

ZOOGEOGRAPHY AND HOST PLANTS OF *LONGITARSUS* IN ISRAEL,  
WITH DESCRIPTIONS OF SIX NEW SPECIES  
(COLEOPTERA: CHRYSOMELIDAE)

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ABSTRACT

There are 42 species of *Longitarsus* recorded from Israel. For the Known species, previously recorded and new distributional and Host plant data are listed; zoogeographical affinities and predictions are also given. There are 18 species recorded in Israel for the first time as well as new records from Iran, Cyprus, Syria, Lebanon, Jordan, and Egypt. Three new synonymies are established: *kiapperichi* Mohr (= *akierii* Pic); *syriacus* (Allard) (= *luridus* (Scopoll)); *spifotus* Welse (= *rectilineatus* (Foudras)).

Many new host plant records are given, including records for 8 species with previously unknown hosts.

There are 6 new species described: *ailotrophus*; *bytinskii*; *eminatus*; *hermonensis*; *nigriiividus*; and *nimrodi*.

INTRODUCTION

Alticinae or flea beetles are the most diverse subfamily of the leaf beetles Chrysomelidae. Many members of this family are harmful as agricultural pests and some beneficial as biological control agents of weeds. Alticines are generally the smallest sized chrysomelids; however, they are the only subfamily that has the advantageous locomotory ability of jumping, in fact very few beetles at all have this ability (Furth, 1980, in press). Some alticine genera, especially those which include noxious species, have been relatively well studied as to their alpha taxonomy, general distribution, and even biology and life cycles; e.g. *Phyllotreta*, *Psylliodes*, and *Epitrix*. However, other less pestiferous genera have often been neglected in many respects; such is the case with *Longitarsus* the world's largest genus of Alticinae. Recently certain species groups of *Longitarsus* have become important as biological control agents of weeds. As more is learned about their host plant relationships other species are bound to gain importance in biological control.

In a previous study (Furth, 1979b), the evolution, zoogeography, and host plant ecology of Israeli Alticinae in general were discussed as well as a detailed study of *Phyllo-treta*. The present paper treats 42 species of the genus *Longitarsus* in Israel: six described herein as new species; two species to be described by a colleague; 18 new records for Israel; and 16 previously recorded species 14 of which were listed by Bodenheimer (1937) along with 2 other taxa misidentified at that time. The complete range of all species as well as their known and predicted distribution in Israel and the surrounding areas of the Middle East are included. Based on the present research, the phenomena of intra-specific wing polymorphism, host plant ecology, and biogeography will be discussed in the following paper (Furth, 1980).

#### METHODS

This research, especially the field work, was largely conducted in the course of a Cornell University Ph.D. and a Hebrew University of Jerusalem Postdoctoral Fellowship, with field work during the seasons of 1972-1974 and 1977-1979. In addition, literature and taxonomic investigations were made at Cornell and Yale University (Peabody Museum of Natural History). Many museum and private collections were visited during 1972-1974 and 1977 in order to examine alticine material; specimens were also borrowed from various institutions. A list of these collections (those visited indicated by the year), their curators, and abbreviations used herein is found in the Acknowledgements section at the end of this paper.

Field collections were made primarily using a canvas-bag sweep net and/or aspirator. Specimens were either killed immediately in potassium cyanide or kept alive for host plant testing. Great care was taken to make host plant associations in the field whenever possible and to have the hosts accurately identified by botanists. Morphological taxonomic investigations were conducted using various high powered binocular dissecting microscopes. Genitalia dissections were done with simple minuten pin instruments and drawings of genitalia were made by using a Bausch & Lomb Tri-Simplex Micro-Projector. For some additional details see Furth, 1979b.

New species descriptions also follow the format of Furth, 1979b and here any abbreviations or special format will be explained when they first occur. Holotype, allotype, and some



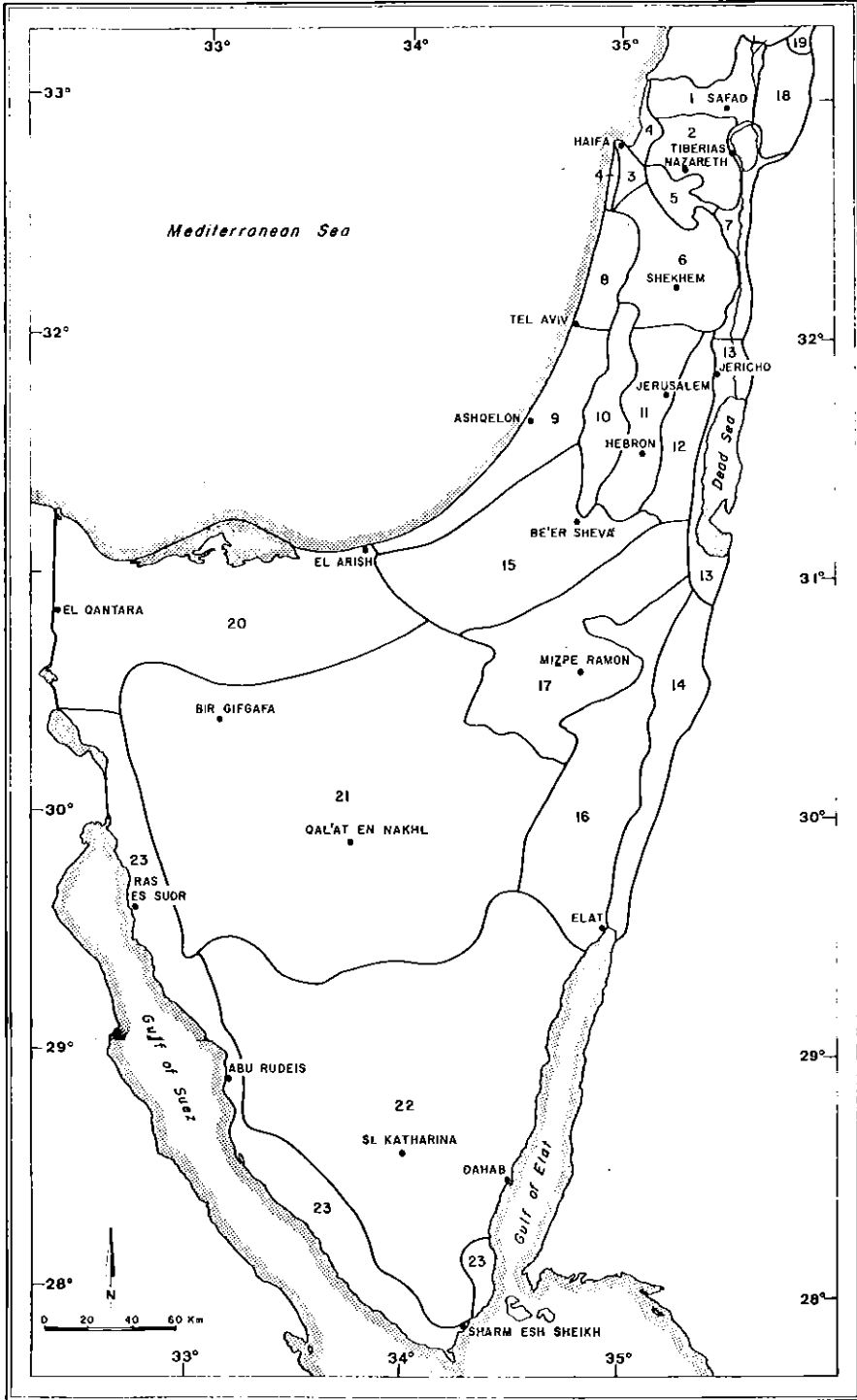
paratypes will be deposited in the Tel Aviv University entomological collections and other paratypes will be deposited in various collections, as indicated, including my own collection (DF). All types were collected by the author unless otherwise indicated.

