for goats. Several macropterous specimens were also found.

Leptopodidae

Patapius Hv.

P. sentus Dr. & Hob. – Heluan (DRAKE & HOBERLANDT 1950, p. 3). Recorded as *Patapius* sp. by PRIESNER & ALFIERI (*op. cit.*, p. 104). I have collected 1 spec. near Ein Gedi in Israel.

Saldidae

Saldula V.D.

S. ornatula (Rt.) – Heluan, 1 spec., U. Saalas.

S. pallipes (F.) – Cairo, 1 spec., IX. 1962. At lamp.

S. palustris (Dgl.) ssp. *pallidipennis* (Rt.) – Heluan, 1 spec., U. Saalas.

Chartoscirta Stål

C. cincta (H.S.) – 50 km N. of Ismailia, 2 spec., 17. VI. 1961. New to Egypt. Euro-Siberian.

Omania Hv.

O. coleoptrata Hv. – 50 km N. of Mersa Alam, some, 3. X. 1962. On the under surface of loose, large stones of coral-lime just above the waterline on the shore of a lagoon on the Red Sea Coast.

Belostomatidae

Belostoma Latr.

B. cordofanum (M.) – Cairo, 4 spec., IX. 1962. At lamp.

Limnogeton M.

L. fieberi M. – Cairo, many, 10. – 19. VI and 1. – 2. VIII. 1961, IX. 1962. Among dense vegetation of *Eichhornia* in canals. Also at lamp.

Sphaerodema Lap.

S. urinator (Df.) – Cairo, many, 10. – 19. VI and 1 – 2.. VIII. 1961. IX. 1962. Like preceding. Very common.

Ranatridae

Ranatra F.

R. vicina Sgn. – Cairo, 4 spec., 10. – 19. VI. 1961, IX. 1962. Like preceding.

Notonectidae

Anisops Spin.

A. sardea H.S. – Assiut, some, 21. VI. 1961; Cairo, some, 10. – 19. VI. 1961, IX. 1962; Kharga, many, 19. – 22. IX. 1962.

A. debilis Gst. ssp. *perplexa* Ps. – Dakhla, some, 20. – 21. IX. 1962; Kharga, many, 19. – 22. IX. 1962; Siwa (HOBERLANDT *op. cit.*, p. 370). On flooded rice-fields and in irrigation ditches.

A. varia Fb. – Alexandria, many, 5. – 6. VIII. 1961. In the same pools as *Microvelia priesneri*.

Enithares Spin.

E. rhodopis Hc. – Dakhla, some, 20. – 21. IX. 1962; Kharga, many, 19. – 22. IX. 1962. Together with *Anisops debilis* ssp. *perplexa*. New to Egypt. Ethiopian. The find in Egypt is interesting because relatively few Ethiopian species have been able to spread across the Sahara. Recorded as *Notonecta* sp. by PRIESNER & ALFIERI (*op. cit.*, p. 109).

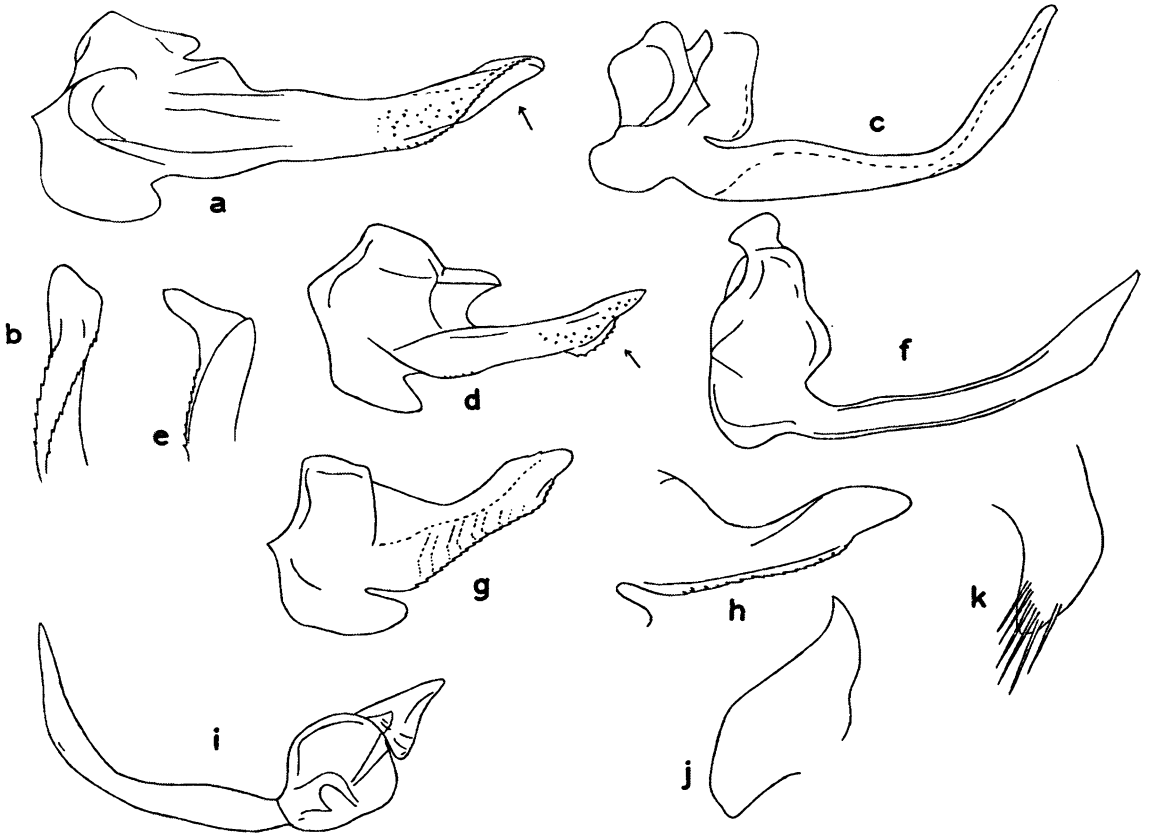

Fig. 22. *Micronecta scutellaris* Stål (from Hagoshrim, Israel): a left stylus; b apex of same from the direction of the arrow; c right stylus. – *M. plicata* C. (from Assiut): d-f same. – *M. isis* Hv. (from Assiut): g left stylus: h same of a specimen from Lahej, W. Aden Prot.; i right stylus; j prestrigilar flap; k free lobe of 8th tergite.

Pleidae

Plea Lch.

P. pullula (Stål) – Cairo, 1 spec., IX. 1962. At lamp.

Corixidae

Micronecta Kk.

M. plicata (C.)

Much as *M. scutellaris*, but smaller, length 2.7 – 3.45 mm. Left stylus (Fig. 22 d-e) ± sharply pointed apically, although the shape of the apex is somewhat variable. Right stylus (Fig. 22 f) thicker than in *M. scutellaris*, apex somewhat expanded and ± upcurved.

Assiut, many, 30. – 31. VII. 1961; Cairo, many, IX. 1962; Luxor, 1 spec., 26. – 28. VII. 1961. At lamps.

M. scutellaris Stål

Bigger, length about 3.9 mm. Left stylus (Fig. 22 a-b) with a blunt apex. Right stylus (Fig. 22 c) longer and thinner.

Assiut, 2 spec., 30. – 31. VII. 1961; Cairo, some, IX. 1962. At lamps.

M. isis Hv. (= *horvathi* Ldb.)

Male genitalia: Prestrigilar flap as in Fig. 22 j. Free lobe of 8th tergite as in Fig. 22 k. Right stylus (Fig. 22 i) slender, nearly straight in basal half, apex upcurved. Left stylus (Fig. 22 g-h) thick and minutely serrate.

I have studied the type of *M. horvathi* Ldb. and confirmed the synonymy already suggested by PRIESNER & ALFIERI (*op. cit.*, p. 111).

Assiut, many, 30. – 31. VII. 1961; Cairo, some, 10. – 19. VI. 1961, IX. 1962; Luxor, 1 spec., type of *M. horvathi* J. Sahlberg, many, 26. – 28. VII. 1961; Meadi, 1 spec., 12. VI. 1961. At lamp.

Corixa G.

C. affinis Lch. – Cairo, 1 spec., 10. – 19. VI. 1961.

Heliocorisa Lbl.

H. vermiculata (Pt.) – Siwa (HOBERLANDT *op. cit.*, p. 370).

Sigara F.

S. (*Vermicorixa*) *lateralis* (Lch.) – Cairo, some, 10. – 19. VI. 1961, IX. 1962; Dakhla, some, 20. – 21. IX. 1962; Kharga, some, 19. – 22. IX. 1962.

S. (*Halicorixa*) *mayri* Fb. – 50 km N. of Ismailia, many, 17. VI. 1961.

S. (*Halicorixa*) *selecta* Fb. – 50 km N. of Ismailia, many, 17. VI. 1961; Siwa (HOBERLANDT *op. cit.*, p. 370).

S. (*Tropocorixa*) *sexlineata* Rt. (= *hedenborgi* Lbl.) – Assiut, 1 spec., 30. – 31. VII. 1961; Cairo, 1 spec., 10. – 19. VI. 1961. At lamp.

S. (*Tropocorixa*) *hoggarica* Ps. (= *brevixipha* Brw.) – Kharga, some, 19. – 22. IX. 1962. On the same rice-field as *Anisops debilis* ssp. *perplexa*.

2. Homoptera

Cicadidae

Adeniana Dist.

A. longiceps (Pt.) – Egypt (OSHANIN 1912, p. 95). Eremian. Known from North Africa and Israel.

Cicada L.

C. cerisyi (Guér.) – Egypt (OSHANIN *op. cit.*, p. 95). Endemic.

Cicadatra Klt.

C. flavicollis Hv. – Massara (HORVATH 1911, p. 16). Also from Israel and Arabia.

Cicadetta Klt.

C. musiva (Germ.) – Sokhna, 2 spec., 16. VI. 1961. On *Tamarix*. Eremian.

Cercopidae

Philaenus Stål

P. impictifrons Hv. – Egypt (OSHANIN *op. cit.*, p. 98). Syrio-Anatolian. Known from Israel, Syria and Turkey.

Membracidae

Oxyrrhachis Germ.

O. furva Cpn. – Fayoum, some, 18. IX. 1962. On *Acacia nilotica*. New to Egypt. Eremian, known from Spanish Sahara and Israel.

O. caligula Cpn. – Egypt (CAPENER 1962, p. 126); Assiut, some, 30. – 31. VII. 1961; Sokhna, many, 15. IX. 1962. On *Acacia nilotica* and *A. raddiana*. Eremian. Known also from Spanish Sahara and Israel.

O. egyptiana Dist. – Egypt (CAPENER *op. cit.*, p. 127); Sokhna, some, 15. IX. 1962. On *Acacia raddiana*.

O. versicolor Dist. – Sokhna, some, 15. IX. 1962. On *Tamarix*. New to Egypt. Eremian, with a wide range in the Sahara, Arabia and Israel.

O. capeneri Izz. – 12 km NE of El Arish, Sinai, many, XII. 1956, Wahrman; Egypt (CAPENER *op. cit.*, p. 139). Eremian. Known from S. Italy and Israel.

Centrotus F.

C. israelensis Lv. – Sokhna, some, 15. IX. 1962. On *Acacia raddiana*. Previously known from Israel.

C. nervosus Motsch. – Egypt (OSHANIN *op. cit.*, p. 99). Endemic.

Cicadellidae

Euscelinae

Macrosteles Fb.

M. sexnotatus (Fn.) – Cairo, some, 10. – 19. VI. 1961. From a cultivated field. Holarctic.

Cicadulina Ch.

C. bipunctella (Mats.) – Assiut, many, 30. – 31. VII. 1961; Cairo, many, 10. – 19. VI. 1961, IX. 1962; Dakhla, 2 spec., 20. – 21. IX. 1962; Fayoum, some, 13. – 14. VI 1961; Luxor, many, 26. – 28. VII. 1961; Port Said (MATSUMURA 1908, p. 12). Common on cultivated fields, especially on corn. Also at lamps. Intertropical.

Pteropyx Hpt.

P. hyalinus Hpt. – Luxor, some, 26. – 28. VII. 1961. On *Panicum turgidum*. Eremian. Previously known from Israel.

Cicadulella Ch.

C. pallida (Hpt.) – Cairo, some, 10. – 19. VI. 1961, IX. 1962. On *Panicum turgidum*. Eremian. Previously known from Israel.

Balclutha Kk.

B. rufofasciata (Mer.) – Cairo, many, 10. – 19. VI. 1961. Common on grasses (alfalfa) near canals and on fields. New to Egypt. Intertropical.

B. saltuella (Kbm.) – Cairo (HORVATH 1911, p. 116). Cosmopolitan.

B. hebe (Kk.) – Cairo, some, 10. – 19. VI. 1961, IX. 1962; Cairo – Suez desert road, some, 14. – 15. IX. 1962; Fayoum, some, 13. – 14. VI. 1961; Luxor, some, 26. – 28. VII. 1961; near Suez, some, 15. IX. 1962. Common on cultivated fields. This species should probably include *B. chloris* Hv. recorded from Massara by HORVATH (*op. cit.*, p. 116). Cosmopolitan.

Stirellus O.B.

S. (s. str.) *instabilis* (Rib.) – Cairo, 3 spec., 10. – 19. VI. 1961; Kharga, 2 spec., 19. – 22. IX. 1962. In dry sandy localities. New to Egypt. Pontomediterranean.

S. (*Pseudaconura*) *luxorensis* (Lv.) – Luxor, 1 spec., J. Sahlberg. Eremian. Known also from Israel and the Sudan.

Nephotettix Mats.

N. apicalis (Motsch.) – Cairo, many, 10. – 19. VI. 1961, IX. 1962; Assiut, 30. – 31. VII. 1961. On grasses in wet biotopes. At lamp. New to Egypt. Intertropical.

Exitianus Ball

E. capicola (Stål) – Assiut, some, 30. – 31. VII. 1961; Cairo, some, 10. – 19. VI. 1961, IX. 1962; Fayoum, some, 13. – 14. VI. 1961; Luxor, some, 26. – 28. VII. 1961; near Suez, some, 16. VI. 1961. Common among different herbs, e.g. in cultivated fields. At lamps. Cosmopolitan.

E. fasciolatus (Mel.) – Suez, 1 spec., 16. VI. 1961. New to Egypt. Ethiopian with a large extension into the Orient.

Nesophrosyne Kk.

N. (*Orosius*) *filigranus* (Hpt.) – Assiut, many, 30. – 31, VII. 1961; Cairo, some, 10. – 19. VI. 1961, IX. 1962; Dakhla.

