

# Contribution to the study of Turkish Pentatomoidea (Heteroptera) I. *Tarisa* A. S.

N. Lodos\* F. Önder\*

## Ö z e t

### Türkiye Pentatomoidea (Heteroptera) faunası üzerinde incelemeler

#### I. *Tarisa* A. S.

Bir ülkenin kendi demirbaşı sayılan faunasını bilmek çok önemlidir. Hele yurdumuz gibi birçok değişik iklim koşullarına sahip, farklı coğrafi bölgelere ayrılmış çok zengin fauna ve florası olan bir ülke için bunu bilmek daha da önem taşımaktadır. Maalesef yurdumuz faunasını teşkil eden birçok böcek guruplarına ait bilgilerimiz henüz yeterli değildir. Bu hususta pek çok çalışmaların yapılması gerekmektedir.

Yurdumuzun iyi bilinmeyen guruplarından birisi de Pentatomoidea üstfamilya'sına ait böcek türleridir. Bu böcekler hakkında her ne kadar yurdumuz faunası ile ilgili olmak üzere pek çok yabancı eser bulunmakta ise de bunların çoğu listelerden ibarettir. Bunlardan ancak bir iki tanesi Türkiye'de bulunan türleri toplu olarak vermekte (Hoberlandt, 1955 gibi) ise de bunlar da birçok yönlerde eksik bulunmaktadır. Bu hususta yerli literatür ise bazı ekonomik türlere ait biyolojik ve ekolojik bilgilere inhisar etmektedir. Bu bakımdan üst familya'ya ait bilinen türleri tanıtmak ve toplu olarak gözler önüne sermek, bir sistem dahilinde cins ve türlere ait teşhis anahtarlarını da vermek suretiyle bu büyük eksikliği kapatmak başlıca amacımızı teşkil etmektedir.

Bu makale bu nedenle Türkiye Pentatomoidea faunası üzerindeki çalışmalara ait bir seri yazının ilkinin oluşturmaktadır. Burada şimdilik yalnızca *Tarisa* cinsi ve buna bağlı türler üzerinde durulmuştur

*Tarisa* cinsi Palearktik, kısmen de Ethiopian bölgeye yayılmış 18 kadar türü kapsamaktadır. Yurdumuzda bu cinse ait bugüne kadar yalnızca üç türü bilinmekte idi (*T. osmanica* Hob, *T. virescens* H.S. ve *T. fraudatrix* Horv.). Bu çalışmada saptanan *T. ıgdirensis* n. sp. ile bu sayı dörde çıkmıştır. *Tarisa* türleri genellikle tuzlu topraklarda yetişen Chenopodiaceae familyası bitkileri üzerinde yaşarlar.

\* University of Ege, Faculty of Agriculture, Department of Entomology and Agricultural Zoology, Izmir/TURKEY.

## Introduction

This paper, the first in a series deals with the work about Pentatomoidae of Turkey and presently concerned only with the genus of *Tarisa*. Unfortunately there is no comprehensive work on Pentatomoidae of Turkey. Though there are several works published earlier but, mostly they were merely as lists. The present work aims not only to give the list of known species but as well as taxonomic characters of each species, keys for identification, distribution, host plants and short life histories of the important species.

The known species of *Tarisa* of Turkey up to date include about 3 species namely *T. osmanica* Hob., *T. virescens* H.S. and *T. fraudatrix* Horv. In the present work *T. igdirensis* n. sp. is described and together with this one known species of this genus in Turkey became 4 in number.

As far as the distribution of *Tarisa* species are concerned, they can be found nearly all over in Turkey but it seems that presently each species confined in certain geographic region in Turkey as shown in Fig. 1.

The species of *Tarisa* are known to be living on Chenopodiaceae plants which grow in the salted soils.

### *Tarisa* Amyot et Serville

Amyot et Serville, 1843, Hist. Hém., p. 60. Type - species, *Tarisa flavescens* A. - S. 1843, *ibid*.