The list of zoogeography and host plants of Israeli species of *Longitarsus* contains all known and new records of distribution and hosts as well as appropriate commentary on these subjects. The synonymies are also given in this section. The following procedures are used in this list and in the new species descriptions:

*Zoogeography:* The complete known range of distribution of each species is given beginning with western Europe east to Asia, south and west along the southern Mediterranean coast to NW Africa. Only records of countries or regions for which I have not examined material are followed by the reference for this record. The new records, i.e. Israel (new), Cyprus (new), have all been collected by the author. Other new Middle East records are followed by the abbreviation for the collection to which the specimens belong. Records of distribution in the Israeli faunal (biotic) provinces (See Map 1, for geographical names and abbreviations) are given along with the zoogeographical regional affinities and commentary or predictions of occurrence in other countries. Each species is considered based on the listed distributional records and ecological information. The terminology and abbreviations for the zoogeographical regions used are as follows: Mediterranean (Med.); Circum-Mediterranean (Circ-Med.); East Mediterranean (E. Med.); West Mediterranean (W. Med.); Euro-Siberian (ES); Irano-Turanian (IT); Eremian (Er.) or Saharo-Arabian (see Furth, 1979b, 1980). The words north, central, and south are abbreviated by their capitalized first letters (i.e. N., C., S.) when applied to particular countries or regions. For the zoogeographical affinity analysis of the genus and more detailed explanation see the following paper (Furth, 1980).

*Host Plants:* The recorded host plant genera from the literature (number of species in parenthesis) are listed; species names are mentioned if appropriate to the Israeli flora. The specific Israeli host plant records are given in approximately decreasing order of preference, if appropriate the primary host is indicated. In cases where there is some question about the accuracy of the host record, the genus name is preceded by a question mark. A question mark before the host species name indicates some doubt as to the species identification. After the Israeli host records, the range of collection dates in Israel is given.







Map 1. Geographical areas in Israel and Sinai, and abbreviations used in the text. (Reproduced with permission of the Israeli Academy of Sciences and Humanities).

## KEY

- |  |                                      |
|--|--------------------------------------|
| 1. Upper Galilee (U.G.)                    | 12. Judean Desert (J.D.)             |
| 2. Lower Galilee (L.G.)                    | 13. Dead Sea Area (D.S.)             |
| 3. Carmel Ridge (C.)                       | 14. Arava Valley (A.V.)              |
| 4. Northern Coastal Plain (N.C.P.)         | 15. Northern Negev (N.N.)            |
| 5. Valley of Yizre'el (Y.V.)               | 16. Southern Negev (S.N.)            |
| 6. Samaria (S.)                            | 17. Central Negev (C.N.)             |
| 7. Jordan Valley and Southern Golan (J.V.) | 18. Golan Heights (G.H.)             |
| 8. Central Coastal Plain (C.C.P.)          | 19. Mount Hermon (M.H.)              |
| 9. Southern Coastal Plain (S.C.P.)         | 20. Northern Sinai (N.S.)            |
| 10. Foothills of Judea (J.F.)              | 21. Central Sinai Foothills (C.S.F.) |
| 11. Judean Hills (J.H.)                    | 22. Sinai Mountains (S.M.)           |
|  | 23. Southwestern Sinai (S.S.)        |

ISRAELI SPECIES OF *LONGITARSUS**Longitarsus aeneus* Kutschera*Zoogeography*

Range: W. Mediterranean north to S. France and east to Italy; Malta; Yugoslavia (Gruev, 1979); Morocco to Egypt; Jordan (new-MV); Israel. Circ-Med.; probably in Syria, Lebanon, and locally in E. Med. countries.

Israel: all north and central regions south to S., C., N. Negev, but not yet recorded in A.V. or D.S.

*Host*

Recorded: *Echium vulgare* (Bargagli, 1878); *Echium* (?) (Peyerimhoff, 1911); *Cynoglossum officinale* (Jolivet, 1967).

Israel: *Echium judaecum*; *E. angustifolium*; *E. longifolium*; *E. glomeratum*; *Anchusa aegyptica*; *A. hybrida*; *Alkanna strigosa*. From 7 Dec. to 21 May (M.H.).



*Longitarsus albineus* (Foudras)

## Zoogeography

Range: S. Europe (including Med. Islands - Balearics, Sicily, Corsica, Sardinia) north to mid-France and N. Italy, east to Balkans; Poland (Warchalowski, 1976); USSR (Crimea, S. Russia) and Iraq (Heikertinger *et al.*, 1940); Iran; Afghanistan - 1,740m (Lopatin, 1963); Cyprus (new); Israel; Egypt; Algeria; Morocco - 2,000m (Jolivet, 1967). Circ-Med./IT/Er., some extension into ES; probably throughout Israel (including Negev and Sinai) to Egypt across N. Africa, and in Jordan, Syria, Lebanon and Turkey.

Israel: M.H.; G.H.; U.G.; S.; J.V.; C.C.P.; J.F.; J.H.; D.S.; N.N.; C.N.

## Host

Recorded: *Heliotropium europaeum*; *H. sp.* (Jolivet, 1967).

Israel: *H. europaeum*; *H. villosum*; *H. maris-mortui*; *H. bovei*; *H. ?sp.* From 19 March and 1 May to 8 Dec.

*Longitarsus albus* (Allard)

## Zoogeography

Range: Israel (new); Algeria; Morocco (Warchalowski, 1969). W. Med. (coastal); probably from Israel across N. Africa along coastal dune areas.

Israel: N.C.P.; C.C.P.; S.C.P.

## Host

No previous record; in Israel on *Senecio joppensis*. From 20 Feb. to 10 May.

*Longitarsus alfierii* Pic

*Longitarsus klapperichi* Mohr, 1962; 323, n.syn.