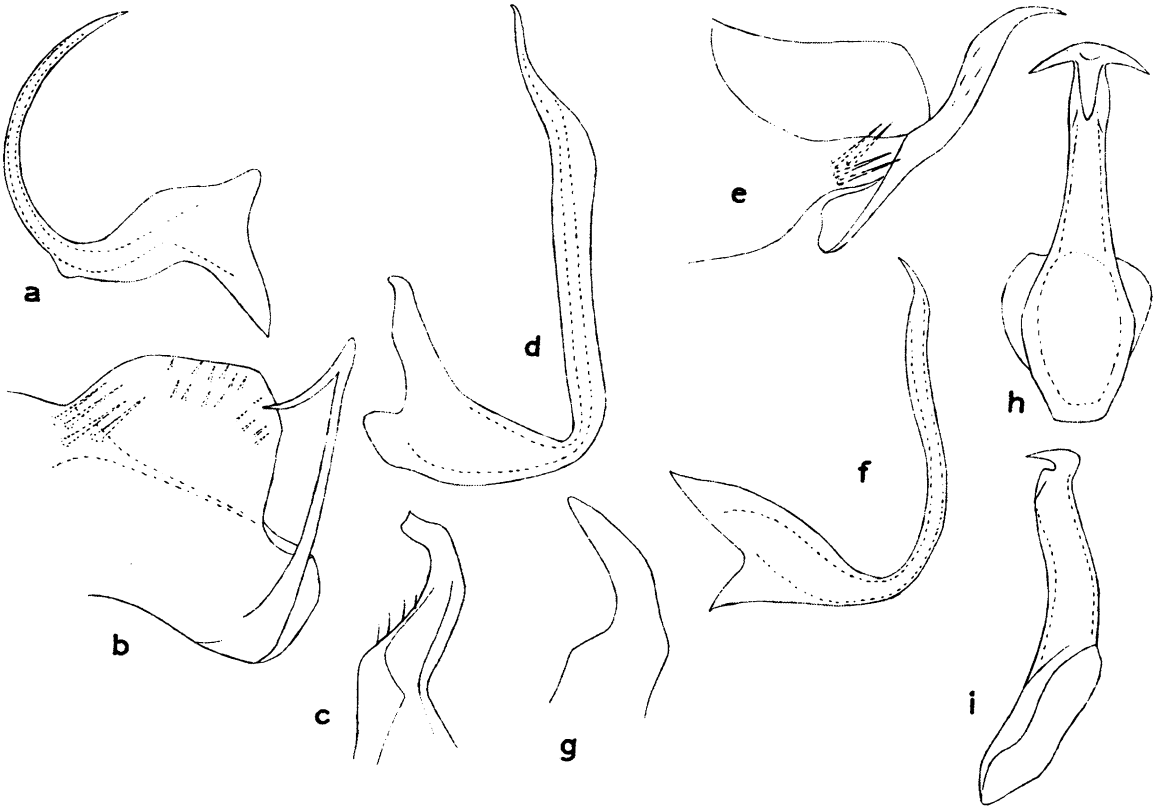

Fig. 23. *Paralimnus subtilis* sp. n.: a penis, lateral aspect. – *Grammacephalus pugio* (Nh.) (from Deganya, Israel): b side lobe of pygofer, median aspect; c apex of stylus; d penis, lateral aspect. – *G. turneri* (Ev.) sensu Ldb. (from Assiut): e side lobe of pygofer, median aspect; f penis, lateral aspect; g apex of stylus. – *Mocuellus niloticus* sp. n.: h penis, ventral aspect; i same, lateral aspect.

1 spec., 20. – 21. IX. 1962; Luxor, many, 26. – 28. VII. 1961; near Suez, 1 spec., 16. VI. 1961. Common in cultivated biotopes. At lamp. New to Egypt. Eremian.

Neoaliturus Dist.

N. tenellus (Bak.)

Thamnotettix tenellus BAKER 1896, p. 24

Thamnotettix egyptiacus MATSUMURA 1908, p. 16, syn. n. Alexandria, some, 5. – 6. VIII. 1961; Assiut, some, 30. – 31. VII. 1961; Cairo – Suez desert road, 1 spec., 14. – 15. IX. 1962; Dakhla, 1 spec., 20. – 21. IX. 1962; near Suez, 1 spec., 16. VI. 1961. Especially on Chenopodiaceae. Cosmopolitan.

N. fenestratus (H.S.) – Marg (HORVATH *op. cit.*, p. 116). Holomediterranean.

Opsius Fb.

O. lethierryi W. Wgn. – Alexandria, 1 spec., 5. – 6. VIII. 1961; Heluan, 1 spec., 9. IX. 1962; near Suez, some, 16. VI. 1961. On *Tamarix*. Holomediterranean.

O. scutellaris (Leth.) – Cairo, many, 10. – 19. VI. 1961; Dakhla, 3 spec., 20. – 21. IX. 1962; near Suez, 2 spec., 16. VI. 1961. On *Tamarix*. New to Egypt. Eremian.

O. pallasi (Leth.) – Alexandria, 3 spec., 5. – 6. VIII. 1961; Dakhla, some, 20. – 21. IX. 1962; Sinai, Wadi Feiran, 1 spec., 25. – 29. IX. 1962; near Suez, 2 spec., 16. VI. 1961. On *Tamarix*. Eremian. New to Egypt.

O. jucundus (Leth.) (det. W. Wagner) – Siwa, some spec. in the British Museum. Eremian.

Neolimnus Lv.

N. aegyptiacus (Mats.) – Assiut, some, 30. – 31. VII. 1961; Egypt (MATSUMURA 1908, p. 30); Luxor, many, 26. – 28. VII. 1961. On cultivated fields. At lamp. Eremian.

Paralimnus Mats.

P. subtilis sp. n.

4 – 4.5 mm. Golden ochraceous. Anterior margin of head whitish, bordered with black both above and below. Lower part of face pale, frontoclypeus with ± developed fuscous lateral arcs. Disc of crown with 2 ± squarish fulvous areas. Pronotum and scutellum with fulvous markings. Elytra golden yellowish; veins mainly whitish, ± bordered with dark fuscous; 3rd apical cell with a round dark spot.

Crown bluntly angularly produced, distinctly longer at middle than next to eyes. Penis (Fig. 23 a) with stem slender

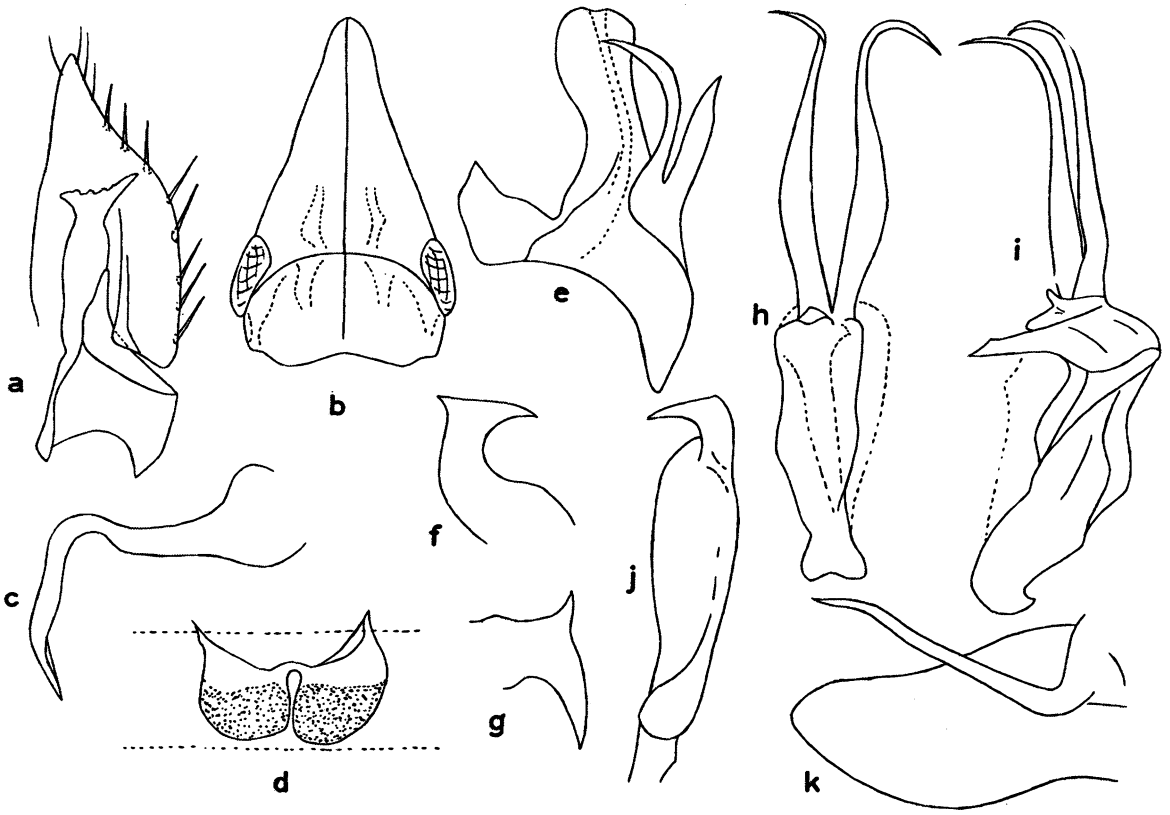

Fig. 24. *Mocuellus niloticus* sp. n.: a genital plate and stylus. – *Paradorydium desertorum* sp. n.: b head and pronotum (♀). – *Chlorita albida* sp. n.: c appendage of anal tube; d dorsal abdominal apodemes. – *Erythroneura alexandrina* sp. n.: e penis, lateral aspect; f apex of stylus; g anal hook. – *E. capreola* sp. n.: h penis, ventral aspect; i same, lateral aspect; j stylus; k side lobe of pygofer, median aspect.

and arcuate, provided with a small subbasal knob on the ventral surface; length of the stem 0.15 mm.

Cairo, 1 ♂ (type), 10. – 19. VI. 1961; Fayoum, 1 paratype, 13. – 14. VI. 1961; 50 km N. of Ismailia, many paratypes, 17. VI. 1961. In wet places on *Phragmites*.

Near *P. picturatus* Hpt. and *P. inexpectatus* Dlab., but with paler markings, longer crown and more gracile and longer penis. Length of the stem of the penis less than 0.12 mm in the other species.

Grammacephalus Hpt.

G. turneri (Ev.) sensu Ldb.

Very closely related to the Palestinian *G. pugio* (Nlh.). The two species are easy to distinguish, however, on the male genitalia: Appendage of the side lobe of pygofer is shorter and thicker in *G. turneri* (Fig. 23 e), long and slender and apically hook-shaped in *G. pugio* (Fig. 23 b). In *G. turneri* the penis (Fig. 23 f) is much more gracile than in *G. pugio* (Fig. 23 d).

Assiut, many, 30. – 31. VII. 1961; Cairo, 3 spec., 10. – 19. VI. 1961; Dakhla, 2 spec., 20. – 21. IX. 1962; Luxor, some, 26. – 28. VII. 1961. At lamps. New to Egypt. Ethiopian.

Psammotettix Hpt.

P. adriaticus W. Wgn. ssp. *linnavuorii* W. Wgn. – Alexandria, 3 spec., 5. – 6. VIII. 1961. From dune-grasses. Previously known from Israel.

P. majusculus Lv. – Near Suez, 16. VI. 1961, 3 spec. New to Egypt. Syrio-Anatolian.

P. alienus (Dlb.) – Assiut, some, 30. – 31. VII. 1961; Cairo, many, 10. – 19. VI. 1961, IX. 1962; Fayoum, 1 spec., 13. – 14. VI. 1961; Kharga, 1 spec., 19. – 22. IX. 1962; Luxor, many, 26. – 28. VII. 1961. On cultivated fields. At lamp. Euro-Siberian. New to Egypt.

Deltocephalus Bm.

D. (Recilia) schmidtgeni W. Wgn. – Assiut, some, 30. – 31. VII. 1961; Fayoum, 1 spec., 13. – 14. VI. 1961. New to Egypt. Holomediterranean.

Jubrinia Lv.

J. distincta Lv. – Cairo, 1 spec., 10. – 19. VI. 1961. On *Panicum turgidum*. Previously known from Israel.

Mocuellus Rib.

M. niloticus sp. n.

3 mm. Greyish green. Median stripe on anteclypeus, sutures of lora and frontoclypeus, excluding a pale median stripe and pale lateral arcs, dark fuscous. Anterior margin of crown with 2 transverse dark fuscous spots (often coalescent, forming a transverse band) on either side. Elytra greenish hyaline; veins green, ± bordered with fuscous. Under surface blackish. Legs yellow, femora with transverse dark spots.

Small and gracile. Crown bluntly angularly produced. Elytra longer than abdomen, outer subapical cell small. Spinulation of fore tibiae 1 + 4. Male genitalia: Genital plates sharply triangular, lateral margin slightly insinuated. Stylus as in Fig. 24 a. Penis (Fig. 23 h-i) rather short, apex with 2 short processes. Other genitalia of the common type. 7th sternite (♀) roundedly produced.

Cairo, 1 ♂ (type), some paratypes, 10. – 19. VI. 1961. Swept from wet places near canals.

Easily recognized by the small, gracile body, the colouring and the genitalia.

Aconura Leth.

A. amitina (Mel.) – Cairo, 1 spec., 10. – 19. VI. 1961; Dakhla, 1 spec., 20. – 21. IX. 1962. New to Egypt. Eremian. Known from Arabia, Israel and Caucasia.

Aconurella Rib.

A. prolixa (Leth.) – Alexandria, some, 5. – 6. VIII. 1961; Assiut, some, 30. – 31. VII. 1961; Cairo, some, 10. – 19. VI. 1961, IX. 1962; Cairo – Suez desert road, 1 spec., 14. – 15. IX. 1962; Fayoum, 1 spec., 13. – 14. VI. 1961; Luxor, some, 26. – 28. VII. 1961; near Suez, 1 spec., 16. VI. 1961. Common, especially on cultivated fields. At lamps. Eremian.

Chiasmus M.R.

C. conspurcatus (Perr.) – Dakhla, 1 spec., 20. – 21. IX. 1962; Egypt (OSHANIN *op. cit.*, p. 104). Holomediterranean.

Goniagnathus Fb.

G. guttulinervis (Kbm.) – Luxor, 4 spec., 26. – 28. VII. 1961; Cairo and Meadi (HORVATH *op. cit.*, p. 117).

G. palliatus (Leth.) – Cairo, many, 10. – 19. VI. 1961; Kharga, 1 spec., 19. – 22. IX. 1962. On *Tamarix*. Eremian.

Hecalus Stål

H. glaucescens (Fb.) – Assiut, 1 spec., 30. – 31. VI. 1961; Cairo, some, 10. – 19. VI. 1961; Dakhla, some, 20. – 21. IX. 1962; Kharga, 2 spec., 19. – 22. IX. 1962. On grasses. Holomediterranean.

Bordesia Bgv.

B. mitrata Bgv. – Cairo, 1 spec., IX. 1962. On *Panicum turgidum*. Eremian. New to Egypt. Previously known from the western parts of Sahara.

Paradorydiinae

Paradorydium Kk.

P. desertorum sp. n.

♂ 3 mm, ♀ 4 mm. Pale greyish ochraceous, with a greenish tinge when alive. Face usually with a ʌ-shaped black or dark fuscous figure.

Small. Crown triangularly produced (Fig. 24 b) with straight lateral margins, 1.23 (♂) or 1.47 (♀) × as long as basal width and 1.45 (♂) or 2.1 (♀) × as long as pronotum, with a sharp median ridge; disk sloping laterad, with a longitudinal basal elevation on either side of the median ridge. Frontoclypeus with a sharp median ridge, lateral margins flat. Pronotum with a sharp median ridge and 2 longitudinal elevations on either side. Elytra as long as abdomen. 7th sternite (♀) with a deep median U-shaped sinuation.

Cairo – Suez desert road, 1 ♀ (type), 4 paratypes, 14. – 15. IX. 1962. On *Panicum turgidum*.

Near *P. dimorphus* Lv., but clearly differing in the much shorter head. *P. breviceps* Mel. (known to me only in the literature) has a dissimilarly shaped head with distinctly insinuated lateral margins.

Agalliinae

Agallia Ct.

A. laevis Rib. – Alexandria, 1 spec., 5. – 6. VIII. 1961. New to Egypt. Holomediterranean.

A. halophila Ldb. – Dakhla, some, 20. – 21. IX. 1962; Luxor, some, 26. – 28. VII. 1961. New to Egypt. Eremian.

Austroagallia Ev.

A. dentata (Ldb.) – Alexandria, 3 spec., 5. – 6. VIII. 1961. New to Egypt. Eremian. Recorded from the Cape Verde Islands and Morocco.

A. quadricornis (Lv.). – Sinai, Wadi Feiran, some, 25. – 29. IX. 1962. Previously known from Israel. Probably Eremian.

Iassinae

Batrachomorphus Lew.