Syn. : *Coelocoris* Bolivar 1879

Suboval or discoidal in form; convex; body punctured; pronotum and scutellum with more or less distinct tubercles. Head triangular; convex; perpendicular; bucculae distinct; antennae moderate; rostrum reaching the middle coxae. Pronotum hexagonal usually with tubercle; lateral margins subrectilinear; lateral angles curvilinear; posterior angles obtuse. Propleura short, distally laminate; not reaching the antenniferous tubercle. Scutellum reaching or extending beyond apex of abdomen. Odiferous orifice indistinct. Abdomen large and strongly convex. Legs short; femora unarmed. Genital segment globular, apical margin nearly straight, somewhat depressed below the apical margin. Parameres more or less sickle shaped with an elongated apophysis and hairy, large middle projection.

The species of *Tarisa* feed on Chenopodiaceae plants which grow on the salted soils.

This genus contains rather small sized species. Four species of this genus including a new one occurring in Turkey.

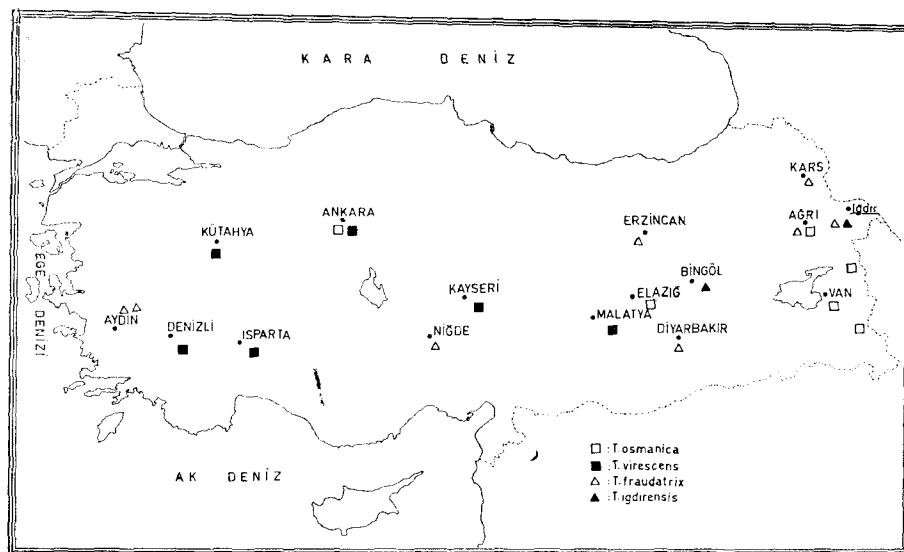


Fig. 1. Distribution of the *Tarisa* species in Turkey.

*Tarisa osmanica* Hoberlandt 1955 (Plate I A)

Oval and short. Stramineous yellow-brown with some brownish drawings and light yellow callous elevations. Surface of the body distinctly and deeply punctured. Head regularly rounded in the front, distinctly perpendicular, moderately convex; juga longer than tylus; bucculae moderately rounded, posteriorly highest; rostrum extending to the posterior coxae; antennae yellow-brown. Pronotum transverse, 2.2 times as wide as long; anterior half perpendicular; anterior margins sinuated, lateral angles broadly rounded with a distinct callous carina in the middle. Scutellum almost as long as wide; regularly rounded at the end, on the middle a large tubercle which is higher than the level of the base of pronotum; basal angle with a longitudinal, oblique, callous elevation; a longitudinal callous carina on the middle; abdomen almost concealed by the scutellum except base of corium and margin of elytra. Venter light yellowish brown. Legs light yellowish brown; base and end of each tarsal segment darkened.

Pygophore: globular, apical margin nearly straight, followed by a deep depression; parameres somewhat sickle in shape, apophysis thick and short, middle projection small, with long hair (Plate II A).

Length: 4.1 mm (♂), 4.8 mm (♀).

**Distribution:** This species is probably of endemic distribution restricted to the high Anatolian plateau. Type-locality of this species is (Moğan Gölü) Ankara (Hoberlandt, 1955). By this study it has found that it distributes especially in the eastern part of Turkey (see Fig. 1).