## Zoogeography

Range: Spain, Yugoslavia, Bulgaria (Gruev, 1973), USSR (S. Russia);



Israel (new); Lebanon (new-MP (Pic)); Jordan; Egypt; Algeria (Peyerimhoff, 1929). Circ-Med.; throughout Middle East, possibly in most other Med. countries and in N. Africa.

Israel: M.H.; G.H.; S.; J.V.; C.C.P.; J.F.; J.H.; C.N.; S.M.

*Host*

No previous record; in Israel on: *Nepeta curviflora* (primary host); *N. italicum*; *Majorana syriaca*; *Ballota* ? *kaiseri* (Sinai); *B. undulata* (Negev); ? *Salvia hierosolymitana*; *Brunnera orientalis*. From 14 Jan. to 20 June (M.H.) and 26 Nov.

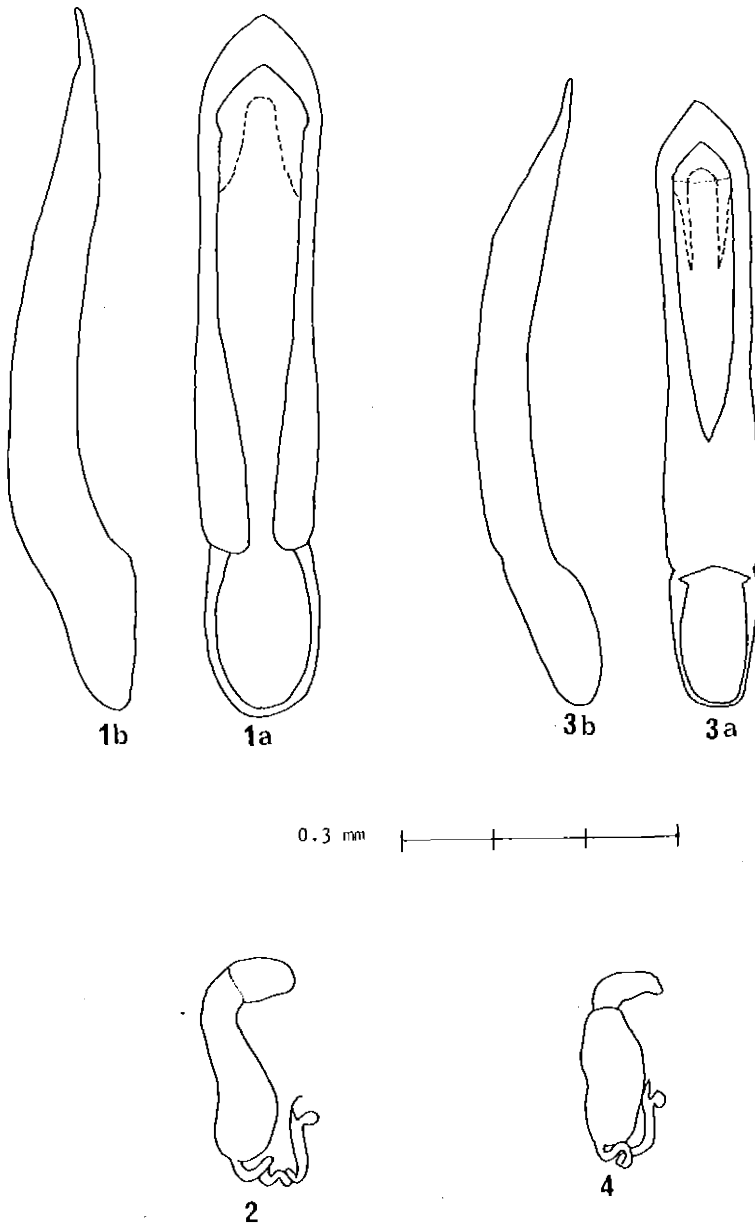
Synonymy: I have examined 5 cotypes of *alfierii* Pic: 3 (CHNM); 1 (MP); 1 (MF). I have also examined the allotype and 13 specimens of *klapperichi*, Klapperich Collection (MV) and one specimen from AW; all have been determined by K-H. Mohr. I have determined that both species are identical in all respects; therefore, synonyms. Mohr (*in litt*, 1977) mentions that *L. antineae* (Peyerimhoff, 1929) from Algeria is synonymous with *klapperichi* Mohr; therefore, it is also a synonym of *alfierii*. I have not examined specimens of *antineae*. Peyerimhoff recorded *L. antineae* on *Teucrium antineae*; *Ballota* sp., *Lavandula antineae*.

*Longitarsus allotrophus* n.sp. (Figs. 1,2)

*Antennae*. Usually segments 1-4(5) slightly lighter brown, gradually darker brown apically sometimes entirely light brown to brown. Proportions: segment 2 swollen more than other segments and evidently longer than 4 or 6, but slightly shorter than 5; 4 and 6 subequal, longer than 3 (= shortest), noticeably shorter than 5 (= longest). The following are representative measurements (0.01 mm) for segments 2-6 - Male: 11-7-9-12-9. Female: 11-7-9-13-9.

*Head*. Color brown or dark reddish brown (= ferrugineus); punctuation - impunctate except for several punctures near and/or just dorsal to the lateral frontal lines at the juncture with the eye (= eye-pit); texture (= surface) very finely shagreened; frontal bossae not at all indicated (= no evidence of impressed dorsal frontal lines); nasal carina not distinctly raised or keeled, but somewhat broad and flat; labrum usually colored as rest of head but sometimes darker brown mesally.





Figs. 1-4. *Lonqitarsus* species. 1-2 *L. allotrophus* n.sp. 1a-b - aedeagus (N. Keziv, U.G.), a - ventral view, b - lateral view; 2 - spermatheca (N.Oren, C.). 3-4 *Lonqitarsus* undescribed species B. 3a-b - aedeagus (Segula, S.C.P.); 4 - spermatheca (Biddu, J.H.).



*Pronotum*. Color approximately as in head, but often somewhat darker brown or ferrugineous and slightly mottled (= irregularly colored); punctation fine, usually shallow, finer than elytral punctation, moderately dense, sparser laterally, confused, texture finely shagreened, often causing a slight metallic reflection; shape subrectangular (see measurements); lateral margins evenly rounded; bristle pore area (= anterolateral corners or angles) somewhat thickened, projecting, and rounded (not angled).

*Elytra*. Color as in pronotum; punctation medium (coarser than pronotum), dense, usually evidently striate, at least in center of elytral disc (unlike *minusculus* (Foudras)); texture apparently smooth; shape elongate or elongate-oval; lateral margins slightly rounded; all known populations micropterous, thus humeral calli absent and rounded (or weak).