B. signatus Ldb. – Assiut, some, 30. – 31. VII. 1961; Cairo, some, IX. 1962; Dakhla, many, 20. – 21. IX. 1962; Fayoum, some, 18. IX. 1962; Kharga, some, 19. – 22. IX. 1962. On *Acacia* spp. Eremian.

Typhlocybinae

Empoasca Walsh

E. (*Asymmetrasca*) *decedens* Pl. – Luxor, some, 26 – 28.. VII. 1961. Holomediterranean.

E. (s. str.) *decipiens* Pl. ssp. *meridiana* Zachv. – Cairo, many, 10. – 19. VI. 1961, IX. 1962; Fayoum, 1 spec., 13. – 14. VI. 1961; Luxor, some, 26. – 28. VII. 1961; near Suez, some, 16. VI. 1961. Common at lamps. Holomediterranean, the subspecies with an eastern distribution.

E. (s. str.) *distinguenda* Pl. – Assiut, many, 30. – 31. VII. 1961. At lamp. Ethiopian, also known from Israel.

E. (s. str.) *lybica* Bgv. – Assiut, some, 30. – 31. VII. 1961; Luxor, some, 26. – 28. VII. 1961. At lamp. Ethiopian.

Chlorita Fb.

C. eremophila Lv. – Cairo – Alexandria desert road, some, 2. VIII. 1962. On *Artemisia monosperma*. Previously known from Israel.

C. albida sp. n.

As *C. tessellata* (Leth.), but considerably smaller, length 2 mm, whitish green; elytra whitish green, main part orna-

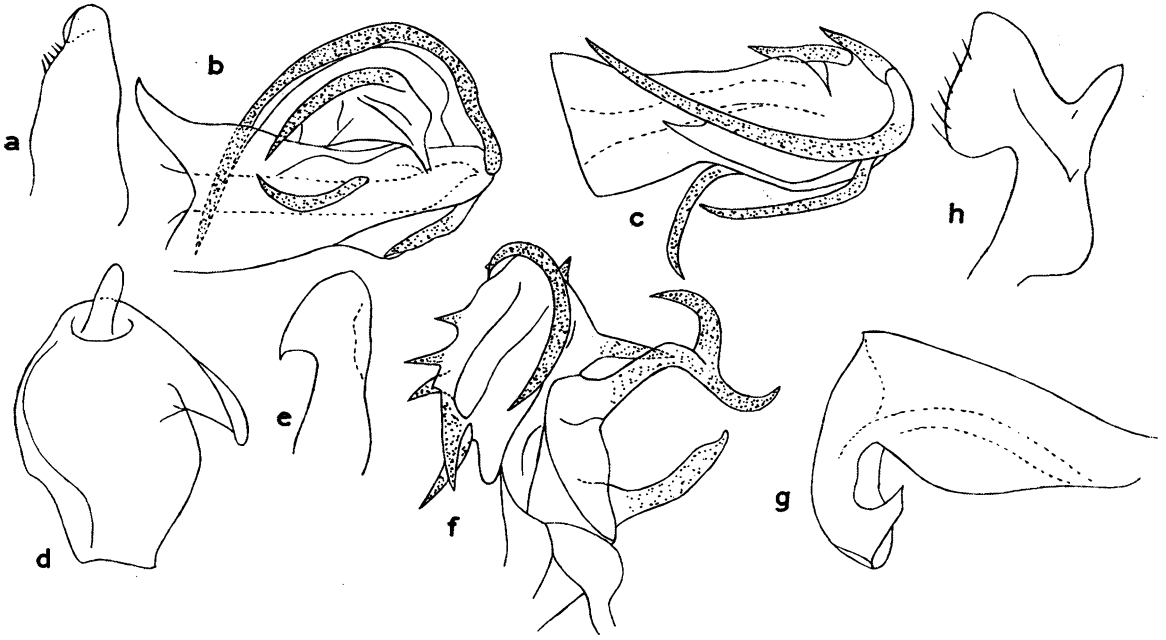

Fig. 25. *Erythroneura capreola* sp. n.: a genital plate. – *Oliarus frontalis* Mel.: b penis, lateral aspect; c same, dorsal aspect; d anal tube, ventral aspect; e stylus. – *O. beduinus* sp. n.: f penis, dorsal aspect; g anal tube, lateral aspect; h stylus.

mented with rather regularly squarish dark fuscous spots in cells, apical veins bordered with fuscous; appendages of anal tube as in Fig. 24 c. Penis as in *C. tessellata*. Dorsal abdominal apodemes as in Fig. 24 d.

Sinai, Wadi Feiran, 1 ♂ (type), many paratypes, 25. – 29. IX. 1962. On *Artemisia* sp.

Eupteryx Ct.

E. cypria (Rib.) – Cairo, some, 10. – 19. VI. 1961. Syrio-Anatolian.

Heliona Mel.

H. adspersa Hpt. – Luxor, 1 spec., 26. – 28. VII. 1961. Eremian. Previously known from Israel.

Helionidia Zachv.

H. (s. str.) *longifalx* (Lv.) – Assiut, 1 spec., 30. – 31. VII. 1961; Luxor, 2 spec., J. Sahlberg, many, 26. – 28. VII. 1961. On *Acacia*. Eremian.

H. (*Tamaricella*) *tamaricis* (Pt.) – Alexandria, many, 5. – 6. VIII. 1961; Dakhla, some, 20. – 21. IX. 1962; Luxor, some, 26. – 28. VII. 1961. On *Tamarix*. Holomediterranean.

H. (*Tamaricella*) *fasciolata* (Leth.) – Sinai, Wadi Feiran, some, 25. – 29. IX. 1962; Suez, some, 16. VI. 1961. On *Tamarix*. New to Egypt. Eremian.

Erythroneura Fitch

E. (*Zygina*) *alexandrina* sp. n.

2.5 – 2.75 mm. As *E. scutellaris* (H.S.), but tip of scutellum not black, anal hook (Fig. 24 g) and apex of stylus (Fig. 24 f) more sharply tipped and stem of penis (Fig. 24 e) much broader and the falcate appendages longer.

Alexandria, 1 ♂ (type), many paratypes, 5. – 6. VIII. 1961.

E. (*Zygina*) *serpentina* Mats. – Port Said (MATSUMURA 1908, p. 5). A dubious record. The type locality of the species is Sicily. At any rate it is hardly identical with *E. alexandrina*, since the length of *E. serpentina* is 3 – 3.9 mm according to the original description.

E. (*Zygina*) *capreola* sp. n.

A uniformly greenish, broad-headed species resembling *E. imbecilla* Lv., but smaller, length only about 3 mm. Male genitalia: Genital plates and stylus as in Fig. 24 j and 25 a. Side lobe of pygofer (Fig. 24 k) with a long appendage directed caudo-mesad. Penis (Fig. 24 h-i) with 2 long falcate appendages.

Sinai, Wadi Feiran, 1 ♂ (type) and 3 paratypes, 25. – 29. IX. 1962. On *Artemisia* sp.

E. (*Zygina*) *acaciae* Lv. – Assiut, some, 30. – 31. VII. 1961. On *Acacia*. New to Egypt. Previously known from Israel. Eremian.

E. (*Zygina*) *improvisa* Lv. – Luxor, some, U. Saalas; some, 26. – 28. VII. 1961. On *Acacia*. Eremian.

Dictyopharidae

Dorysarthrus Pt.

D. alfierii Bgv. – Near Sokhna, 1 spec., 16. VI. 1961. Eremian.

Dictyophara Gm.

D. striata Osh. – Cairo, some, 10. – 19. VI. 1961; Fayoum, 3 spec., 13. – 14. VI. 1961; Marg (HORVATH *op. cit.*, p. 117). Among herbs in fresh biotopes. Eremian, with a wide distribution in North Africa and Central Asia.

Tigrahauda Osh.

T. recurviceps Lv. – Sinai, Wadi Feiran, 2 spec., 25. – 29. IX. 1962. From desert plants. Eremian. Previously known from Israel.

Cixiidae

Oliarus Stål

O. frontalis Mel.

5.5 – 7 mm. Externally as *O. angustiformis* Lv., but with dissimilar genitalia: Stylus as in Fig. 25 e. Anal tube (Fig. 25 d) asymmetrical, left side with a thick apical process. Pygofer as in *O. angustiformis*. Penis as in Fig. 25 b-c.

Assiut, 2 spec., 30. – 31. VII. 1961; Dakhla, 3 spec., 20. – 21. IX. 1962; Fayoum, 2 spec., 18. IX. 1962; Luxor, 3 spec., 26. – 28. VII. 1961. HORVATH (*op. cit.*, p. 117) records the following finds: Choubra, Marg and Mataneh. On *Acacia*. Ethiopian.

O. beduinus sp. n.

5.5 mm. As *O. angustiformis* Lv., but somewhat smaller, elytral veins with concolorous knobs (setae worn out) and with different genitalia: Stylus (Fig. 25 h) battle-axe-shaped. Anal tube (Fig. 25 g) symmetrical, except that the right side lacks the claw-like apical process present on the left side. Pygofer as in *O. angustiformis*. Penis as in Fig. 25 f.

Sinai, Wadi Feiran, 1 ♂ (type), 25. – 29. IX. 1962.

O. pallens (Germ.) (= *suezensis* Mats.) – Assiut, 1 spec., 30. – 31. VII. 1961; Cairo, many, 10. – 19. VI. 1961, IX. 1962; Luxor, 3 spec., 26. – 28. VII. 1961; near Suez, many, 16. VI. 1961. Port Said (MATSUMURA 1910, p. 8). HORVATH (*op. cit.*, p. 117) records it from Matérié, and W. WAGNER, (1954, p. 212) from Siwa, Maragi, Khamissa, Koreishid, Baharein, El Arig, Tenterad, Sitra, Ilrhabit Uncorde, Jagub, Zeitoun and Tutuatee. Common in moist biotopes and at lamp. Pontomediterranean.

O. obscurus (Sgn.) – Marg and Mataneh (HORVATH *op. cit.*, p. 117). Possibly this refers to the preceding very variable species. Holomediterranean.

Pseudoliarus Hpt.

P. fuscofasciatus (Mel.) ssp. *aegyptiacus* W. Wgn. – Baharein; Siwa; Khamissa; Jagub; Girba and El Arig (W. WAGNER *op. cit.*, p. 214). Eremian, in the eastern parts of Sahara. I have collected it from Libya.

Epoliarus Mats.

E. politus Mats. – Port Said (MATSUMURA 1910, p. 12). Endemic.

Hemitropis Fb.

H. seticulosa (Leth.) – Cairo, some, 10. – 19. VI. 1961; Heluan, 1 spec., 9. IX. 1962; near Suez, many, 16. VI. 1961. W. WAGNER (*op. cit.*, p. 214) records the following finds: Siwa and Ilrhabit Uncorde. On *Tamarix*. Eremian.

Moysella Hv.

M. sinaitica Hv. – Sinai (HORVATH 1913, p. 398 – 399).

Delphacidae

Pseudaraeopus Kk.

P. bolivari (Mel.) – Cairo, some, 10. – 19. VI. 1961, IX. 1962. On *Panicum turgidum*. Holomediterranean. New to Egypt.

Perkinsiella Kk.

P. rivularis Lv. – Assiut, 30. – 31. VII. 1961. Previously known only from Israel. Eremian or Ethiopian.

Nephropsia C.

N. tuberipennis M.R. – Cairo, some, 10. – 19. VI. 1961; Kharga, 1 spec., 19. – 22. IX. 1962; near Suez, some, 16. VI. 1961. W. WAGNER (*op. cit.*, p. 217) records the following finds: Khamissa; Gara; Siwa and Tagzertie. Among herbs on moist shores. Holomediterranean.

Leptodelphax Hpt.

L. cyclops Hpt. – Alexandria, 3 spec., 5. – 6. VIII. 1961. Swept from dune grasses. Pontomediterranean with a southern distribution. Previously known from Israel and Cyprus.

Chloriona Fb.

C. flaveola Ldb. – Alexandria, 3 spec., 5. – 6. VIII. 1961; 50 km N. of Ismailia, 2 spec., 17. VI. 1951. On *Phragmites communis*. Holomediterranean. New to Egypt. Known from Turkey, Cyprus, Israel and Morocco.

Calligypona J. Sb.

C. (*Sogatella*) *suezensis* (Mats.)

Delphax suezensis MATSUMURA 1910, p. 35 – 36.

Liburnia vibix HAUPT 1927, p. 13 – 14, syn. n.

Assiut, some, 30. – 31. VII. 1961; Cairo, 1 spec., 10. – 19. VI. 1961; Port Said (MATSUMURA *op. cit.*).

The styli seem at certain angle to agree with the illustrations in the original description of *C. suezensis* and consequently *suezensis* and *vibix* have been synonymized. Possibly also *C. furcata* (Mats.) is an additional synonym for the species. Holomediterranean.

C. (*Sogatella*) *catoptron* Fenn. – Giza and Siwa (FENNAH 1963, p. 55). Very closely related to *C. suezensis* and possibly only a form of it. Also recorded from Israel and Jordania.

C. (*Sogatella*) *petax* Fenn. – Cairo, some, 10. – 19. VI. 1961. FENNAH (*op. cit.*, p. 70) records it from Siwa and Giza. Also known from Jordania.

C. hispidula Ldb. – Assiut, some, 30. – 31. VII. 1961; Luxor, 1 spec., 26. – 28. VII. 1961. Eremian. Previously recorded from the Canary Islands and Morocco.

C. sporoboli Ldb. – Assiut, 2 spec., 30. – 31. VII. 1961; Luxor, many, 26. – 28. VII. 1961. Eremian. Previously known only from the Cape Verde Islands.

C. typhae Ldb. – Assiut, 2 spec., 30. – 31. VII. 1961; 50 km N. of Ismailia, 1 spec., 17. VII. 1961. On wet shores. Eremian. Previously known from Israel, Morocco and the Canary Islands.

C. (*Metadelphax*) *propinqua* (Fb.) – Fayoum, 1 spec., 13. – 14. VI. 1961; Luxor, 3 spec., 26. – 28. VII. 1961; Suez,

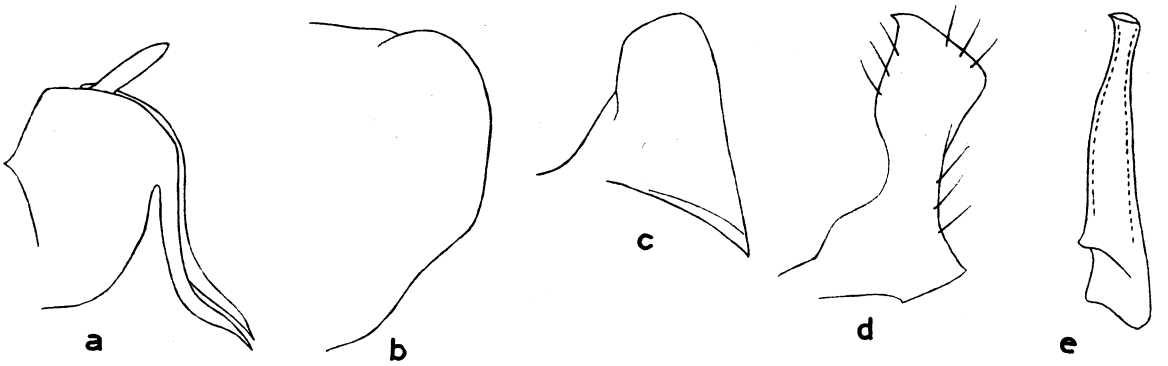

Fig. 26. *Calligypona bella* sp. n.: a anal tube, lateral aspect; b pygofer, lateral aspect; c right caudo-dorsal angle of pygofer, dorsal aspect; d stylus; e penis.

1 spec., 16. VI. 1961. HORVATH (*op. cit.*, p. 117) records it from Meadi and W. WAGNER (*op. cit.*, p. 218) from Siwa, Maragi, Gara, Khamissa, Zeitoun, Tutnatee, Jagub. Holomediterranean.