**Specimens examined:** 1 ♀ from Hamur (Ağrı), 10.8.1974, on weed; 5 ♂♂, 5 ♀♀ from Elazığ, 4.8.1977, on *Salsola* sp.; 1 ♂ from Muradiye (Van), 7.8.1977, on *Salsola* sp.; 2 ♂♂, 6 ♀♀ from Van, 7.8.1977, on *Salsola* sp.; 2 ♀♀ from Başkale (Van), 13.6.1976 on weed; 10 ♂♂ 10 ♀♀ also from Başkale, 8.8.1977, on *Salsola* sp. All these specimens deposited in our collection.

*Tarisa virescens* Herrich-Schaffer (Plate 1 B)

Syn.:—*notoceras* Klt. 1857

Greenish in color. Glabrous; uniformly punctured. Head perpendicular; total length of the head as wide as the vertex including the eyes; juga slightly longer than tylus; lateral margins nearly straight; first and second antennal segments greenish; the remaining yellowish brown. Pronotum transverse, about twice as wide as long; without tubercle on the disc; a feeble longitudinal callous carina on the middle which is sometimes obscured. Scutellum with an acute tubercle on the middle; middle of the base convex, an oblique longitudinal callous elevation each basal angle. Connexivum without noticeable process. Venter greenish in colour. Legs whitish green or light yellowish.

Pygophore: globular but somewhat square, apical margin nearly straight with swallow depression; parameres thick, somewhat sickle in shape; apophysis thin and somewhat elongated; middle projection thick, large, with normal hair (Plate II B).

Length: 3.5—4.5 mm.

**Distribution:** Species of Pontomediterranean element extending in the east as far as Turkestan and the north to Southern Russia. Recorded up to now only from Israel, Syria, Caucasia, Transcaucasia and Turkey (Reuter, 1890, 1900; Oshanin, 1912; Vidal, 1949; Hoberlandt, 1955; Stichel, 1960, 1961; Linnavuori, 1960, 1965; Kerzhner and Yachewskii, 1964).

In Turkey, it has been recorded from Yılanlıdağ (Kayseri) (Horvath, 1905); Baraj (Ankara) (Hoberlandt, 1955) (see Fig. 1).

**Specimens examined:** Specimens are collected from the following localities: 1♂ 2♀♀ and 1♀ from Eğirdir (Isparta), 8-10.7.1963 and 8.7.1975

respectively; 3♂♂, 7♀♀ from Isparta, 13.6.1973; 2♂♂, 5♀♀ from Altıntaş (Kütahya), 28.6.1975; 1♂, 3♀♀ from Denizli, 6.8.1975; 1♂, 1♀ from Malatya, 9.6.1976. All these specimens collected on the weeds belong to Chenopodiaceae family and deposited in our collection.

***Tarisa fraudatrix* Horvath 1891 (Plate I C)**

Syn. : *-chloris* Horv. 1904

Greenish or whitish green, rarely reddish to reddish yellow-brown; surface of the body with the same color puncturations. Head perpendicular; antennae white - yellow, fifth segment sometimes darker. Pronotum transverse, about more than twice as wide as long, a more or less distinct callous elevation on the middle. On the middle of the scutellum a somewhat strong tubercle variable in form; basal angles usually with a small white - yellow callous elevation. Venter greenish. Legs greenish or white - yellow. Femora unicolorous, sometimes distal part black - brown.

Pygophore: somewhat globular, apical margin nearly straight with median depression; parameres elongated, somewhat sickle in shape, apophysis long, middle projection thin, elongated with hair, the space between apophysis and middle projection is somewhat oval (Plate II C).

Length : 3.8 mm (♂), 4.8 mm (♀).

**Distribution :** Species of Irano-Turanian element. Recorded from Turkestan, Iran, Southern Russia, Caucasia, Syria, Israel and Turkey (Horvath, 1894; Reuter, 1900; Oshanin, 1912; Kiritshenko, 1918; Linnavuori, 1953, 1960, 1965; Hoberlandt, 1954, 1955; Stichel, 1960, 1961; Kerzhner and Yachewskii, 1964) (see Fig. 1).

In Turkey, it has been recorded from Aralık (Kars) (Horvath 1894; Reuter, 1900; Kiritshenko, 1918); Burulan (Ağrı : Ağrı Mountain) (Kiritshenko, 1918); River basin of Menderes (Aegean Region) (Linnavuori, 1953); Aksaray (Niğde) (Linnavuori, 1965).