*Legs*. Fore and mid legs uniformly light brown to brown; hind legs uniformly darker brown or ferrugineous, but tarsi distinctly lighter brown or yellow; male first foretarsal segment distinctly swollen.

*Venter*. Dark brown or ferrugineous; male apical sternite without any depression.

*Genitalia*. Male Fig. 1a-b. Female Fig. 2.

*Measurements*. (all measurements are in mm and the following abbreviations are used: Lb = maximum body length; Le = elytra length; Lp = pronotum length; Wp = maximum pronotum width; Weh = width at the elytra at the humeral calli; Wem = maximum width of elytra) Male: Lb = 1.52-2.07; Le = 1.20-1.57; Lp = 0.36-0.47; Wp = 0.52-0.69; Weh = 0.62-0.81; Wem = 0.78-1.04. Female: Lb = 1.65-2.00; Le = 1.28-1.55; Lp = 0.37-0.48; Wp = 0.53-0.65; Weh = 0.65-0.80; Wem = 0.85-1.05.

*Zoogeography*. Israel; Jordan (MM). E. Med.; probably in Lebanon and Syria.

Israel: M.H. (2,000m); U.G.; L.G.; C.; S.; J.H.

*Host*.

*Stachys cretica*; *S. distans*; *S. palaestina*; *Prasium majus*; *Phlomis viscosa*; ? *P. brevilabris*; *Marrubium* ? *multiradiatum*; *Sideritis* ? *pullulans*; *Cephalaria joppica* (= allotrophy).



*Discussion.* *L. allotrophus* is closest to an undescribed species B near *minusculus* (to be described by Dr. C. Leonardi) (see also Furth, 1976, pp. 225-228); however, it differs from *allotrophus* in the following respects: elytral punctation usually confused, rarely with evidence of striae; elytral lateral margins subparallel not rounded, thus elongate; all known Israeli populations macropterous; recorded only on species of *Molucella* (Labiatae); different aedeagus (Fig. 3a-b); different spermatheca (Fig. 4).

Although the undescribed species B near *minusculus* and *allotrophus* are somewhat similar to *luridus* in some external morphology, there is no distinct indication that either is conspecific with *syriacus* (Allard) (= *luridus* (Scopoli); see p.103). In the original description Allard (1866) says that *syriacus* has a smooth pronotum (not shagreened) and well defined frontal bossae; however, both *allotrophus* and the undescribed species near *minusculus* are consistently characterized by having a distinctly shagreened pronotal surface texture and no evidence of frontal bossae (dorsal frontal lines).

This new species is named for the fact that it demonstrates the interesting ecological phenomenon of allotrophy (= alternate/secondary host plant in an unrelated plant family; see Furth, 1980).

**MATERIAL EXAMINED.** Holotype ♂, Nachal Keziv, U.G., 4 IV 1978 (Fig. 1) (TAU). Allotype ♀, same data as holotype (TAU). Paratypes: 5 ♂♂, 2 ♀♀, same data as holotype (DF); 6 ♂♂, 5 ♀♀, N. Keziv, 8 V 1979 (♂, ♀ BMNH, USNM, BSC, MP; remainder DF); ♀, N. Amud, U.G., 26 X 1977 (DF); 2 ♂♂, 2 ♀♀, N. Amud, 7 IV 1978 (DF); 2 ♂♂, 1 ♀♀, N. Amud, 30 IV 1978 (DF); 38 ♂♂, 47 ♀♀, Mt. Meron, U.G., 1200m, 7 IV 1978 (DF); 19 ♂♂, 13 ♀♀, Mt. Meron, 1200m, 30 IV 1978 (DF); 3 ♂♂, 8 ♀♀, Peqi'in, U.G., 7 V 1979 (DF); 2 ♂♂, 6 ♀♀, Elon, U.G., 17 I 1979 (DF); 24 ♂♂, 29 ♀♀, Mt. Hermon, 1600m, 26 IV 1978 (DF); ♂, Mt. Hermon, 1650m, 26 IV 1978 (DF); ♂, Mt. Hermon, 1400m, 26 IV 1978 (DF); ♂, Nazareth, L.G., 2 III 1979 (DF); 4 ♂♂, 3 ♀♀, Nazareth, 8 V 1979 (DF); ♂, Hasolelim, L.G., 8 V 1979 (DF); 2 ♂♂, 3 ♀♀, N. Oren, C., 3 IV 1978 (DF); ♂, ♀, N. Oren, 9 VI 1978 (DF); ♀ Haifa, C., 9 VI 1978 (DF); 3 ♂♂, 6 ♀♀, N. Oren, 9 VI 1979 (DF); ♀, Regavim, S., 31 XII 1977 (DF); 9 ♂♂, 8 ♀♀, Wadi Ara, S., 2 V 1979 (DF); ♂, Mt. Tavor, Y.V., 9 V 1978 (DF); 6 ♂♂, 4 ♀♀, Shores, J.H., 10 IV 1978 (DF).



*Longitarsus anchusae* (Paykull)*Zoogeography*

Range: Europe north to S. Scandinavia, south to S. France, Italy, Balearic Isl., and east to Balkans (Heikertinger et al., 1940); Poland (Warchalowski, 1976); Turkey; USSR (S. Russia); USSR (Ukraine) (Shapiro et al., 1963); Iran (Berti & Rapilly, 1973); Syria; Israel; Jordan (new-MV); Morocco (Jolivet, 1967); Algeria. Circ-Med./ES; probably in other Middle East countries and also in desert regions of Israel and across N. Africa.

Israel: M.H.; G.H.; U.G.; L.G.; C.; Y.V.; S.; J.V.; C.C.P.; S.C.P.; J.F.; J.H.

*Host*

Recorded: Heikertinger (1925): *Cynoglossum*; *Asperugo*; *Symphytum* (2); *Anchusa*; *Nonnea*; *Pulmonaria* (2); *Myosotis*; *Lithospermum* (3); *Cerithe*; *Echium*.

Israel: *Anchusa strigosa* (primary); *A. hybrida*; *A. azurea*; *Echium glomeratum*; *Symphytum palestinum*; *Alkanna strigosa*; *Cynoglossum creticum*. From 21 Jan. to 14 May.