C. (*Metadelphax*) *minuscula* (Hv.) – Alexandria, 2 spec., 5. – 6. VIII. 1961. New to Egypt. Holomediterranean.

C. isis Lv. – Assiut, 1 spec., 30. – 31. VII. 1961; Luxor, 1 spec., J. Sahlberg. Endemic.

C. bella sp. n.

1.6 mm. Dark yellow. Elytra shining, brownish, scutellar margin yellowish.

Small but relatively robust. Frons narrowish, parallel-sided, median keel prominent also at apex of head. 2nd antennal joint remarkably robust, length 0.2 mm, 2.1 × as long as broad. Vertex 1.83 × as broad as long. Elytra reaching the genital segment, nearly twice as long as broad. Male genitalia: Genital segment transversely ovate in caudal aspect, rounded in lateral view (Fig. 26 b-c). Stylus as in Fig. 26 d. Anal tube (Fig. 26 a) with 2 parallel, falcate appendages. Penis (Fig. 26 e) simple and straight.

Cairo, 1 ♂ (type) 10. – 19. VI. 1961.

Easily recognized by the colouring, the small size and the male genitalia.

Meenoplidae

Nisia Mel.

N. atrovenosa (Leth.) – Cairo, 1 spec., 10. – 19. VI. 1961; El Marg (HORVATH *op. cit.*, p. 117). Intertropical.

Issidae

Asarcopus Hv.

A. palmarum Hv. – Cairo, 1 spec., IX. 1962. On date palms. Eremian. Also known from Arabia.

Perissana Metc.

P. circularis (Lv.) – Sinai, Dahab, 1 spec., 26. XI. 1956, Wahrman. Eremian. Previously known from Israel.

Hysteropterum A.S.

H. deserticola Lv. – Cairo – Suez desert road, 1 spec., 14. – 15. IX. 1962; near Sokhna, 1 spec., 16. VI. 1961. Swept from desert plants. New to Egypt. Eremian. Previously known from Israel.

Ricaniidae

Ricania Germ.

R. hedenborgi Stål – Egypt (OSHANIN *op. cit.*, p. 124). Pontomediterranean.

Flatidae

Phantia Fb.

P. indicatrix Wk. – Cairo – Suez desert road, 2 spec., 14. – 15. IX. 1962; Dakhla, some, 20. – 21. IX. 1962; Heluan, 2 spec., 9. IX. 1962; Siwa (W. WAGNER *op. cit.*, p. 219). On desert plants. Eremian.

Rhinophantia Mel.

R. longiceps (Pt.) – Cairo – Alexandria desert road, 1 spec., 2. VIII. 1963. From *Artemisia monosperma*. New to Egypt. Eremian, recorded from Israel and North Africa.

Derisa Mel.

D. pallida Fenn. – Fig. 2. Kharga, 2 spec., 19. – 22. IX. 1962; Sokhna, 4 spec., 16. VI. 1961. On *Tamarix*. Eremian. Previously known from Israel.

Holotypes of the species described in this publication belong to the collection of the author. Some of the paratypes are also to be found in the Zoological Museum of the University of Helsinki.

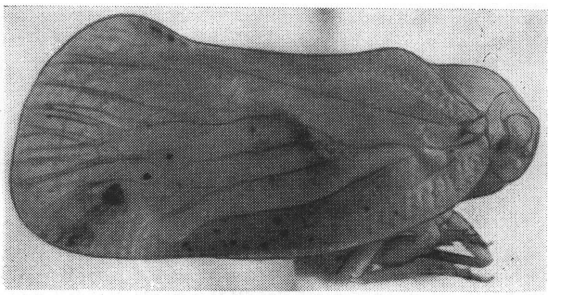

Fig. 27. *Derisa pallida* Fenn.

III. Survey of the topographical and biogeographical regions of Egypt

Egypt forms part of the immense plateau area of North Africa. The bedrock is mainly Cretaceous Nubian sandstone (especially in the south) and Cretaceous or Tertiary limestones, together with Tertiary sandy marls, sandstones, conglomerates, gypsum, etc., especially in the northern parts. In some places other rocks like basalt can also be found. The surface is usually covered with different sediments: dune sand (sandy deserts) or different types of sand, powdery gypsum, gravels, erosion pavements and hamadas (gravel deserts). The desert is dissected by the Nile Valley, whose soil is composed of river sediments, silt, etc. The altitude of the plateau varies from 4 m (Port Said) to 128 – 130 m above sea level (Assuan, Dakhla). In the Western Desert depressions below sea level also exist. The climate (Table 1) is extremely eremian: rains occur only in the north, while the large central and southern parts are entirely without rain. The temperature is subtropical, in the southern parts almost tropical.

Table 1. Climatological data from Egypt. According to Iso Tietosanakirja (The Finnish Encyclopedia) III, pp. 43 – 47 (1932).

Locality	Altitude a.s.l., m	Average temperature			Annual rainfall, mm
		Coldest month	Warmest month	Annual	
Alexandria	32	14.1° I	26.0° VIII	20.3°	220
Port Said	4	13.6° I	26.9° VIII	20.5°	82
Suez	5	13.0° I	28.5° VIII	21.3°	16
Cairo	30	12.3° I	28.6° VII	21.2°	32
Assiut	56	11.8° I	29.9° VII	21.9°	0
Dakhla	130	13.9° I	31.3° VII	24.2°	0
Assuan	128	16.0° I	35.2° VII	25.0°	0

Egypt (Fig. 28) can be divided into the following regions: 1) the Coastal Belt along the Mediterranean, 2) the Nile Region (the Delta, the Nile Valley, the Fayoum and a moist extension into the Canal Zone near Ismailia), 3) the oases of the Western Desert, 4) the Red Sea Coast, 5) the Eastern (= Arabian) Desert, 6) the Western (= Libyan) Desert and 7) Sinai.

1. The Coastal Belt

A narrow strip (e.g. on the Cairo-Alexandria desert road only 60 km wide) along the Mediterranean coast. Mainly covered by dunes near the sea, farther inland gravel and stony desert types also exist. The area has a winter rainfall like that of the other Mediterranean countries, although it is considerably lower than in Israel, the maximum annual rainfall being about 250 mm. Owing to the maritime situation the air is more humid than in the other parts of the country.

The vegetation near the sea consists of halophytes, such as different Chenopodiaceae, *Euphorbia paralias*, *Juncus acutus*, certain grasses, etc., together with *Tamarix*, thus resembling the corresponding biotopes in Israel, etc. In some places planted *Casuarina* forests and fig trees also occur. Otherwise the vegetation consists of maquis of the Mediterranean type.

2. The Nile Region

The region can be divided into the following subregions (TÄCKHOLM 1956): the Delta, including Cairo but not further south, the Nile Valley from Cairo to Wadi Halfa and the Fayoum. Moreover, I have also included in it an extension into the Ismailia area in the Canal Zone. The soil consists of river sediments which increase every year during the flooding of the Nile. The greatest width of the Delta is about 220 km, the breadth of the Valley varies from 6 to 25 km. Climatological data are seen in Table 1. The area gets winter rains only as far as the Cairo region, the upper part being rainless. Even in Cairo the rainfall is very scanty and irregular.

As pointed out before, the area is extensively cultivated and the original natural vegetation has long ago been destroyed. In the Delta there exist some coastal lakes (e.g. Lake Menzala) and some swamps here and there (area studied between Port Said and Ismailia). In these swamps the water is often more or less brackish and the vegetation forms dense thickets of *Phragmites*, *Typha australis* and *Juncus* or in other places of *Tamarix*. In drier, saline areas patches of saltmarsh with halophytes exist. In the Nile Valley isolated *Acacia arabica* ssp. *nilotica* trees and *Tamarix* bushes are all that survives of the original higher vegetation. The lower vegetation is to be found 1) in and along the irrigation canals; the Nile itself is less rich in vegetation. In these canals one can find a luxuriant submerged vegetation together with dense floats of *Eichhornia* harbouring a rich aquatic Hemipterous fauna. Just on the shores there exist narrow swampy patches with different species of *Cyperus*, etc.

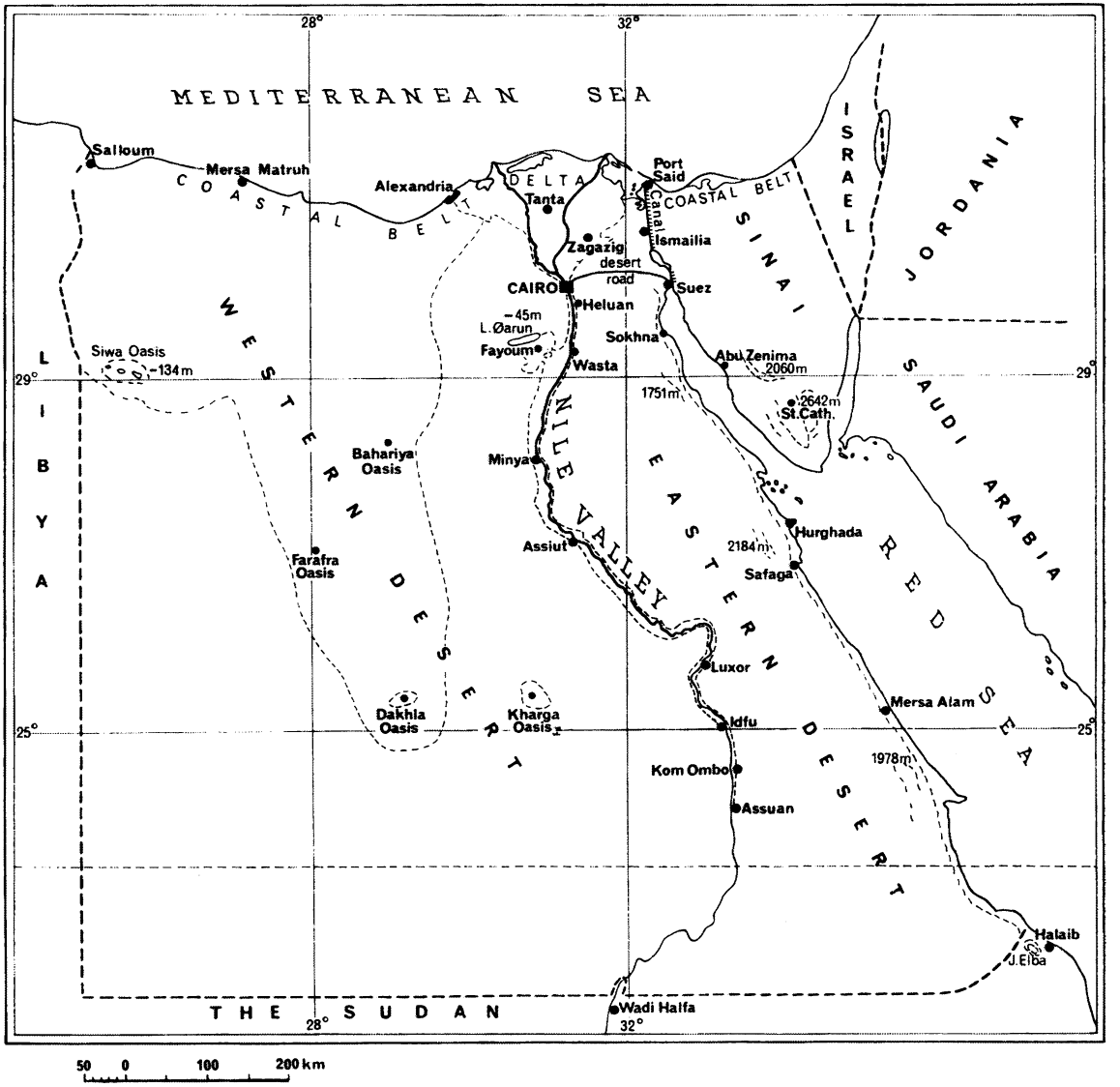

Fig. 28. Map of Egypt.

2) Between the fields such species as the halfa grass and different ruderal plants occur in dry places (*Amaranthus*, Labiatae, etc.). 3) An exceedingly interesting type of vegetation exists just at the border of the valley: some patches of desert vegetation with *Panicum turgidum*, *Echinops spinosissimus* and other desert plants. Unfortunately, only small patches remain at present, but in them several interesting Eremian Hemiptera could be found. For practical reasons these finds have been included in column II in Tables 2 and 3. The Fayoum much resembles the Nile Valley, from where it is watered. The salt lake (Lake Qarun) is partly fringed with salt-marshes with *Juncus*, Chenopodiaceae, etc.

3. The oases of the Western Desert

The most remarkable oases are Siwa, Bahariya, Farafra, Kharga and Dakhla, the last two of

Table 2. Distributional list of the Hemiptera of Egypt. – The Sudanese Jebel Elba area has been excluded, and some older records of doubtful species have been omitted. Explanations of the columns: I = the Mediterranean coastal strip, II = the Nile region (including the Delta, Fayoum and the humid parts of the Canal Zone), III = the oases of the Western (= Libyan) Desert (excl. Fayoum Oasis), IV = the Red Sea coast (littoral zone), V = the Eastern (= Arabian) Desert, VI = the Western Desert and VII = Sinai. In Column II the letter D refers to species found only in the Delta and in the Nile valley (to Cairo-Fayoum as the southernmost limit), the letter U to species found only in Upper Egypt to Assiut in the north. In Column III the letter S indicates species found only in the Siwa Oasis. Abbreviations of the distributional types: Cas = Caspian, Cos = Cosmopolitan, End = Endemic, ES = Euro-Siberian, Eth = Ethiopian, Eu = European, H = Holomediterranean, HA = Holarctic, Ir = Iranian, Itr = Intertropical, ITu = Irano-Turanian, P = Pontomediterranean, SA = Syrio-Anatolian, WM = West-Mediterranean. (S) = southern distribution, (P) = Palaeotropical distribution.