Although Linnavuori (*op. cit.*) recorded this species in western part of Turkey (see Fig. 1) the finding of this record is doubtful as we never find this species beyond towards to western of middle Anatolia. This species seems to be confined rather in South-East and eastern part of Anatolia.

**Specimens examined :** Specimens are collected from the following localities: 1♀ from Erzincan, 5.8.1977, on weed; 1♂, 13♀♀ from Iğdır (Kars), 6.8.1977, on *Suedea* sp.; 16♂♂ 38♀♀ from Doğu Beyazıt (Ağrı), 6.8.1977, on *Suedea* sp.. All these specimens deposited in our collection.

*Tarisa igdirensis* n.sp. (Plate I D)

**General shape :** Suboval, convex.

**General colour:** Pale stramineous yellowish green. Head, pronotum, scutellum and sternum stramineous yellowish green. The last antennal segments brownish; the last rostral segment black; sternal spaces between coxae black; dorsum of 1-7<sup>th</sup> abdominal segments black with yellowish green margins in female; in male the first 3 segments are same as in female but, in 4-6<sup>th</sup> segments only the middle portion is black (Fig. 2). Legs yellowish green, apex of femora and tarsi brownish.

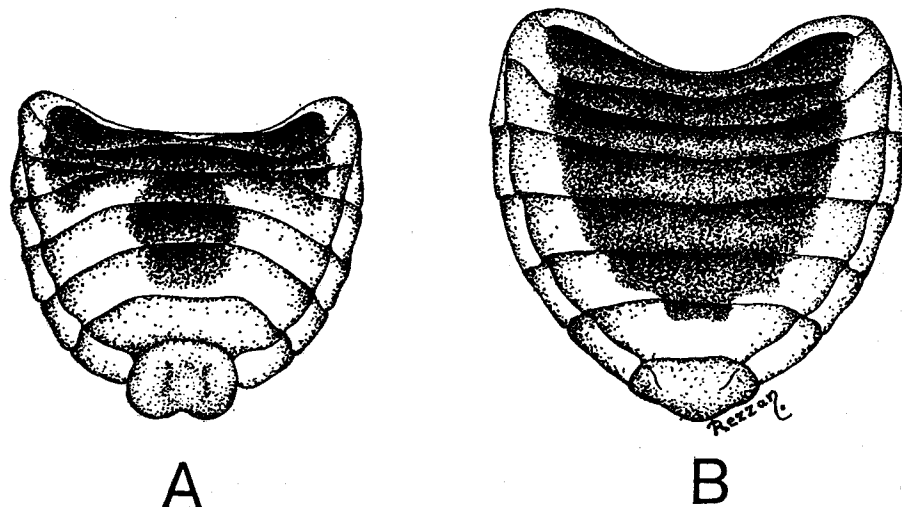


Fig. 2. Colour pattern of the dorsum of abdominal segments  
A. male; B. female.

**Measurements in millimetres of male and (female):**

Length, 3.90 (4.33); head: length, 0.39 (0.49); width, 1.31 (1.36); vertex, 0.75 (0.85); diameter of an eye, 0.28 (0.25); rostrum, 1.70 (1.71); antennae: I, 0.17 (0.17). II, 0.20 (0.18), III, 0.24 (0.23), IV, 0.27 (0.29), V, 0.44 (0.42); pronotum: width, 2.76 (3.33); length, 1.42 (1.42); scutellum: length, 2.62 (2.98); width, 1.91 (2.41) and 2.34 (2.62) at the base and in the middle respectively.

**Structure :** Body 1.4 and 1.3 times as long as wide in male and female respectively. Head strongly perpendicular. Rostrum extends up to the posterior coxae. First antennal segment thick, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>

cylindrical and 5th fusiform in shape. Head, pronotum, scutellum, hemelytra and sternum weakly punctured. Scutellum in the middle with a small tubercle. Body with sparse, very short and pale pubescence. Tibiae and tarsi with a short pubescence.

Pygophore: Somewhat globular, apical margin nearly straight with median depression; parameres somewhat elongated sickle in shape, apophysis longer than that of *T. fraudatrix*; middle projection somewhat thick with two distinct projections, space between apophysis and middle projection is almost rectangle (Plate II D).