*Longitarsus ballotae* (Marsham)*Zoogeography*

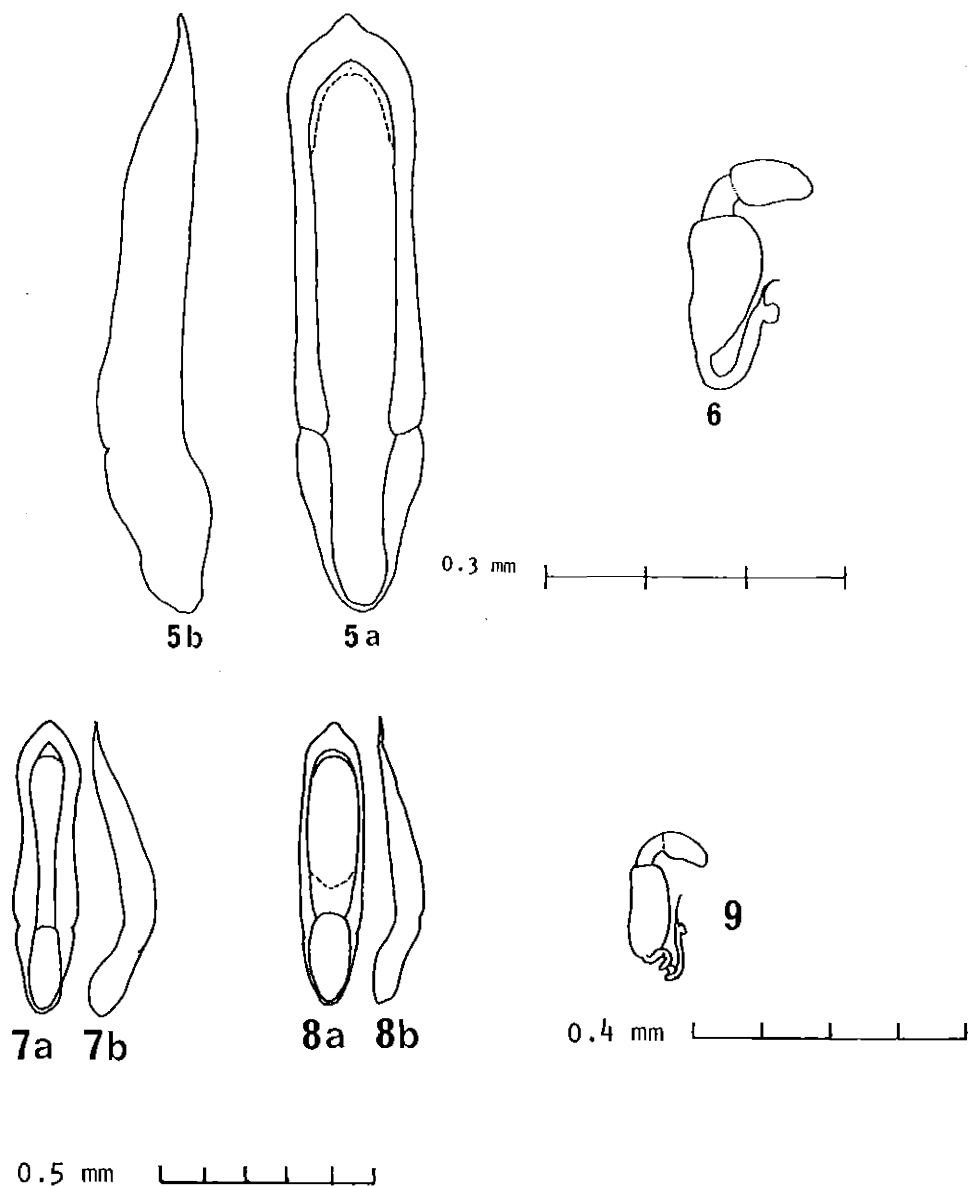
Range: Ireland (Heikertinger et al., 1940); C. and S. Europe, northwest to France and England, southwest to Spain, east to Balkans (Greece); Poland (Warchalowski, 1976); Turkey and USSR (S. Russia) (Heikertinger et al., 1940); USSR (Ukraine) (Shapiro et al., 1963); Cyprus; Syria; Israel (new); Morocco to Tunisia (Jolivet, 1967); Jordan (new-MV). Circ-Med./ES; probably throughout central and northern Israel and Lebanon.

Israel: M.H.; G.H.; U.G.; L.G.; N.C.P.; C.C.P.; S.C.P.; J.F.; J.H.; C.N.

*Host*

Recorded: Heikertinger (1926): *Ballota nigra*; *Marrubium vulgare*. Jolivet (1967): *Ballota* (2).





Figs. 5-9. *Longitarsus* species. 5-6 *L. bytinskii* n.sp. 5a-b - aedeagus (Mt. Hermon, 1900m); 6 - spermatheca (ibid.). 7a-b - *L. pratensis* (Panzer), aedeagus (Italy, Duino) (from Leonardi, 1973a). 8-9 *L. desertorum* Heikertinger. 8a-b - aedeagus (USSR, Bucharica) (from Leonardi, 1973a); 9 - spermatheca (USSR, Dortkuju) (from Leonardi, 1975).



Israel: *Ballota rugosa*; *B. philistaea*; *B. undulata*; *Marrubium vulgare*. From 29 Jan. to 13 Aug.

*Longitarsus bertii* Leonardi

*Zoogeography*

Range: Poland (Warchalowski, 1976); Leonardi (1973a): NE Italy; Austria; Hungary; Albania; NW. Turkey; N. and E. Iran; Bulgaria; Syria (new-MP (Peyerimhoff)); Israel (new). ES/IT, some Med. extensions; probably in Jordan, Syria and Lebanon.

Israel: ?J.H.; S.; J.H. (TU); D.S. (MV).

*Host*

Recorded: *Mentha* (Leonardi, 1973a)

Israel: *Mentha longifolia*. Recorded on 9 Jan.; 24 March; 4, 13 May; 3 June; 1 Aug.; 24 Oct.; 17 Nov.; 1 Dec.

*Longitarsus bytinskii* n.sp. (Figs. 5a-b, 6)

*Antennae*. Basally light brown gradually becoming dark brown to black apically, especially segments 7-11. Proportions: segment 2 approximately subequal to 4, 5, or 6; 5 usually slightly longer; 2 swollen moreso than 4-6; 3 distinctly smallest. Male: 9-6-9-11-9. Female: 10-7-9-11-10.

*Head*. Upper face (= above antennal insertions) darkly ferrugineous to black, noticeably darker than pronotum; lower face lighter, lightly ferrugineous to orange; labrum black; impunctate, except for several eye-pit punctures one of which may extend mesad to others; texture distinctly finely shagreened; no indications of frontal bossae, but lateral frontal lines rather deeply impressed; nasal carina raised and broad.

*Pronotum*. Light brown to brown, often mottled (= two or more tones), rarely ferrugineous, lighter than head and usually noticeably darker than elytra; punctation fine, sometimes very fine, sparse to moderately dense, confused (finer and sparser laterally); texture finely shagreened; shape subrectangular;



lateral margins rounded and usually somewhat laterally compressed; bristle pore area noticeably thickened, slightly projecting and angled.

*Elytra*. Light brown, distinctly lighter than head and pronotum; punctation medium, sometimes fine, often shallow (coarser than pronotum), dense, confused (finer and sparser apically); texture very finely or finely shagreened; shape elongate, lateral margins only slightly rounded; humeral calli partially developed (= brachypterous).