	I	II	III	IV	V	VI	VII	Distr. type
Cydnidae								
Byrsinus brevicornis E. Wgn.	–	–	–	–	+	–	–	P
B. albipennis (C.)	+	+D	–	–	–	–	–	H
Aethus hispidulus (K.)	–	+	–	–	–	–	–	Er
A. pilosus (H.S.)	–	–	–	–	–	–	+	H
A. macrophthalmus E. Wgn.	–	+D	–	–	–	–	–	Er
A. pilosulus (K.)	+	+	+	–	+	+	+	H
A. syriacus (Hv.)	+	–	–	–	–	–	–	Er
A. flavicornis (F.)	–	–	–	–	–	–	+	H
A. flavicornis longispinis E. Wgn.	+	–	–	–	–	–	–	P
A. pallidus (Pt.)	+	+	+	–	–	–	+	Er
Macroscytus brunneus (F.)	+	+	+	–	–	–	+	H
Geotomus intrusus E. Wgn.	–	+	–	–	–	–	–	Er
Cydnus aterrimus (Fst.)	+	+	–	–	–	–	–	H
Amaurocoris curtus (Br.)	–	+D	–	–	+	–	+	Er
Crocistethus waltlianus (Fb.)	–	–	–	–	–	–	+	H
Sehirus melanopterus (H.S.)	+	+D	+S	–	–	–	+	H
Ochetostethus brachyscytus Rt.	–	–	+	–	–	–	+	Er
O. sahlbergi E. Wgn.	–	+	–	–	–	–	–	H
Plataspididae								
Coptosoma sandahli Rt.	–	+U	–	–	–	–	–	Er
Pentatomidae								
Odontoscelis fuliginosus (L.)	–	+D	–	–	–	–	–	ES
O. dorsalis (F.)	–	+D	–	–	–	–	–	H
O. seminitens E. Wgn.	–	+D	–	–	–	–	–	P
O. tomentosus (Gm.)	–	+	–	+	+	–	–	Er
Irochrotus montandoni Scht.	–	+D		–	–	–	–	Er
Alphocoris larinoides Gm.	–	+	–	–	+	+	–	Er
Odontotarsus caudatus (Bm.)	–	+	–	–	–	–	–	H
O. robustus Jak.	–	–	–	–	–	–	–	H
O. horvathi Pt.	+	–	–	–	–	–	–	H (S)
O. concinnus Hv.	–	–	–	–	+	–	–	Er
O. rugicollis Jak.	–	+D	–	–	–	–	–	H
O. rufescens Fb.	–	–	–	–	–	–	–	P
O. humeralis Hv.	+	–	–	–	–	–	–	H(S?)
O. freyi Pt.	–	–	–	–	–	–	–	P
O. intermedius Hv.	–	+D	–	–	–	–	–	H (S)
O. armiger Kir.	–	–	–	–	–	–	+	ITu
Psacasta marmottani Pt.	+	+D	–	–	–	–	–	H (S)
Eurygaster maura (L.)	–	–	–	–	–	–	+	Eu
Tarisa camelus Rt.	–	–	–	–	+	–	+	Er
T. subspinosa (Gm.)	–	+	–	–	–	–	–	End
Ventocoris obtusum Hv.	–	+D	–	–	–	–	–	End
V. fischeri (H.S.)	+	+	–	–	–	–	+	H
V. falcatus (Cyr.)	+	–	–	–	–	–	+	H
V. obesus (Stål)	–	+	–	–	–	–	+	Er
V. martini (Hv.)	–	+D	–	–	+	–	–	Er
Putonia torrida Stål	+	+	–	–	–	–	–	Er
Leprosoma reticulatum (H.S.)	+	+D	–	–	–	–	–	Er
Sternodontus obtusus M.R.	–	–	–	–	–	–	–	H
Ancyrosoma leucogrammes (Gl.)	–	+	–	–	–	–	–	H
Tholagmus chobauti Pt.	–	–	–	–	+	–	–	Er
Graphosoma semipunctatum (F.)	+	–	–	–	–	–	–	H
G. lineatum (L.)	–	–	–	–	–	–	–	H
Scotinophara sicula (C.)	–	+D	–	–	+	–	–	H (S)
Phricodus aegyptiacus Izz.	–	–	–	–	+	–	–	End
Musiha morgani Hv.	–	–	–	–	+	–	+	Ir
Mecidea lindbergi E. Wgn.	–	+	–	–	–	–	–	Er
M. pallidissima J.H.	–	+	+	–	–	+	+	Er
Menaccarus dohrianus (M.R.)	+	+	–	–	–	–	+	H (S)
M. dissimilis Hv.	+	+D	–	–	–	–	–	End
Sciocoris conspurcatus K.	–	+	–	–	+	–	+	H (S)
S. pallens K.	+	–	–	–	–	–	–	End
S. angusticollis Pt.	–	–	+	–	+	–	–	Er
S. helferi Fb.	–	+	–	–	–	+	–	H
S. sahlbergi E. Wgn.	–	–	–	–	+	–	+	Er
Dyroderes umbraculatus (F.)	–	+D	–	–	–	–	–	H
Aelia punctiventris Hv.	–	+D	–	–	–	–	–	End
Eysarcoris inconspicuus (H.S.)	–	+	+	–	+	–	+	H
Carpocoris mediterraneus Tam.	+	–	–	–	–	–	+	H
C. pudicus (Pd.)	–	+D	–	–	–	–	–	H
Codophila varia (F.)	+	+D	–	–	–	–	–	H
C. maculicollis (Dl.)	+	+D	–	–	–	–	+	Er
C. varicornis (Jak.)	–	–	–	–	–	–	+	P
Dolycoris baccarum (L.)	–	–	–	–	–	–	+	HA
D. numidicus Hv.	+	–	+S	–	–	–	–	Er
Chroantha ornatula (H.S.)	+	+	+	+	–	–	–	H
Brachynema virens (K.)	–	+	+	–	–	+	+	H
B. venustulum Mtd.	+	–	–	–	–	–	–	H (S)
B. cinctum (F.)	+	+D	–	–	–	–	+	H
Eurydema ventrale Klt.	–	+D	–	–	–	–	–	H
E. ornatum (L.)	–	+	+	–	–	–	+	H
E. rugulosum (D.)	–	–	–	–	–	–	+	P
Stenozygum coloratum (K.)	–	–	–	–	+	–	+	P
Bagrada picta (F.)	–	+	+	–	+	–	–	Er
B. amoenula (Wk.)	–	+D	–	+	+	–	+	Er
Nezara viridula (L.)	–	+	+	–	–	–	–	Cos
Acrosternum millierei (M.R.)	+	+	+	–	+	–	+	H
A. heegeri (Fb.)	–	+D	+S	–	–	–	–	H
Piezodorus teretipes Stål	–	+U	–	–	–	+	–	Eth
Pausias leprieuri (Sgn.)	+	+	+	–	–	–	–	Er
Anchesmus rubriplaga (Wk.)	–	+D	–	–	–	–	–	Er
Andrallus spinidens (F.)	–	–	–	–	–	–	+	Itr(P)
Zicrona coerulea (L.)	+	–	–	–	–	–	–	HA
Coridius viduatus (F.)	+	+	+	–	–	–	+	Eth
Schyzops aegyptiaca (Lef.)	–	+	–	–	–	–	–	Eth
Phyllocephala albicornis Hv.	–	–	–	–	–	–	+	Er
Stenocephalidae								
Dicranocephalus setulosus (Fr.)	–	–	–	–	–	–	+	H
D. pallidus (Sgn.)	–	+	–	–	+	–	+	Er

	I	II	III	IV	V	VI	VII	Distr. type
Coreidae								
Haploprocta sulcicornis (F.)	+	+D	–	–	–	–	–	H
Centrocoris degener (Pt.)	–	+D	–	–	–	–	–	Er
C. variegatus Klt.	+	+D	–	–	–	–	–	H
Cercinthus lehmanni (Klt.)	+	+D	–	–	–	–	+	Er
Spathocera lobata (H.S.)	–	+D	–	–	–	–	–	H
Prionotylus brevicornis (M.)	–	+D	–	–	–	–	–	H
Phyllomorpha laciniata (Vill.)	+	+D	–	–	–	–	+	H
Arenocoris intermedius (Jak.)	+	+D	–	–	–	–	+	H
Bathysolen nubilus (Fn.)	–	–	–	–	–	–	–	H
Ceraleptus obtusus (Br.)	–	+	–	–	–	–	–	H
Microtelocerus testaceus Rt.	–	–	–	–	–	–	+	ITu
Loxocnemis dentator (F.)	–	+D	–	–	–	–	–	H
Coriomeris affinis (H.S.)	+	+D	–	–	–	–	–	H
Alydidae								
Sjoestedtina robusta Dist.	–	–	–	–	+	–	–	Eth
Camptopus lateralis (Gm.)	–	+D	–	–	–	–	–	H
Riptortus aegyptiacus Ldb.	–	+	–	–	–	–	–	Er
Nemausus simplex Hv.	–	+	+	–	–	–	–	Er
Nariscus cincti-ventris (Gm.)	–	+	+	–	+	–	–	Eth
Rhopalidae								
Corizus hyoscyami (L.)	–	+D	–	–	–	–	–	ES
Liorhyssus hyalinus (F.)	+	+	–	–	–	–	+	Cos
L. natalensis (Stål) v. *corallinus* Hv.	+	–	–	–	–	–	–	Eth, the var. End
Stictopleurus riveti Roy.	–	–	–	–	–	–	+	H
Maccevethus persicus Jak.	–	–	–	–	–	–	+	ITu
Agraphopus lethierryi Stål	+	–	+	–	–	–	–	H
A. pallens Schm.	–	+	–	–	–	–	+	Er
Leptoceraea femoralis (Hv.)	–	+D	–	–	+	–	–	H
Pyrrhocoridae								
Scantius aegyptius (L.)	+	+D	–	–	–	–	+	H
S. försteri (F.)	+	–	+	–	–	–	+	Eth
Lygaeidae								
Tropidothorax leucopterus (Gz.)	–	+D	–	–	–	–	–	H
Lygaeus longulus Dl.	+	+	–	–	–	–	+	Er
L. pandurus (Scop.)	+	+	+	–	+	–	+	Itr(P)
L. saxatilis (Scop.)	+	–	–	–	–	–	–	H
Cosmopleurus fulvipes (Dl.)	–	+	+	–	+	–	–	Er
Melanocoryphys syriacus Rt.	–	+D	–	–	–	–	–	H
M. sanctus Hv.	+	–	–	–	+	–	–	Er
M. tristrami (Dgl.Sc.)	–	–	–	–	–	–	+	P
Graptostethus servus (F.)	–	+D	–	–	–	–	–	Itr(P)
Melanotelus villosulus (Stål)	–	+	–	–	+	–	–	Eth
Stenaptula angusticollis (Ldb.)	–	–	–	–	+	–	–	Er
Lygaeosoma reticulatum (H.S.)	+	+D	–	–	+	–	–	H
Hormopleurus nysioides Hv.	–	+U	–	–	–	–	–	Er
Paranysius fallaciosus (Pt.)	–	+U	–	–	–	–	–	Er
Nysius cymoides (Spin.)	–	+	+	–	–	–	+	H
N. graminicola (Klt.)	+	+	–	–	+	–	–	H
N. aegyptiacus Prn.Alf.	–	+	–	–	–	–	–	Er
Camptocoris longicornis (Pt.)	–	+	+	–	–	–	+	Er
Cymus minutus Ldb.	–	+D	+	–	–	–	+	H (S)
Cymodema tabidum Spin	–	+D	–	–	–	–	–	H
Ischnodemus caspius Jak.	–	+D	–	–	–	–	–	P
Blissus hirtulus Bm.	+	+	+	–	–	–	–	H
Stenoblissus nubicus Wgn. & Slat.	–	+	–	–	–	–	–	Er
Henestaris curtulus Hv.	+	–	–	–	–	–	–	H
H. laticeps (Ct.)	+	–	–	–	–	–	–	H
H. thoracicus Schm.	+	–	–	–	–	–	–	End
Engistus boops (Df.)	+	–	+	+	–	–	–	H
E. exanguis Hv.	+	+	–	–	+	–	+	Er
Geocoris luridus (Fb.)	–	+	–	–	–	–	+	Er
G. nebulosus Mtd.	–	+	+	–	+	–	+	Er
G. confalonierii Bgv.	–	–	–	–	–	–	+	Er
G. scutellaris Pt.	+	+	–	–	+	–	+	Er
G. acuticeps Sgn.	–	+	–	–	–	–	–	Er
G. pallidipennis (C.)	–	+D	–	–	+	–	–	H
G. timidus Pt.	–	+D	–	–	+	–	+	Er
G. siculus (Fb.)	+	+	–	–	–	–	–	H
G. arenarius (Jak.)	–	+D	–	–	–	–	+	Cas
G. collaris Pt.	+	+D	–	–	–	–	+	Er
G. hisnidulus Pt.	–	+D	–	–	–	–	–	Er
G. nigriceps Rt.	–	+	+	–	+	–	+	Er
Mallocoris discifer Mtd.	–	+D	–	–	–	–	–	Er
Stenonhthalmicus fayoumensis C.	–	+D	–	–	–	–	–	Er
S. hirticornis Ldb.	–	+	–	–	–	–	–	Er
S. biskrensis Pt.	–	–	–	–	+	–	–	Er
S. panici Prn.	–	+	–	–	+	–	–	Er
Artheneis aegyptiaca Ldb.	–	+	+	–	–	–	–	Er
A. alutacea Fb.	–	+	+	–	+	–	+	H
Artheneida tenuicornis Kir.	–	–	–	+	–	–	–	ITu
Holcocranum karumense Bgv.	–	+D	–	–	–	–	–	Er
Heterogaster urticae (F.)?	+	+D	–	–	+	–	–	H
Cymophyes ochroleuca Fb.	+	+D	–	–	+	–	–	P
C. decolor Stål	–	+	–	–	–	–	–	Er
Macropternella inermis (Fb.)	–	+	–	–	–	–	–	H
Leptodemus bicolor Ldb.	–	+D	–	–	–	–	–	Er
L. minutus (Jak.)	–	+	+	–	+	–	+	Er
Microplax interrupta (Fb.)	–	+D	–	–	–	–	–	H
Bycanistellus naso Stål	+	–	–	–	–	–	–	Er
Oxycarenus hyalinipennis (C.)	–	+	–	–	–	–	+	H
O. pallens (H.S.) ssp. *luteolus* Hob.	–	+	–	–	+	–	–	H (S)
Auchenodes peyerimhoffi Ry.	–	–	–	–	–	–	+	End
Paromius leptopoides (Bar.)	–	+D	–	–	–	–	–	H
Remaudiereana annulipes (Bär.)	–	+	–	–	–	–	+	H
Marmottania simonis Pt.	+	+D	–	–	+	–	–	Er
M. priesneri E. Wgn.	–	–	–	–	–	–	+	End
Aegyptocoris myrmecoides Ch.	–	+D	–	–	–	–	–	End
Megalonotus praetextatus (H.S.)	–	+D	–	–	–	–	–	H
Tethallotrum brevicolle (Hv.)	–	–	–	–	–	–	+	Er
T. heteronotum (Pt.)	–	+	+	–	+	–	–	Er
Dakhla striipennis Lv.	–	–	+	–	–	–	–	End
Lamprodema maurum (F.)	+	+D	–	–	+	–	–	H