Holotype, ♂, TURKEY: Ağrı (Doğu Beyazıt-West slopes of Ağrı Mountain), 6.8.1977 (Coll. F. Önder and E. Pehlivan), on *Suedea* sp. and deposited at the University of Ege, Faculty of Agriculture, Department of Entomology and Agricultural Zoology, Izmir, Turkey.

Paratypes, 7 ♂♂ 4 ♀♀ from the same locality and date as holotype; 8 ♂♂, 10 ♀♀, on weed; Bingöl, 10.8.1977, 1 ♂ on *Tamarix* sp. All these specimens collected by the same collectors and deposited in the same institution.

*T. igdirensis* n.sp. is very close to *T. fraudatrix* from which it can be easily distinguished by the following characters: (1) lacking of longitudinal callous carina on the pronotum and scutellum; (2) also lacking of the basal callous elevation on scutellum; (3) general shape of the head; (4) shape of parameres.

**Derivatio nominis:** This species names after its type-locality which is Iğdır belongs to vil. Kars (Fig. 1).

**Habitat:** Unwooded and uncultivated hill formations, on the plants grown in the salted soils.

The following key is given for the separation of *Tarisa* species found in Turkey.

#### Keys to the species of *Tarisa*

1. Scutellum with a large tubercle which markedly raised above pronotum (Plate III A,B) . . . . . 2
- Scutellum with a small tubercle which raised below pronotum (Plate III C,D) . . . . . 3
2. Puncturation of body rather deep; with two pairs of callous elevation on the base of scutellum (Plate I A) . . . . . *T. osmanica*
- Puncturation of body shallow; with only one pair of callous elevation on the base of scutellum (Plate I B). . . . . *T. virescens*

3. Puncturation of body rather deep; longitudinal callous carina and basal callous elevation of scutellum present (Plate I C); parameres as in (Plate II C,b). . . . . *T. fraudatrix*  
 — Puncturation of body shallow; no longitudinal callous carina and basal callous elevation on the scutellum (Plate II D,b). . . . *T. igdirensis* n.sp.

## Acknowledgements

The writers wish to express their sincere thanks to Dr. E. Pehlivan for collecting the specimens of the new species and also to Miss R. Dağdeviren for the drawings.

## Summary

This paper is the first in a series and deals about the genus of *Tarisa* of Turkey and only four species are discussed.

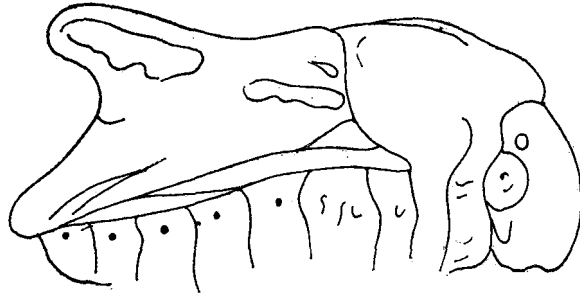
The genus of *Tarisa* comprises about 18 species found mostly in Palearctic and partly in Ethiopian regions. Hitherto only three species of *Tarisa* (namely *T. osmanica* Hob., *T. virescens* H.-S., *T. fraudatrix* Horv.) were found in Turkey. But the present studies raised their number up to four by adding a new species of *T. igdirensis*.