*Legs*. Fore and middle tibiae light brown to brown, lighter than femora; all femora dark brown to ferrugineous, hind femora darkest; hind tibiae dark brown or ferrugineous, but usually lighter than hind femora; male first foretarsal segment noticeably swollen (as in *pratensis* but unlike *desertorum*).

*Venter*. Dark brown or ferrugineous; male apical sternite with vague, shallow, broad depression often only apparent by a small subtriangular depression in anterior part of sternite.

*Genitalia*. Male Fig. 5a-b. Female Fig. 6.

*Measurements*. Male: Lb = 1.35-1.65; Le = 0.95-1.23; Lp = 0.31-0.36; Wp = 0.43-0.55; Weh = 0.51-0.67; Wem = 0.65-0.83. Female: Lb = 1.50-1.82; Le = 1.13-1.25; Lp = 0.35-0.36; Wp = 0.50-0.55; Weh = 0.61-0.70; Wem = 0.77-0.82.

*Zoogeography*. Israel: Mt. Hermon, 1800-2000m; IT; probably in Syria, Lebanon, and Jordan.

*Host*. *Plantago lanceolata* ? var.

*Discussion*. This species is closest to *desertorum* Heikertinger of central Asia and *pratensis* (Panzer) of Europe, also in Israel. There are few external morphological characters that can be used to separate these three species; however, the genitalia are clearly different. The spermatheca of *bytinskii* (Fig. 6) is almost identical to *pratensis* but very different from *desertorum* (Fig. 9). The aedeagus of *bytinskii* (Fig. 5a-b) is very different from *pratensis* (Fig. 7a-b) but very similar to *desertorum* (Fig. 8a-b). The pronotum of *bytinskii* is more laterally compressed than in *desertorum* and *pratensis*; in which it is more broad and flattened, thus almost as wide basally as the elytra. The pronotum (dorsal view) of *bytinskii*, therefore, appears to be relatively narrow (this may vary to a minor degree in wing polymorphic populations). Leonardi (1975) has used the



ratio  $Le/Lp$  to show differences between two species of the *pratensis-desertorum* group. He gives this ratio as greater than 3.7 for *desertorum* and less than 3.7 for *pratensis*; *bytinskii* ( $Le/Lp = 3.07-3.47$ ) falls into the latter category with *pratensis* and, thus, can be separated from *desertorum* on this basis also. The Circ-Med. *pratensis* also exists in Israel (see p. 00) but at low elevations and apparently is not sympatric with *bytinskii*. The IT *desertorum* may eventually be found sympatrically with *bytinskii* on Mt. Hermon, or it may actually be geographically isolated. These three species are apparently part of a closely related (sibling) morpho-ecological species group that feed on *Plantago*.

This species is named for Prof. H. Bytinski-Salz (Emeritus, Tel Aviv University) who originally suggested my research with Alticinae in Israel; he is one of the great entomologists of that country. He has been very helpful during my research and was together with me when I collected the first specimen of this new species.

MATERIAL EXAMINED. Holotype ♂, Mt. Hermon, 1900m (hibernating under stone), 23 IV 1973 (TAU). Allotype ♀, Mt. Hermon, 1900m, 22 V 1973, (TAU). Paratypes: 10 ♂♂, 3 ♀♀, 1900m, 22 V 1973 (♂, ♀ TAU; ♂, ♀ BMNH; others DF); 3 ♂♂, 2 ♀♀, Mt. Hermon, 2000m, 22 V 1973 (DF); ♂, ♀, Mt. Hermon, 1900m, 24 X 1977 (DF); ♂, ♀, Mt. Hermon, ♂, ♀, Mt. Hermon, 1800m, 25 X 1977 (DF). Only specimens from 22 V 1973 were collected on *Plantago lanceolata?* var.; others from general sweeping.

*Longitarsus dimidiatus* Allard sensu Doguet 1976b

*Longitarsus nitens* Khnzorian: Doguet, 1976a: 91.

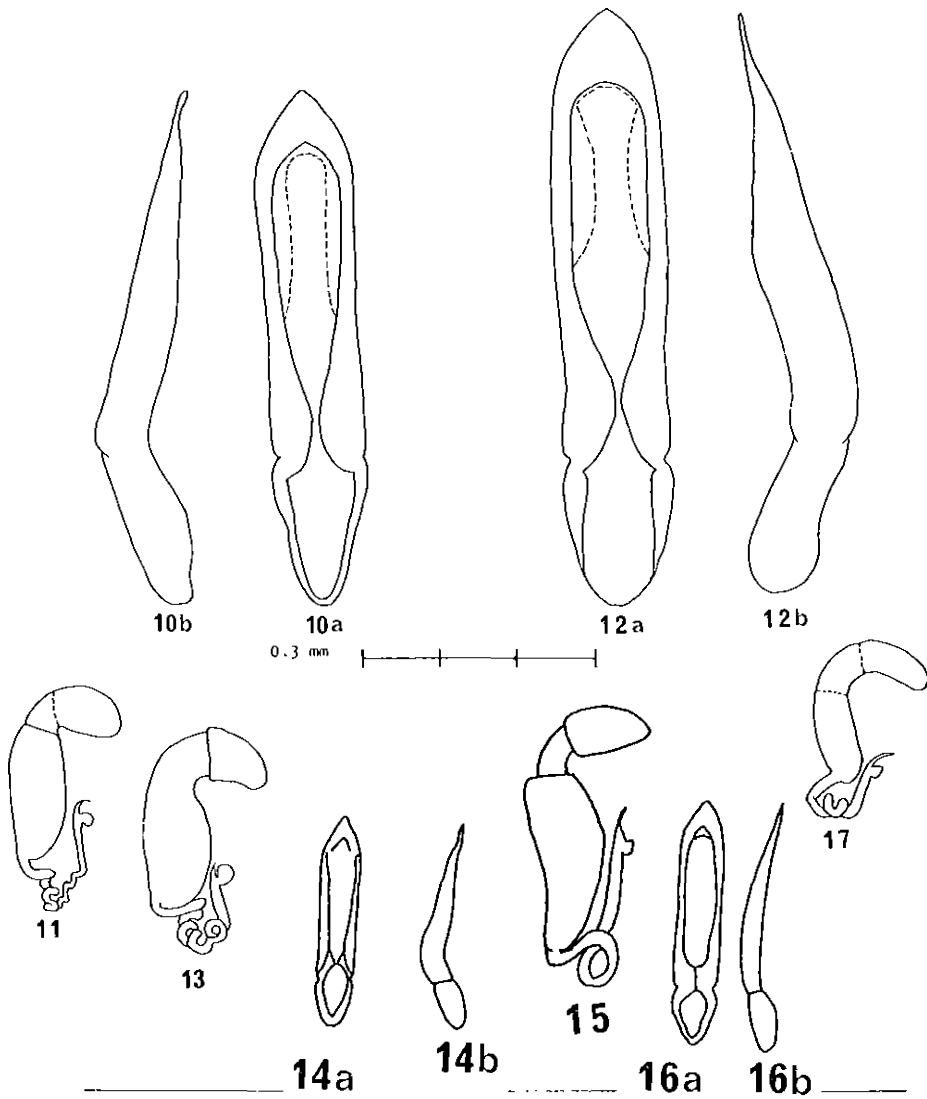
*Longitarsus fallax* Weise: Doguet, 1976b:285.