	I	II	III	IV	V	VI	VII	Distr. type
Plinthisus humilis Hv.	–	–	–	–	–	–	+	P
Stygnocoris breviceps E. Wgn.	+	–	–	–	–	–	–	P
Peritrechus meridionalis Pt.	–	+D	–	–	–	–	–	H
P. ambiguus Hv.	–	+D	–	–	–	–	–	H
Anepsiocoris encaustus (Pt.)	–	–	–	–	+	–	+	Er
Aellopus syriacus (Rt.)	–	–	–	–	–	–	+	H (S)
Aphanus rolandri (L.) ssp. *aethiops* (Dgl. Sc.)	–	+D	–	–	–	–	–	H
Rhyparochromus saturnius (R.)	–	+D	–	–	–	–	–	H
R. pallidicornis (Rt.)	–	–	–	+	–	–	+	End
Dieuches mucronatus (Stål)	–	+	–	–	–	–	+	Er
D. syriacus D.	–	+D	–	–	+	–	+	P
D. schmitzi Rt.	–	+D	–	–	–	–	–	Eth
D. armipes (F.)	–	+U	–	–	–	–	–	Eth
Ischnopeza pallipes Pt.	+	+D	–	–	–	–	–	P
Emblethis gracilicornis Pt.	–	+	+	–	+	–	–	Er
E. angustus Mtd.	–	+	+	–	–	–	–	H
E. ciliatus Hv.	+	+D	–	–	–	–	–	P
E. denticollis Hv.	–	+D	–	–	–	–	–	H
E. griseus (W.)	–	+D	–	–	–	–	–	HA
E. minutus Kir.	–	+D	–	–	–	–	–	Cas
E. pusillus Prn. Alf.	+	–	–	–	–	–	–	Er
Gonianotus barbarus Mtd.	–	+D	–	–	+	–	–	Er
Lethaeus fulvovarius Pt.	–	+D	–	–	–	–	–	Eth
L. lethierryi Pt.	+	+D	–	–	–	–	+	Er
Drymus assimilis Hv.	–	–	–	–	–	–	–	Er
Scolopostethus decoratus (H.) ?	–	–	–	–	–	–	–	Eu
Camptocera glaberrima (Wk.)	+	+	+	–	–	–	–	Er
Berytidae								
Berytinus hirticornis (Br.)	–	+D	–	–	–	–	–	H
B. brevicornis Hv.	–	+D	–	–	–	–	–	P
Triconulus aegyptius Hv.	–	+D	–	–	–	–	–	End
Piesmidae								
Piesma capitata (W.)	–	–	–	–	–	–	–	ES
Tingidae								
Cantacader quadricornis (P.S.) ssp. *nubilus* Hv.	–	+D	–	–	–	–	–	H
Galeatus scrophicus Sd.	+	+	+	–	–	–	+	H
Urentius aegyptius Bgv.	–	+U	–	–	–	–	–	Er
U. abutilinus Prn. Alf.	–	+U	–	–	–	–	–	Er
Elasmotropis testacea (H.S.)	+	–	–	–	–	–	–	P
Tingis rotundipennis Hv.	–	+	–	–	–	–	–	End
T. denudata Hv.	–	–	–	–	–	–	–	Er
T. lituratа (Fb.)	+	+D	–	–	–	–	–	H (S)
T. aegyptiaca Prn.	–	+D	–	–	+	–	–	End
Copium teucrii (Host)	+	–	–	–	–	–	–	H
Cysteochila zavattarii Mc.	–	–	–	–	–	–	+	Er
Physatochella dumetorum (H.S.)	–	–	–	–	–	–	–	H
Dictyla nassata (Pt.)	+	+D	–	–	–	–	–	H
D. putoni (Mtd.)	+	+D	–	–	–	–	–	H
D. platyoma (Fb.)	+	–	–	–	–	–	–	P
Monosteira lobulifera Rt.	–	+D	–	–	–	–	+	P
M. priesneri E. Wgn.	–	+	+	–	–	–	–	End
M. minutula Mtd.	–	+U	–	–	–	–	–	Er
M. cleopatra Hv.	–	+	+	–	–	–	–	Er
Agramma atricapilla (Spin.) ssp. *pallens* (Hv.)	–	+D	–	–	–	–		H,the ssp. Er
A. confluens sp. n.	–	+D	+	–	–	–	–	End
Sabestena alfierii Dr. & Ruh.	–		–	–	+	–	–	End
Joppeicidae								
Joppeicus paradoxus Pt.	–	+	–	–	–	–	–	Er
Reduviidae								
Empicoris soror (Pt.)	+	+D	–	–	–	–	–	Er
E. litoralis (Lv.)	+	–	–	–	–	–	–	End
E. mediterraneus Hob.	–	–	–	–	+	–	–	P
Stenolemus macrostylus Hv.	–	+D	–	–	–	–	–	End
S. laticeps Hv.	–	+	–	–	–	–	–	End
S. novaki Hv.	–	+D	–	–	+	–	–	H
Ploearia gutturalis Nh.	+	+D	–	–	+	–	–	Er
Tinna grassator (Pt.)	–	+D	+S	–	–	–	–	H (S)
Oneocephalus pilicornis (H.S.)	+	+D	–	–	–	–	–	H
O. obsoletus K.	+	+	+	–	–	–	–	Er
O. fasciatus Rt.	–	–	+S	–	–	–	–	Er
O. fokkeri Hv.	–	–	+S	–	–	–	–	Er
O. squalidus (R.)	–	+D	+	–	–	–	–	H
O. notatus K.	–	+D	–	–	–	–	–	Er
O. trochantericus Bg.	–	+D	–	–	–	–	–	Er
O. variegatus Rt.	+	–	–	–	–	–	–	Eth
Dasycnemus sahlbergi Bg.	–	+	–	–	+	–	–	Eth
Holotrichius innesi Hv.	–	+D	–	–	+	–	–	Er
H. luctuosus (M. My.)	+	–	–	–	–	–	–	H
Reduvius nigricans (K.)	–	–	–	–	–	–	–	Er
R. nebulosus (K.)	–	+U	–	–	–	–	–	Er
R. dorsalis Stål	+	+	–	–	–	–	–	Er
R. pallipes (K.)	+	+	+	+	–	–	–	Er
R. tabidus (K.)	+	–	–	–	–	–	+	Er
R. jakovlevi Rt.	+	+	+S	–	–	–	+	Er
R. ustulatus Mill.	–	–	–	–	–	–	+	End
R. minutus Rt.	–	+D	+	–	–	–	–	Er
Pseudoreduvius armipes (Rt.)	–	–	–	–	+	–	–	Er
Ectomocoris ululans (R.)	–	+	–	–	–	–	+	H
E. luridus (K.)	–	+	–	–	–	–	–	Er
E. fenestratus (K.)	–	–	+	–	–	–	–	Eth
Pirates chiragra (F.)	–	+	–	–	–	–	–	H
P. strepitans Rb.	–	+	–	–	–	–	–	H
Rhaphidosoma bergevini Pop.	+	–	–	–	+	–	–	Er
Vibertiola cinerea (Hv.)	–	+D	–	–	–	–	+	Er
Vachiria natolica Stål	–	+	+	–	+	–	–	H (S)
Paramphibolus pusillus Rt.	–	+D	+	–	–	–	+	Er
P. alfierii E. Wgn.	–	–	–	–	+	–	–	End
Amphibolus venator K.	–	+	–	–	–	–	–	Er
Rhinocoris bipustulatus (Fb.)	–	–	–	–	–	–	+	P
Coranus aegyptius (F.)	+	+D	+	–	+	–	–	H
C. angulatus Stål	–	+	+	–	+	–	+	Er
C. angulatus chanceli Bgv.	–	–	+	–	–	–	–	Er
C. tuberculifer Rt.	–	–	–	–	–	–	–	H
C. arenaceus Wk.	–	+	+	–	+	+	–	Er
C. niger (Rb.)	+	+D	–	–	–	–	–	H
Nagusta simoni Pt.	–	+D	–	–	–	–	–	Er
N. luberosa Stål	–	+	–	–	–	–	–	Er
Pachynomus picipes K.	–	+D	–	–	–	+	–	Er
Nabidae								
Prostemma septemguttata St.	–	+D	–	–	–	–	–	Eth
Phoriticus velutinus Pt.	–	+D	–	–	–	–	–	H (S)
Nabis sareptanus D.	+	+D	–	–	–	–	–	P
N. capsiformis Gm.	–	+	+	–	+	–	+	Cos
N. viridis Br.	+	+	–	–	–	–	+	H

	I	II	III	IV	V	VI	VII	Distr. type
Cimicidae								
Cimex lectularius L.	–	+	–	–	+	+	–	Cos
Cacodmus tunetanus Hv.	+	+D	–	–	–	–	–	Er
Stricticimex namru Us.	–	+D	–	–	–	–	–	End
Leptocimex duplicatus Us.	–	+D	–	–	–	–	–	End
Polyctenidae								
Eoctenes intermedius (Sp.)	–	–	–	–	–	–	–	Itr(P)
Anthocoridae								
Anthocoris gallarumulmi Deg.	–	+D	–	–	–	–	–	Eu
A. pemphigi E. Wgn.	–	+D	–	–	–	–	–	End
Montandoniola moraguesi (Pt.)	–	+D	–	–	–	–	–	H
Orius albidipennis (Rt.)	–	+	+	–	+	–	+	Er
O. laevigatus (Fb.) ssp. *inaequalis* E. Wgn.	+	+	–	–	–	–	–	H (S)
O. niger W.ssp. *aegyptiacus* E. Wgn.	–	+	–	–	–	–	–	H (S)
O. pallidicornis (Rt.)	–	+S	–	–	–	–	–	H
Lyctocoris campestris (F.)	–	+D	–	–	–	–	–	HA
Xylocoris flavipes (Rt.)	–	+	–	–	–	–	–	Eth
X. galactinus (Fb.)	–	+D	+S	–	–	–	–	Cos
X. afer (Rt.)	–	+	–	–	–	–	–	Er
X. heluanensis E. Wgn.	–	+D	–	–	–	–	–	End
Cardiastethus fasciiventris (Gbg.)	–	–	–	–	+	–	–	H
C. pseudococci E. Wgn.	–	+	–	–	–	–	–	Itr(P)
C. nazarenus Rt. ?	–	+D		–	–	–	–	H
Dufouriellus ater (Df.)	+	+D	–	–	–	–	–	HA
Dokkiocoris bicolor Mill.	–	+	–	–	–	–	–	Er
Microphysidae								
Loricula basalis (Rt.)	–	–	–	–	–	–	+	Er
Miridae								
Termatophylum insigne Rt.	–	+	–		–	–	–	Eth
Argyrotelaenus elegans Rt.	–	+	–			–	–	Eth
A. simoni Rt. Pop.	–	+	+	–	–	–	–	Eth
Phytocoris desertorum Rt.	–	–	–	–	+	–	–	Er
Ischnoscelicoris rubrinervis (Rt.)	+	–	–	–	–	–	–	Er
Creontiades pallidus (Rb.)	–	+	+	–	+	–	+	Er
C. caucasicus Pop.	–	+D	–	–	–	–	–	Er
Megacoelum sordidum Rt.	–	+D	–	–	+	–	–	End
Adelphocoris annulicornis (F.Sb.) ssp. *innotatus* Rt.	+	–	–	–	–	–	–	ES
Calocoris instabilis Fb.	+	–	–	–	–	–	–	H
C. porphyropterus Rt.	+	–	–	–	–	–	–	H (S)
C. norvegicus (Gml.)	+	–	–	–	–	–	–	H
Eurystylus bellevoyei (Rt.)	–	+	+	+	+	–	+	Eth
Lygus conspurcatus Rt.	–	+D	–	–	–	–	–	H (S)
L. pallidulus (Blanch.)	+	+	+	–	+	–	+	Cos
L. fuscus Rt.	–	+U	–	–	–	–	–	End
L. italicus E. Wgn. ssp. *israelensis* Lv.	+	+D	–	–	–	+	+	Er
Cyphodema berkanense E. Wgn.	–	–	–	–	–	–	+	Er
Deraeocoris martini (Pt.)	–	+D	–	–	–	–	+	Er

	I	II	III	IV	V	VI	VII	Distr. type
D. addendus Lv.	–	+D	–		+	–	–	Er
D. sinuaticollis (Rt.)	–	+	–	–	–	–	–	Er
D. serenus (Dgl.Sc.)	+	+D	+	–	–	–	–	H
Platycapsus acaciae Rt.	+	+	+	–	–	–	+	Er
Capsodes lineolatus (Br.)	+	–	–	–	–	–	–	H
C. infuscatus (Br.)	–	–	–	–	–	–	–	P
Trigonotylus pallidicornis Rt.	–	+	–	–	–	–	–	Er
T. ruficornis (G.)	–	–	–	–	–	–	+	H
Macrolophus costalis Fb.	–	–	–	–	–	–	+	H
Cyrtopeltis tenuis (Rt.)	–	+	–	–	–	–	+	Itr(P)
C. pygmaea E. Wgn.	–	+D	+	–	+	–	+	Er
C. sedilloti (Pt.)	+	–	–	–	–	–	–	H (S)
Hallocapus costai (Rt.)	–	+	+	–	–	–	–	Er
Omphalonotus anomphalus Rt.		–	–	–	–	–	–	End
Laemocoris reuteri Jak.	+	–	–	–	–	–	–	Er
L. facetus Hv.	+	–	–	–	–		–	End
L. dispar Schm.	–	–	–	–	+	–	–	End
Paralaemocoris strigifrons (Rt.)	–	–	–	–	+	–	–	Er
Glaphyrocoris lunigera (Hv.)	–	–	+S	–	–	–	–	Er
Systellonotus thymi Sgn.	+	–	–	–	–	–	–	H
Orthotylus fieberi F.G.	+	–	–	–	–	–	–	P
O. priesneri Schm.	–	+	+	–	–	–	–	Er
O. hirtulus E. Wgn.	–	+D	–	–	+	–	–	End
O. retamae E. Wgn.	–	–	–	–	+	–	–	End
O. haloxyloni E. Wgn.	–	–	–	–	+	–	–	Er
O. minutus Jak.	–	+D	–	–	–	–	–	P
O. pusillus Rt.	–	+D	+S	–	+	–	–	Er
Zanchius breviceps (E. Wgn.)	–	+	–	–	–	–	–	End
Platycranus putoni Rt.	–	–	–	–	+	–	–	Er
Nasocoris albipennis Ldb.	–	–	–	–	–	–	+	Er
Stenoparia putoni Fb.	+	–	–	–	–	–	–	H
Conostethus venustus (Fb.)	+	–	–	–	–	–	–	H
Hadrophyes decipiens sp. n.	–	–	–	+	–	–	–	End
Eurycolpus dimorphus E. Wgn.	+	–	–	–	–	–	–	End
Malthacosoma halimocnemis (Bck.)	–	+D	–	–	+	–	–	ITu
Megalocoleus chrysotrichus (Fb.)	–	–	+S	–	–	–	–	P
Macrotylus atricapillus (Sc.)	–	–	–	–	–	–	+	H
Camptotylus yersini (M.R.)	–	+	–	–	–	–	–	H
Ectagela guttata Schm.	–	+	–	–	–	–	–	Er
Tytthus parviceps (Rt.)	–	+	–	–	–	–	–	Itr
Psallus adspersus Schm.	–	+D	–	–	+	–	–	End
P. deserticola E. Wgn.	–	+D	–	–	+	–	–	End
P. sinaiticus Lv.	–	–	–	–	–	–	+	End
P. balachowskyi E. Wgn.	–	–	–	–	–	+	+	Er
Yotvata acacicola (Lv.)	–	+U	–	–	–	–	–	Er
Atomoscelis signaticornis Rt.	–	+	–	–	–	–	+	Er
A. tomentosus Rt.	–	+D	–	–	+	–	–	Er
Brachycranella fokkeri (Rt.)	+	+D	–	–	–	–	–	End
Campylomma nicolasi Pt.Rt.	+	–	–	–	–	–	–	WM
C. impicta E. Wgn.	–	+	+	–	+	–	–	Er
C. zizyphi Rt.	–	+D	–	–	–	–	–	Er
C. diversicornis Rt.	–	–	+S	–	–	–	–	P
C. annulicornis (Sgn.)	–	–	+S	–	–	–	–	H
C. verticata E. Wgn.	–	–	–	+	–	–	–	End
C. angustula Rt.	–	+D	+S	–	–	–	–	End

	I	II	III	IV	V	VI	VII	Distr. type
Paramixia suturalis Rt.	–	+D	–	+	+	–	–	Er
Maurodactylus nigrigenis (Rt.)	–	–	–	–	+	–	–	Er
Auchenocrepis albosctellata Pt.	+	+	+	+	–	–	–	Er
Tuponia lethierryi Rt.	–	+	+	–	–	–	–	WM (S)
ssp. *vulnerata* Lv.	–	+	–	+	–	–	–	P (S)
T. pallida Rt.	–	–	+S	–	–	–	–	ITu
T. tamaricicola Ldb.	–	+	+	–	–	–	–	Er
T. brevirostris Rt.	+	+D	–	–	–	–	–	H
T. hippophaes (Fb.)	–	–	+S	–	–	–	–	H
T. longipennis Hv. ssp. *guttata* E. Wgn.	+	+	+	–	–	–	–	Er
T. concinnoides Lv.	+	+D	–	+	–	–	–	Er
T. richteri E. Wgn.	+	+	–	–	–	–	–	Er
T. concinna Rt.	–	+	+	+	–	–	+	Er
T. minutissima Lv.	–	–	–	+	–	–	–	Er
T. minima E. Wgn.	–	–	+	–	–	–	–	Er
Eurycranella geocoriceps Rt.	–	+	+	–	–	–	–	Er
Mesoveliadae								
Mesovelia vittigera Hv.	–	+	+	–	–	–	–	Eth
Hebridae								
Hebrus montanus Klt.	–	–	–	–	–	–	–	H
H. pusillus (Fn.)	–	+D	–	–	–	–	–	Eu
H. jeanneli Ps.	–	–	–	–	–	–	+	Eth
Hydrometridae								
Hydrometra aegyptia Hf.Ev.	–	+	+	–	–	–	–	Eth
Gerridae								
Gerris brevirostris Bg.	–	–	–	–	–	–	+	Er
Limnogonus cereiventris (Sgn.) ssp. *leptocerus* (Rt.)	–	+	–	–	–	–	+	Eth
Naboandelus bergevini Bg.	–	+	–	–	–	–	–	Eth
Veliadae								
Rhagovelia nigricans (Bm.)	–	+	+	–	–	–	–	Eth
Microvelia waelbrocki Kk.	–	+D	–	–	–	–	–	Eth
M. pygmaea (Df.)	–	+D	–	–	–	–	–	H
M. priesneri Hob.	+	–	–	–	–	–	–	End
Leptopodidae								
Patapius spinosus (R.)	–	+D	–	–	–	–	–	H
P. sentus Dr.Hob.	–	+	–	–	+	–	–	Er
Valleriola assouanensis C.	–	+	–	–	–	–	–	Er
Saldidae								
Saldula ornatula (Rt.)	+	+	–	–	–	–	–	Itr(P)
S. palustris (Dgl.) f. *mutabilis* (Rt.)	–	+D	–	–	–	–	–	H
ssp. *pallidipennis* (Rt.)	–	+D	+S	–	–	–	–	H (S)
S. pallipes (F.)	+	+	+	–	–	–	–	H
S. arenicola (Sch.)	–	–	–	–	–	–	+	H
Chartoscirta cincta (H.S.)	–	+D	–	–	–	–	–	ES
Omania coleoptrata Hv.	–	–	–	+	–	–	–	Eth
Ochteridae								
Ochterus marginatus (Lt.)	+	–	–	–	–	–	–	H
Gelastocoridae								
Nertha rugosa (Desj.)	–	–	–	+		–	–	Itr
Naucoridae								
Heleocoris minusculus Wk.	–	–	–	–	–	–	+	Er
Macrocoris flavicollis Sgn.	–	+D	–	–	–	–	–	Eth