## References

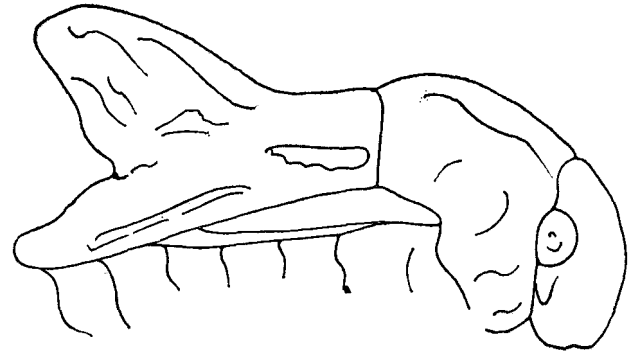
- Hoberlandt, L., 1954. Hemiptera - Heteroptera from Iran I. *Acta ent. Mus. natn. Pragae*, **29** (433): 121-148.
- , 1955. Results of the zoological scientific expedition of the National Museum in Praha to Turkey. 18. Hemiptera IV. Terrestrial Hemiptera - Heteroptera of Turkey. *Ibid*, Suppl. 3:1-264.
- Horvath, G., 1894. Hémiptères recueillis dans la Russie meridionale et en Transcaucasie. *Rev. d'Ent.*, **13** : 169-189.
- , 1905. Ergebnisse einer naturwissenschaftlichen Reise zum Erdschias-Dagh (Klein-asien). Hemipteren. *Ann. Naturhist. Hofmuseum Wien*, **20** : 179-189.
- Kerzhner, I. M. and T.L. Yachewskii, 1964. "19. Order Hemiptera (Heteroptera), pp. 851-1118." Keys to the Insects of the European USSR. Vol. I. Apterygota, Palaeoptera, Hemimetabola. Editor: G. Ya.



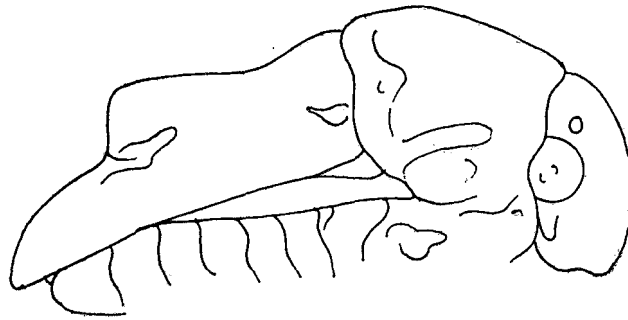
- Bei-Bienko (Translated from Russian, 1967). Israel Program for Scientific Translations, Jerusalem, 1214 s.
- Kiritshenko, A.N., 1918. Hemiptera-Heteroptera faunae Caucasicae. Pars I. *Mem. Mus. Caucase*, Ser. A, No. 6: 1-177.
- Linnavori, R., 1953. A palaeartic Heteropterous material collected by J. Sahlberg and U. Saalas. *Ann. ent. fenn.*, **19**: 147-167.
- , 1960. Hemiptera of Israel I. *Ann. Zool. Soc. "Vanamo"*, **22** (1): 1-71.
- , 1965. Studies on the South— and Eastmediterranean Hemipterous Fauna. III. Hemipterological observations from Turkey. *Act. ent. fenn.*, **21**: 44-61.
- Oshanin, B., 1912. Katalog der palaarktischen Hemipteren (Heteropteren, Homoptera - Auchenorrhyncha und Psylloidea). Verlag von R. Friedlander und Sohn, Berlin, 187 s.
- Reuter, O. M., 1890. Notes géographiques sur les Héteroptères paléarctique. *Rev. d'Ent.*, **9**: 237-245.
- , 1900. Monographia generis *Tarisa* Am. et Serv. *Öfv. Finska Vetensk. Soc. Förch.*, **43**: 25-48.
- Stichel, W., 1960. Illustrierte Bestimmungstabellen der Wanzen. II. Europa. **4** (16): 481-512.
- , 1961. Illustrierte Bestimmungstabellen der Wanzen. II. Europa. **4** (24): 737-768.
- Vidal, J., 1949. Hémiptères de l'Afrique du Nord et des Pays circum-méditerranéens. *Mem. Soc. Sci. natn. Maroc*, **48**: 1-220.



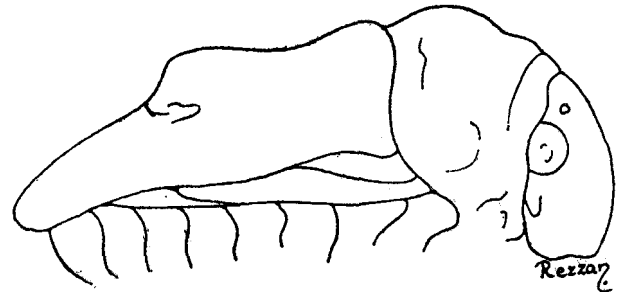
A



B



C



D

Plate III. Lateral view of *Tarisa* species of Turkey.