#### Zoogeography

Range: France; Italy; Greece; Yugoslavia; Turkey, Afghanistan (Leonardi, 1973a); USSR (Armenia, Tadzhik) (Khnzorian, 1968); Iraq; Israel (new); Egypt (new - USNM); Libya (Heikertinger et al., 1940). IT/Cir-Med/Er.; probably completely Circ-Med. with Er. extensions and throughout C. Asia to Middle East.

Israel: M.H.; G.H.; U.G.; L.G.; S.; J.V.; C.C.P.; J.D.; D.S.; A.V.; N.N.; S.M.





Figs. 10-17. *Longitarsus* species. 10-11 *L. eminus* n.sp. 10a-b - aedeagus (Elon, U.G.); 11 - spermatheca (Syria, Aleppo - MF). 12-13 *L. eminus* Warchalowski. 12a-b - aedeagus (Wadi Tala, S.M.); 13 - spermatheca (ibid.). 14-15 *L. obliteratoides* Gruev. 14a-b - aedeagus (no scale or data given, from Gruev, 1973); 15 - spermatheca (redrawn from Gruev, 1973). 16-17 *L. obliteratus* Rosenhauer. 16a-b - aedeagus (no scale or data given, from Gruev, 1973); 17 - spermatheca (Mt. Hermon, 1200m, U.G.).



*Host*

Recorded: *Cynoglossum* (Doguet, 1976b)

Israel: *Echium rauwolffi* (Negev); *E. longifolium*; *E. judaicum*; *Anchusa strigosa*; *A. hybrida*; *A. milleri* (Sinai); *Brunnera orientalis*; From 9 Jan. to 28 April (G.H.).

*Longitarsus emarginatus* Weise*Zoogeography*

Range: Israel; Jordan (new-MM). Endemic E. Med.; probably in Lebanon and Syria.

Israel: S.C.P.; J.F.; J.H. throughout to G.H.; and M.H.

*Host*

No previous record; in Israel on: *Echum judaicum* (primary); *E. angustifolium*; *Anchusa strigosa*; *A. hybrida*; *Erodium* spp. (= allotrophy). From 16 Nov. to 26 March.

*Longitarsus eminus* n. sp. (Figs. 10a-b, 11)

*Antennae*. Brown or light brown, apically slightly darker. Proportions: segment 2 swollen and longer than 3; 2 approximately subequal to 4 and 6 (5 often slightly longer) or also subequal to 2, 4, and 6 (in *obliteratus* and *eminus* 2 is distinctly shorter than 4-6). Male: 11-8-11-11-11. Female: 10-8-11-12-11.

*Head*. Frons and vertex metallic (sometimes with slight metallic bronze reflection); nasal carina broadly raised, not sharply keeled; clypeus, especially laterally, usually noticeably lighter (= brown or orange); labrum black or dark brown; impunctate, but often one eye-pit puncture from each side extended mesally; frontal bossae distinct; distinctly impressed dorsal frontal lines (dorsal frontal lines more impressed than in *eminus* but less than in *obliteratus*).

*Pronotum*. Usually metallic black often with bronze reflection (sometimes without evident metallic reflection); punctation very shallow and moderately dense, but often not singly distinct, thus surface appearing weakly rugose; texture extremely finely



shagreened, often apparently smooth; shape subrectangular; lateral margins subparallel, only slightly rounded; bristle pore area short, only slightly thickened and projecting.

*Elytra*. Metallic black, sometimes with bronze reflection; punctation very shallow (coarser and more distinct than pronotum), dense, confused (unlike striate or semi-striate punctation in *obliteratus* and *eminus*); slight rugose appearance due to weak and merging punctures; texture apparently smooth; shape oval (not elongate and subparallel-sided as in *obliteratus* and *eminus*); no evident humeral calli (= micropterous); lateral margins broadly rounded especially apically; basally no wider than base of pronotum.

*Legs*. Fore and mid tibiae light brown to yellow; fore and mid femora often slightly darker brown; metatibiae somewhat darker brown but lighter than metafemora; metatibiae with prominent apical spine; male first foretarsal segment not evidently swollen.

*Genitalia*. Male Fig. 10a-b. Female Fig. 11.

Measurements. Male: Lb = 1.61-1.93; Le = 1.11-1.30; Lp = 0.38-0.44; Wp = 0.51-0.57; Weh = 0.47-0.52; Wem = 0.90-0.94. Female: Lb = 1.68-1.78; Le = 1.19-1.30; Lp = 0.41; Wp = 0.53-0.55; Weh = 0.50-0.54; Wem = 0.92-1.0.

*Zoogeography*. Israel; Lebanon; Syria. E. Med.; in Israel (U.G.) probably also in M.H. and G.H.

*Host*. *Phlomis viscosa*; ? *Prasium majus*.

*Discussion*. This new species is closest to *obliteratoides* Gruev from S. Europe as well as similar to *obliteratus* and *eminus* of the Israeli fauna; *eminatus* is best separated from these other three by genitalic morphology (Figs. 12-17). It is also somewhat similar to *salviae* Gruev from S. Europe (Spain to Bulgaria - Gruev, 1973) but *eminatus* differs in its oval shape, weak and confused elytral punctation, and genitalia (see Gruev, 1973, Figs. 1c-d, 2b). *L. eminatus* differs from its closest apparent relative *obliteratoides* by having: more oval elytral shape; shallower pronotal and elytral punctation; male first foretarsal segment swollen; more deeply impressed dorsal frontal lines; more distinctly shagreened frons (*obliteratoides* frons almost alutaceous or smooth); and most importantly a different spermathecal duct coiling pattern.



The name *eminatus* is a combination of the names of its two closest relatives in the Israeli fauna; *eminus* and *obliteratus*.