	I	II	III	IV	V	VI	VII	Distr. type
Belostomatidae								
Belostoma cordofanum (M.)	–	+	–	–	–	–	–	Eth
Hydrocyrius columbiae Spin.	–	+D	–	–	–	–	–	Eth
Limnogeton fieberi M.	–	+	–	–	–	–	–	Eth
Sphaerodema urinator (Df.)	–	+	–	–	–	–	+	Eth
Nepidae								
Laccotrephes fabricii Stål	–	–	–	–	+	–	+	Eth
Ranatridae								
Ranatra vicina Sgn.	–	+	–	–	–	–	–	Eth
R. longipes Stål	–	–	–	–	–	–	–	Er
Notonectidae								
Anisops sardea H.S.	+	+	+	–	–	–	+	Eth (Er?)
A. debilis Gst. ssp. *perplexa* Ps.	–	–	+	–	–	–	–	Er
A. varia Fb.	+	+	–	–	–	–	+	Eth
Enithares rhodopis Hc.	–	–	+	–	–	–	–	Eth
Notonecta marmorea F. ssp. *viridis* Dc.	–	+D	–	–	–	–	–	H
N. maculata F.	–	+D	–	–	–	–	–	H
N. glauca L.	–	+D	–	–	–	–	–	ES
Pleidae								
Plea atomaria (Pal.)	–	+D	–	–	–	–	–	H
P. pullula (Stål)	–	+	–	–	–	–	–	Eth
Corixidae								
Micronecta plicata (C.)	–	+	–	–	–	–	–	End
M. scutellaris (Stål)	–	+	–	–	–	–	–	Eth
M. isis Hv.	–	+	–	–	–	–	–	Eth
Corixa affinis Lch.	–	+D	–	–	–	–	–	H
C. platycnemis (Fb.)	–	–	–	–	–	–	–	End
Heliocorisa vermiculata (Pt.)	–	–	+S	–	–	–	–	H (S)
Sigara lateralis (Lch.)	–	+	+		–	–	+	H
S. mayri Fb.	–	+D	–	–	+	–	–	P
S. selecta Fb.	–	+D	+S	–	–	–	–	H
S. sexlineata Rt.	–	+D	–	–	–	–	–	Eth
S. hoggarica Ps.	–	–	+	–	+	–	–	Er
Cicadidae								
Adeniana longiceps (Pt.)	–	–	–	–	–	–	–	Er
Cicada cerisyi (Guér.)	–	–	–	–	–	–	–	End
Cicadatra flavicollis Hv.	–	+	–	–	–	–	–	Er
Cicadetta musiva (Germ.)	–	–	–	+	–	–	–	Er
Cercopidae								
Philaenus impictifrons Hv.	–	–	–	–	–	–	–	SA
Membracidae								
Oxyrrhachis furva Cpn.	–	+D	–	–	–	–	–	Er
O. caligula Cpn.	–	+	–	–	+	–	–	Er
O. egyptiana Dist.	–	–	–	–	+	–	–	End
O. versicolor Dist.	–	–	–	+	–	–	–	Er
O. capeneri Izz.	–	–	–	–	–	–	+	Er
Centrotus israelensis Lv.	–	–	–	–	+	–	–	Er
C. nervosus Motsch.	–	–	–	–	–	–	–	End
Cicadellidae								
Macrosteles sexnotatus (Fn.)	–	+D	–	–	–	–	–	H
Cicadulina bipunctella (Mats.)	+	+	+	–		–	–	Itr
Pteropyx hyalinus Hpt.	–	+U	–	–	–	–	–	Er
Cicadulella pallida (Hpt.)	–	+D	–	–	–	–	–	Er
Balclutha rufofasciata (Mer.)	–	+D	–	–	–	–	–	Itr

	I	II	III	IV	V	VI	VII	Distr. type
B. saltuella (Kbm.)	–	+D	–	–	–	–	–	Cos
B. hebe (Kk.)	–	+	–	–	+	–	–	Cos
Stirellus instabilis (Rib.)	–	+D	+	–	–	–	–	P
S. luxorensis (Lv.)	–	+U	–	–	–	–	–	Er
Nephotettix apicalis (Motsch.)	–	+	–	–	–	–	–	Itr(P)
Exitianus capicola (Stål	–	+	–	–	+	–	–	Cos
E. fasciolatus (Mel.)	–	–	–	–	+	–	–	Eth
Nesophrosyne filigranus (Hpt.)	–	+	+	–	+	–	–	Er
Neoaliturus tenellus (Bak.)	+	+	+	–	+	–	–	Cos
N. fenestratus (H.S.)	–	+D	–	–	–	–	–	H
Opsius lethierryi W. Wgn.	+	+D	–	+	–	–	–	H
O. scutellaris (Leth.)	–	+D	+	+		–	–	Er
O. pallasi (Leth.)	+	–	+	+	–	–	+	Er
O. jucundus (Leth.)	–	–	+S	–	–	–	–	Er
Neolimnus aegyptiacus (Mats.)	–	+	–	–	–	–	–	Er
Paralimnus subtilis Lv.	–	+D	–	–	–	–	–	End
Grammacephalus turneri (Ev.)	–	+	+	–	–	–	–	Eth
Psammotettix adriaticus W. Wgn. ssp. *linnavuorii* W. Wgn.	+	–	–	–	–	–	–	P (S)
P. majusculus Lv.	–	–	–	–	+	–	–	SA
P. alienus (Dlb.)	–	+	+	–	–	–	–	ES
Dellocephalus schmidtgeni W. Wgn.	–	+	–	–	–	–	–	H
Jubrinia distincta Lv.	–	+D	–	–	–	–	–	Er
Mocuellus niloticus Lv.	–	+	–	–	–	–	–	End
Aconura amitina (Mel.)	–	+D	+	–	–	–	–	Er
Aconurella prolixa (Leth.)	+	+	–	–	+	–	–	Er
Chiasmus conspurcatus (Perr.)	–	–	+	–	–	–	–	H
Goniagnathus gutulinervis (Kbm.)	–	+	–	–	–	–	–	H
G. palliatus (Leth.)	–	+D	+	–	–	–	+	Er
Hecalus glaucescens (Fb.)	–	+	+	–	–	–	–	H
Bordesia mitrata Bgv.	–	+D	–	–	–	–	–	Er
Paradorydium desertorum Lv.	–	–	–	–	+	–	–	End
Agallia laevis Rib.	+	–	–	–	–	–	–	H
A. halophila Ldb.	–	+U	+	–	–	–	–	Er
Austroagallia dentata (Ldb.)	+	–	–	–	–	–	–	Er
A. quadricornis (Lv.)	–	–	–	–	–	–	+	Er
Batrachomorphus signatus Ldb.	–	+	+	–	–	–	–	Er
Empoasca decedens Pl.	–	+U	–	–	–	–	–	H
E. decipiens Pl. ssp. *meridiana* Zachv.	–	+	–	–	+	–	–	H
E. distinguenda Pl.	–	+U	–	–	–	–	–	Eth
E. lybica Bgv.	–	+U	–	–	–	–	–	Eth
Chlorita eremophila Lv.	–	–	–	–	–	+	–	Er
C. albida Lv.	–	–	–	–	–	–	+	Er
Eupteryx cypria (Rib.)	–	+D	–	–	–	–	–	SA
Heliona adspersa Hpt.	–	+U	–	–	–	–	–	Er
Helionidia longifalx (Lv.)	–	+U	–	–	–	–	–	Er
H. tamaricis (Pt.)	+	+	+	–	–	–	–	H
H. fasciolata (Leth.)	–	–	–	+	–	–	+	Er

	I	II	III	IV	V	VI	VII	Distr. type
Erythroneura alexandrina Lv.	+	–	–	–	–	–	–	End
E. ? serpentina Mats.	+	–	–	–	–	–	–	H(S?
E. capreola Lv.	–	–	–	–	–	–	+	Er
E. acaciae Lv.	–	+U	–	–	–	–	–	Er
E. improvisa Lv.	–	+U	–	–	–	–	–	Er
Dictyopharidae								
Dorysarthrus alfierii Bgv.	–	–	–	–	+	–	–	Er
Dictyophara striata Osh.	–	+D	–	–	–	–	–	Er
Tigrahauda recurviceps Lv.	–	–	–	–	–	–	+	Er
Cixiidae								
Oliarus frontalis Mel.	–	+	+	–	–	–	–	Eth
O. beduinus Lv.	–	–	–	–	–	–	+	End
O. pallens (Germ.)	+	+	+	+	–	–	–	P
O. obscurus (Sgn.)	–	+D	–	–	–	–	–	H
Pseudoliarus fuscofasciatus (Mel.) ssp. *aegyptiacus* W. Wgn.	–	–	+S	–	–	–	–	Er
Epoliarus politus Mats.	+	–	–	–	–	–	–	End
Hemitropis seticulosa (Leth.)	–	+D	+S	+	–	–	–	Er
Moysella sinaitica Hv.	–	–	–	–	–	–	+	Er
Delphacidae								
Pseudaraeopus bolivari (Mel.)	–	+D	–	–	–	–	–	H (S)
Perkinsiella rivularis Lv.	–	+U	–	–	–	–	–	Er
Nephropsia tuberipennis M.R.	–	+D	+	–	+	–	–	H
Leptodelphax cyclops Hpt.	+	–	–	–	–	–	–	P (S)
Chloriona flaveola Ldb.	+	+D	–	–	–	–	–	H (S)
Calligypona suezensis (Mats.)	+	+	+	–	–	–	–	H
C. catoptron Fenn.	–	+D	+S	–	–	–	–	Er ?
C. petax Fenn.	–	+D	+S	–	–	–	–	Er
C. hispidula Ldb.	–	+U	–	–	–	–	–	Er
C. sporoboli Ldb.	–	+U	–	–	–	–	–	Er
C. typhae Ldb.	–	+	–	–	–	–	–	Er
C. propinqua (Fb.)	–	+	+	–	+	–	–	H
C. minuscula (Hv.)	+	–	–	–	–	–	–	H
C. isis Lv.	–	+U	–	–	–	–	–	End
C. bella Lv.	–	+D	–	–	–	–	–	Er
Meenoplidae								
Nisia atrovenosa (Leth.)	–	+D	–	–	–	–	–	Itr(P)
Issidae								
Asarcopus palmarum Hv.	–	+D	–	–	–	–	–	Er
Perissana circularis (Lv.)	–	–	–	–	–	–	+	Er
Hysteropterum deserticola Lv.	–	–	–	–	+	–	–	Er
Ricaniidae								
Ricania hedenborgi Stål	–	–	–	–	–	–	–	P
Flatidae								
Phantia indicatrix Wk.	–	–	+	–	+	–	–	Er
Rhinophantia longiceps (Pt.)	–	–	–	–	–	+	–	Er
Derisa pallida Fenn.	–	–	+	+	–	–	–	Er

which were visited. The oases are partly below sea level. Even here the original vegetation has been more or less destroyed, but fringes of it are to be found at the border of the desert. *Acacia arabica nilotica*, *Zizyphus spina-Christi* and *Tamarix* are the only trees, together with the cultivated *Phoenix dactylifera*. Otherwise the flora consists of the halfagrass, *Citrullus colocynthis*, *Pulicaria*, *Zygophyllum* and other desert plants.

4. The Red Sea coast

The narrow coastal plain along the Red Sea belongs mainly to the Eastern Desert, although it is somewhat more humid than the other parts of the desert. In column IV (Tables 2 and 3) only the species of the littoral zone have been listed. This zone is usually sterile gravel. In patches, especially on the coast of the Bay of Suez, there occur *Tamarix* bushes, halophytic Chenopodiaceae, *Juncus*, etc. (the studied area near Sokhna). In the south the northernmost mangrove (*Avicennia marina*) thickets in the world deserve mention. In many places there are also coral reefs bordering the coast. The lagoons formed by them have a peculiar fish fauna, but the curious Hemipterous species *Omania coleoptrata* is also confined to them.

5. The Eastern Desert

The desert east of the Nile is only partly flat. Especially along the Red Sea there occur mountain ranges (the highest mountains are Gebel Shaib 2 181 m, and Gebel Hamata, 1 978 m) – a continuation of the mountain area of Ethiopia, but mountains are also to be found elsewhere, e.g. Mt. Mokattam near Cairo. The mountain ranges are dissected by several wadis. An area along the Cairo – Suez desert road was studied. The prevailing soil formation there is the gravel desert, dissected in some places by small sand-lined water runnels. The greater part of the year is rainless; only scanty winter rains occur, the lower levels (in relation to local topography) receiving more water than the higher levels. The vegetation has been thoroughly studied by Kassas & Imam (1959). The most important plants are *Haloxylon salicornicum*, *Panicum turgidum* and *Retama raetam* and in places *Artemisia monosperma*. In addition, such species as *Lasiurus hirsutus*, *Aristida plumosa*, *Centaurea aegyptiaca*, *Convolvulus lanatus*, *Pityranthus tortuosus*, *Mesembryanthemum forskålei* and *Zilla spinosa* are to be found. The vegetation is especially concentrated in sandy places near the water runnels.

Near to the Red Sea there occurs *Acacia raddiana*, which is especially abundant in the coastal plain and the wadis. Farther southwards the vegetation becomes increasingly sparse, existing apart from the coastal belt only in the wadis, where a different low scrub is to be found.

6. The Western Desert

West of the Nile. Flat; only isolated, low hilly areas exist. The soil is often composed of dune sand, gravels or hamada. The climate is extremely arid. The very sparse vegetation occurs only on the border of the Nile Valley and near the oases, as mentioned before. Otherwise the desert is completely sterile, especially in the southern parts.

7. Sinai

Sinai in many ways resembles the neighbouring areas of the Arabian Peninsula. The plateau is broken by numerous mountains (Gebel el Tih, Gebel Serbal 2 060 m, Gebel Catherine 2 642 m, etc.). These areas are dissected by wadis, such as Wadi Feiran. The soil is usually gravelly (at least in the areas visited), and in some places also sandy. The climate is eremian, although – being surrounded by the sea – relatively humid, especially near the coasts. Otherwise the climate has affinities with the S.W. Asian steppe areas. The summits of the high mountains have stormy winters with some snow.