A) *T. osmanica* ; B) *T. virescens*;

C) *T. fraudatrix*; D) *T. igdirensis*.

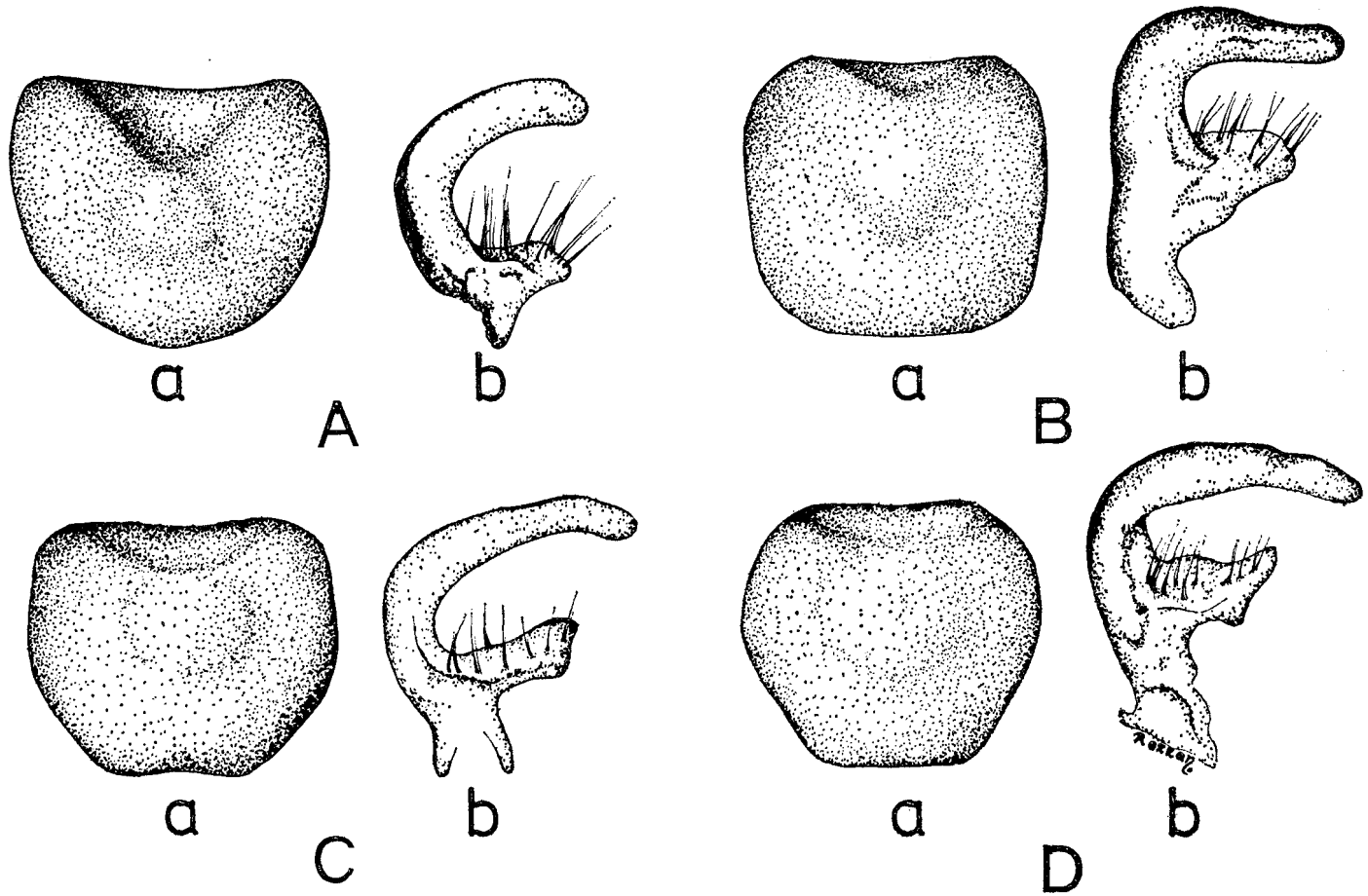


Plate II. Male genitalia of *Tarisa* species of Turkey.  
 a) pygophore ; b) paramere.  
 A) *T. osmanica* ; B) *T. virescens*;  
 C) *T. fraudatrix*; D) *T. igdirensis*.

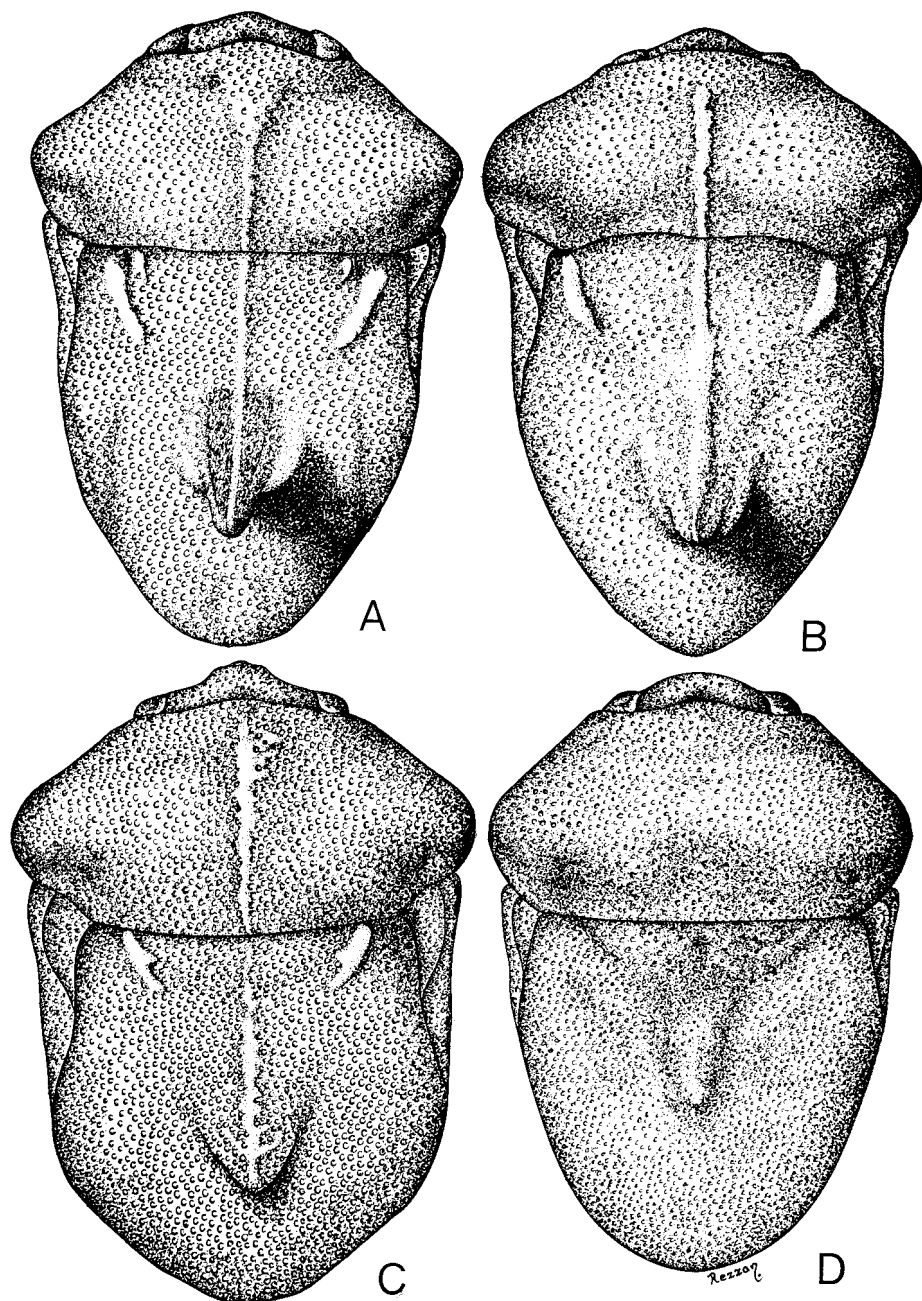


Plate I. Dorsal view of *Tarisa* species of Turkey.  
A) *T. osmanica* ; B) *T. virescens*;  
C) *T. fraudatrix* ; D) *T. igdirensis*.