The vegetation, which is mainly concentrated in the wadis, is steppe-like. Of the trees and bushes *Acacia raddiana*, *Phoenix dactylifera* (in the oases), *Tamarix*, *Capparis*, *Ephedra alata*, *Haloxylon salicornicum* and *Retama raetam* could be mentioned. In the inner parts (e.g. near the Monastery of St. Catherine) *Artemisia* steppes (*A. herba-alba*, *A. judaica*) were studied. It is to be noted that Sinai has several plant and insect species that do not occur in other parts of Egypt, but are found in the neighbouring areas to the east.

8. Some geological data of Egypt

According to Ball (1939), in the Middle Pliocene, i.e. about 4 000 000 years ago, the

Nile Valley was a marine estuary extending almost as far south as the Tropic, and the Mediterranean Sea communicated freely with the Indian Ocean through the Straits of Suez and Bab-el-Mandeb. The sea-level was relatively 55 m higher in Egypt when the local mid-Pliocene subsidence was greatest. Thereafter the land gradually rose again, until, about 100 000 years B.C., the Isthmus of Suez emerged, uniting Africa once more to Asia. At that time, moreover, owing to the advance of the Nile Delta, the north coast of Egypt was approximately where it is now. A slight subsidence followed, but was approximately compensated by the delta's copious slit, so that sea never came within 80 km of Cairo (50 000 – 20 000 B.C.).

The last pluvial period seems to have been about 50 000 B.C., in early or middle Palaeolithic times. In the late Palaeolithic time, the climate became much drier. The desiccation has continued and the present climate has thus formed.

WILTSHIRE (1949, p. 438 – 439) has made some interesting speculations concerning the past vegetation conditions in Egypt, which also elucidate the present biogeographical problems of that country. During the last pluvial period, 50 000 B.C., before the climate became arid, the rains were probably at first enough to permit park woodland and jungle along the Mediterranean shores and on both sides of the Nile. The trees would have been either temperate or tropical, depending on whether the rainfall was distributed all the year round or seasonal. Presuming that it was seasonal, a woodland transitional between Mediterranean scrub-wood and Sudanian parkland types must have occupied most of Egypt, the former strongest in the north, the latter in the south, with an intermixture of both over a wide area. The following species of tree would probably then have been found in Egypt with their attendant insect faunas: (Mediterranean) *Cupressus horizontalis*, *Juniperus oxycedrus* and *J. phoeniceus*, *Pinus halepensis*, *Ceratonia siliqua*, *Pistacia lentiscus* and *P. terebinthus*, *Myrtus communis*, *Laurus nobilis*, *Olea europaea*, *Crataegus azarola* (some of them are still to be found in Cyranaica and all of them occur in Palestine and Syria), (Tropical) *Balanites aegyptiaca*, *Euphorbia* spp., etc. As the rainfall diminished (ca. 50 000 – 40 000 B.C.), the trees must have retreated, some to the valley bottoms where the subsoil was humid, others to the remote hill-tops, which still caught the rain; steppe or savannah grasslands would have become more widespread; finally these in turn would also have retreated (30 000 – 20 000 B.C.), the former northwards to the coastal plain and to Sinai, the latter southwards to Jebel Elba, leaving the vast parched deserts of the centre.

IV. Survey of the biogeographical elements of Egypt

The biogeographical composition of the Hemipterous fauna of Egypt is shown in Table 3, in which a comparison with Israel has also been made on the basis of my recent investigations in that country LINNAVUORI (1960, 1962 and 1963). As a general feature a remarkable poverty as compared with Israel is obvious. From Israel (18 000 km²) 943 Hemiptera species or forms are known, from Egypt (1 000 000 km²) 572, a fact certainly due to the generally unfavourable living conditions for insects in that country. The richest area is the Nile Valley, together with the Coastal Belt and Sinai. The poorest area is the often absolutely sterile Western Desert, where life is to be found only at the borders of the Nile Valley and the oases. A considerable difference in this respect thus prevails between the Western and the Eastern Deserts. It is also to be noted that there are numerous species occurring only in Sinai and in the Eastern Desert, but not in the Nile Valley or west of it, a fact also mentioned by WILTSHIRE in his treatise on Lepidoptera (1949, p. 435 – 439).

1. The Mediterranean element

34.8 % of the Egyptian Hemipterous fauna belongs to the Mediterranean element. The percentage is considerably lower than in Israel (41.6 %). The element was certainly much richer and more widespread during the last pluvial period, but during the desiccation phase the species, together with the corresponding plants, had to retreat to the more favourable Cyrenaica and Palestine areas outside Egypt. At present the main part of the element in Egypt is to be found in the Coastal Belt, in the Nile Region and Sinai, and to a lesser extent also in the

Table 3. The faunal elements of Egypt.

Region		Total number of species	European	Euro-Siberian	Holarctic	Holomediterranean	West-Mediterranean	Pontomediterranean	Caspian	Syrio-Anatolian	Iranian	Irano-Turanian	Eremian	Endemics	Ethiopian	Cosmopolitan	Intertropical	Indian
I	spp.	141	–	1	4	63	1	12	–	–	–	–	38	11	5	3	3	–
	%		–	0.7	2.8	44.6	0.7	8.6	–	–	–	–	26.9	7.8	3.5	2.2	2.2	–
II	spp.	379	2	6	3	119	1	14	2	1	–	1	145	29	36	10	10	–
	%		0.5	1.6	0.8	31.4	0.3	3.7	0.5	0.3	–	0.3	38.3	7.6	9.5	2.6	2.6	–
III	spp.	125	–	1	1	36	1	3	–	–	–	1	57	4	13	5	3	–
	%		–	0.8	0.8	28.9	0.8	2.4	–	–	–	0.8	46.5	3.2	10.4	4.0	2.4	–
IV	spp.	27	–	–	–	3	–	2	–	–	–	1	15	3	2	–	1	–
	%		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
V	spp.	112	–	–	–	20	–	6	–	1	1	1	55	13	7	6	2	–
	%		–	–	–	17.9	–	5.4	–	0.9	0.9	0.9	48.9	11.6	6.3	5.4	1.8	–
VI	spp.	13	–	–	–	3	–	–	–	–	–	–	8	–	1	1	–	–
	%		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
VII	spp.	132	1	–	3	34	–	9	1	–	1	3	59	7	9	2	3	–
	%		0.8	–	2.4	25.8	–	6.8	0.8	–	0.8	2.4	44.2	5.2	6.8	1.6	2.4	–
Egypt, total		572	4	8	9	162	3	35	2	3	1	6	213	57	46	10	13	–
	%		0.7	1.4	1.6	28.3	0.5	6.1	0.4	0.5	0.2	1.1	37.3	9.9	8.0	1.8	2.2	–
Mediterranean, %							34.8											
Israel, total		943	19	52	15	273	–	119	12	57	8	21	143	163	38	11	11	2
	%		2.0	5.5	1.6	29.0	–	12.6	1.3	6.0	0.8	2.2	15.1	17.2	4.0	1.2	1.2	0.2
Mediterranean, %							41.6											

Eastern Desert. In the Nile Region the element has been able to spread all over the Delta and to the Nile Valley to the level of Cairo-Fayoum, but usually not farther towards the south, where apparently the climatological conditions together with the narrowing of the valley form a hindrance for them. Of the oases, Siwa is more Mediterranean in nature than the others, as already pointed out by PRIESNER & ALFIERI (*op. cit.*, p. 2).

Most of the species of this element are Holomediterranean, often with a more or less southern distribution, having found suitable biotopes in the steppes, halophytic formations and swamps of northern Egypt; by contrast, the Pontomediterranean species adapted to more specialized climatological or edaphic conditions have found greater difficulty in spreading, since only 6.1 % of the fauna is formed by them (12.6 % in Israel). Many Pontomediterranean species occur only east of the Nile Valley. The proportion of West-Mediterranean species is very low, indicating the difficulty of crossing the large Libyan Desert from the west.

2. The northern elements

The percentage of the northern elements (European, Euro-Siberian and Holarctic) is naturally low in Egypt (3.7 %). Even in Israel, which definitely affords much better conditions for the northern species, only 10.1 % of the fauna is composed of them, most species occurring only in the northern parts of the country. In Egypt their range is restricted to the north.

3. The eastern elements

Likewise the proportion of Caspian, Iranian and Irano-Turanian elements is small (2.2 %) in the Egyptian fauna (10.4 % in Israel). The species of this group live on maquis and are thus more or less adapted to arid conditions. Presumably their range in Egypt was larger in the past during the phase of the desiccation period, when steppes prevailed in the country. Nowadays only the maquis areas, especially in Sinai, but also in the Eastern Desert and in places on the Coastal Belt, provide favourable habitats for them, but the large desert areas in Syria, Iraq, Palestine and Arabia seem to form an effective barrier to their distribution southwards at present. I have already pointed out above that relatively numerous species of this and other elements occur only in Sinai and in the Eastern Desert. WILTSHIRE (*op. cit.*, pp. 436 – 437) has found the same in the Lepidoptera and emphasized the effect of the Nile Region as an ecological barrier both in the past, when large parts of the country were submerged in the region, and nowadays

owing to its different vegetation, greater humidity, dense human population and intense cultivation, together with the salt mud-flats and marine lagoons on the north delta coast and the extreme desert conditions in the south. This is apparently partly the case also with the Hemiptera, although I consider the most important factor to be the climatic (and topographical) differences between the eastern and western parts of the country.

4. The Eremian element

The main part of the Egyptian Hemipterous fauna (37.3 %) is Eremian (15.1 % in Israel). The Eremian species often have a wide range over the immense desert belt from Iran to W. Sahara and often also ± far southwards in the arid regions of tropical Africa. The Eremian fauna thus lies in the transition zone between the Palaearctic and Ethiopian regions. Consequently it is partly of Palaearctic and partly of Ethiopian origin. WILTSHIRE (*op. cit.*, p. 452) has emphasized that many of the Eremian Lepidoptera species of Egypt are to be regarded as tropical (= Ethiopian). Apparently a number of Eremian Hemiptera are likewise of Ethiopian origin, but our knowledge of the distribution and taxonomy of the Ethiopian Hemiptera is too imperfect to allow any further conclusions on this point. In this publication the term Eremian has thus been used for all species adapted to the desert belt mentioned above, whether they have spread southwards into Tropical Africa or not.

5. The Ethiopian element

About 8 % of the Egyptian Hemipterous fauna belongs to the Ethiopian element (only 4 % in Israel). The percentage is remarkably low, considering that the country extends beyond the Tropic of Cancer in the south. This is in contrast to WILTSHIRE's (*op. cit.*, p. 252) observations on the Egyptian Lepidoptera, among which the Ethiopian element is very numerous and, even excluding the species of the Jebel Elba area, is almost as numerous as the Eremian and exceeds in numbers each of the Euro-oriental and Mediterranean categories in Egypt. Even if we regard a part of the Eremian Hemiptera as Ethiopian the species of this element still remain considerably fewer than the Eremian and Mediterranean ones. This is certainly due to the different dispersal habits and possibilities for spread within the Lepidoptera and Hemiptera. At present the vast desert belt, about 1300 – 1 500 km broad, extending from the central parts of Egypt far into the Sudan near the latitude of Khartoum and being completely sterile, forms, especially in upper Egypt and Nubia, a most effective barrier to the Ethiopian species. Even the possibility of dispersal by wind, at least effectively, seems to be very improbable. Nor has the Nile Valley apparently been of any great importance for their spread. In Upper Egypt and Nubia it is very narrow, the narrow cultivated shore of the river changing suddenly to sterile desert. I have already pointed out previously (LINNAVUORI 1963, p. 105) that the main route for northward spread has been the mountain ranges bordering the Red Sea. The Ethiopian fauna and flora, certainly widespread in Nubia and Egypt during the Pluvial period, had to retreat during the desiccation phase to the Red Sea hills, where, even at present, the Jebel Elba and Erkowit areas are favourable for numerous Ethiopian species. Both here and in the other parts of the mountain ranges the numerous wadis have aided distribution, especially in the past when the climate was still more humid. Many species, especially those that have been able to adapt themselves to drier conditions, have thus been able to spread northwards from here to Sinai, Palestine or even farther.

The only species of the Egyptian Hemiptera that are predominantly Ethiopian are the aquatic forms, among which we find remarkably few Palaearctic species, although in Israel they are still relatively numerous (*Corixa punctata* Ill., *Sigara nigrolineata* (Fb.), *Nepa dollfusi* Es. (= *sardiniensis* Hf.), *Ilyocoris cimicoides* (L.), *Naucoris maculatus* F., *Velia affinis* Klt., the *Gerris* species, *Hydrometra stagnorum* (L.) and the *Saldula* species). These species have clearly not been able to cross the Negev desert and Sinai and adapt themselves to the conditions in the Nile Region. On the other hand, the Ethiopian species have been able to use the Nile Valley with success, although among the species recorded from Egypt some (*Hydrocyrius*, *Macrocoris*) are certainly not indigenous to this country. But many species are common and have even been able to continue their spread northwards to Palestine or, like *Belostoma*, even to Europe. Yet even in this case one must not overemphasize the significance of the Nile. In the Sudan many species common and charac-

teristic in southern Sudan reach their limit relatively suddenly about 300 – 400 km south of Khartoum. For them either climatic or edaphic factors have formed an obstacle to distribution farther north. It is to be noted that some aquatic species have used only the Red Sea hill route for their distribution. Such are *Hebrus jeanneli*, *Heleocoris minusculus* and *Laccotrephes fabricii*, which do not occur in the Nile Valley.

An interesting example among the Ethiopian aquatic Hemiptera is *Enithares rhodopis* Hc. It is common in the isolated oases of Kharga and Dakhla, but seems to be absent from the Nile, whose water-bug fauna is well known, having been studied by several entomologists. In the Sudan the northernmost place where I found the species is Wadi Medani, south of Khartoum. It may be that the species in question is a relict from the pluvial period that has been able to survive in these two oases. In W. Sahara we know another example of the same genus, *E. sobria* Stål, which has been found in S. Morocco and as a separate subspecies *E. daigrei* Ps. in Algeria.

The littoral zone of the Red Sea is another area that is interesting from the zoogeographical point of view. It is well known that here there exist the northernmost coral reefs (to as far north as the Bay of Akaba) and mangrove formations in the world. The climate along the coast is humid and hot and the temperature of the water high, suitable for a thermophilous tropical fauna. I regard *Omania coleoptrata* Hv. and *Nertha rugosa* (Desj.) as examples of this. The former is known from the coasts of tropical Arabia, the latter has a wide distribution in the Indian and Pacific Oceans, being known from Mauritius, Panama and Florida. The same category also includes the pelagic *Halobates hayanus* B.W. with a wide range in the Indian and Pacific Oceans and found by me in great numbers in the mangrove thickets near Mersa Halaib in the Sudan. This species will certainly be found in similar places in Egypt in the future.

6. Endemics

Most of the Egyptian endemics (9.9 %) are certainly not endemics in a strict sense. I have found a number of them in the Sudan, Arabia and Israel, and they obviously have a wider range in the Eremian area. Of the Egyptian areas, Sinai is the most isolated and could thus have been species which originated there.

Summary

In the present paper 3 new genera and 29 new species or forms of Hemiptera have been described from Egypt and the adjacent Eremian area. In addition, several species have been recorded as new to that country.

The Hemipterous fauna of Egypt is remarkably poor as compared, for instance, with that of the adjacent Israel. The main reason for this is the extremely dry desert climate prevailing over the greater part of the country. The over-cultivation of the fresher biotopes has also had an adverse influence on the original fauna.

The fauna is mainly Mediterranean (34.8 %) on the one hand and Eremian (37.3 %) on the other, the former element prevailing in the northern parts of the country. The remarkably small proportion formed by the Ethiopian element (8.0 %) is evidence of the difficulty of spreading across the wide desert belt in upper Egypt and Nubia.

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