MATERIAL EXAMINED. Holotype ♂, Israel, Elon, U.G., 17 I 1979 (Fig. 10a-b) (TAU). Allotype ♀, same data as holotype (TAU). Paratypes: ♀, same data as holotype (DF); 2 ♂♂, Israel, Mt. Meron, 1200m, U.G., 26 x 1977 (DF); 2 ♂♂, Israel, Nachal Keziv, U.G., 4 IV 1978 (DF); ♀, Lebanon, Hasrun, 1500m, 19 IV 1935, W. Wittmer (MM); ♂, Lebanon, Conv. Liban, Fl. Lycos, U. Sahlberg, 2568 (MF); ♀, "Syrie" (F. Jean Louis, No. 320, (MP-Pic); ♂, ♀, "Syrie," (?) Fareithus, (F. Florien), No. 76, (MP-Pic); ♂, 2 ♀♀, Syria, Aleppo, coll. Plason (MF).

*Longitarsus eminus* Warchalowski

*Zoogeography*

Range: Iran (Warchalowski, 1973); Afghanistan; Israel (new). IT. This Sinai population is a highly disjunct population of *eminus*. A detailed examination and comparison of this Sinai population with those in Iran and Afghanistan should be made in order to be certain of its status. This is the only example in *Longitarsus* or all Alticinae that demonstrates an affinity to the Irano-Turanian element in the southern deserts of Israel.

Israel (Sinai): S.M.

*Host*

Recorded: *Mentha* (Warchalowski, 1967)

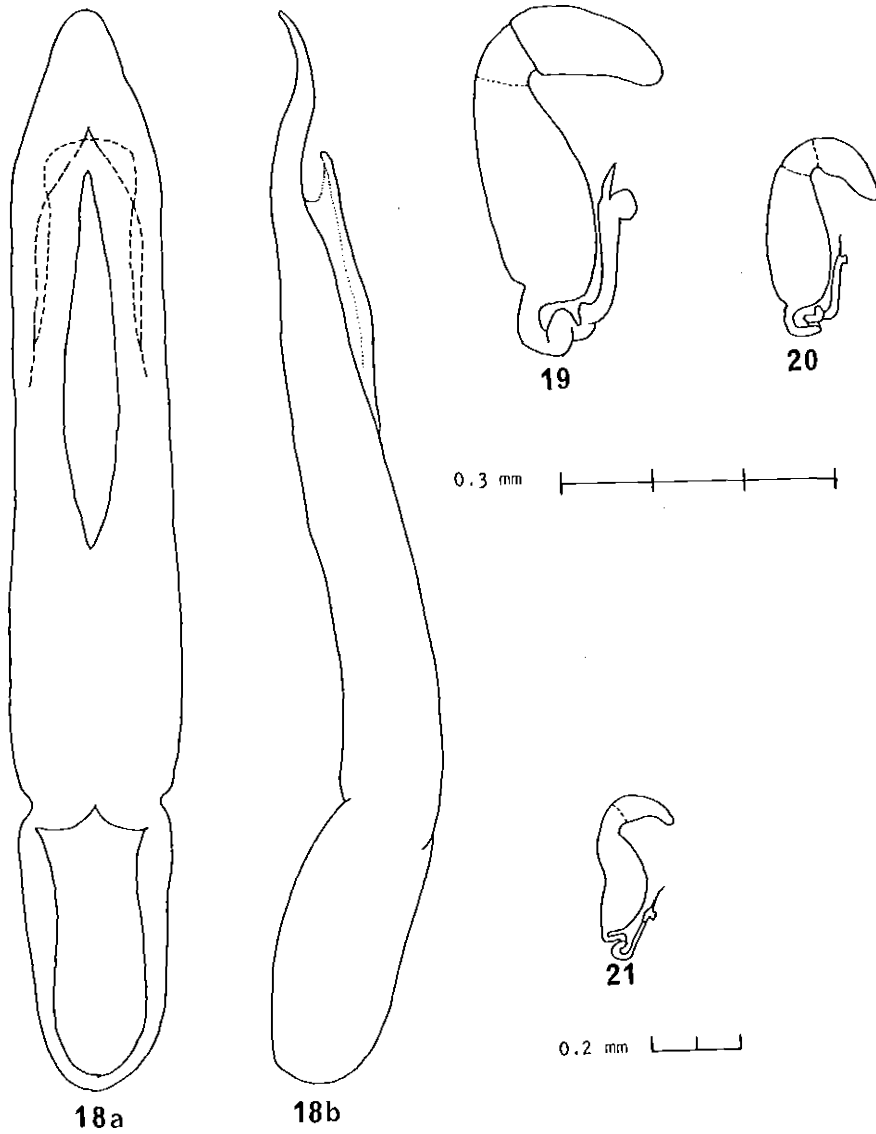
Israel: *Mentha longifolia* *lavandulaceae*. From 25 March to 17 July and 6 Nov. to 4 Dec.; probably present all months but peak season in Nov.-Dec.

*Longitarsus fuscoaeneus* Redtenbacher

*Zoogeography*

Range: C. and E. Europe; Italy; Poland (Warchalowski, 1967); Balkans; Turkey; USSR (Russia); USSR (Uzbek), Iran (Warchalowski, 1967); Syria; Israel; Jordan (new-MV). E. Med./ES, extension into IT; probably in Lebanon.





Figs. 18-21. *Longitarsus* species. 18-19 *L. hermonensis* n.sp. 18a-b - aedeagus (Mt. Hermon, 1600m); 19 - spermatheca (ibid.). 20 - *L. foudrasi* Weise, spermatheca (Italy, Rome) (from Leonardi, 1972). 21 - *L. nigrofasciatus* (Goeze), spermatheca (Italy, Prosecco) (from Leonardi, 1972).



Israel: S.C.P.; J.F.; J.H.; throughout to G.H. and M.H.

*Host*

Recorded: Buysson (1907): *Cynoglossum officinale*; *Echium vulgare*; *Lithospermum arvense*.

Israel: *Echium judaicum*; *E. glomeratum*; *E. angustifolium*; *Anchusa aegyptiaca*; *A. strigosa*; *A. hybrida*; *Cynoglossum creticum*; *Alkanna strigosa*. From 8 Dec. to 2 March.

*Longitarsus gracilis* Kutschera

*Zoogeography*

Range: Europe west to England, north to Denmark, east to Poland, South to Italy and Greece (Heikertinger *et al.*, 1940); Israel (new); Algeria. ES/Circ-Med.; probably in Jordan, Syria, Lebanon, and Turkey; possibly absent in the arid Med. coastal countries of most of N. Africa.

Israel: U.G.

*Host*

Recorded: Jolivet (1967); *Tussilago farfara*; *Senecio* (5); *Petasites*.

Israel: unknown. From 20 June to 17 Oct.

*Longitarsus hermonensis* n. sp. (Figs. 18a-b, 19)

*Antennae*. Usually uniformly light brown to brown, sometimes gradually darker apically. Proportions: segments 2 and 3 subequal and smallest, 2 often evidently shorter; 4, 5, and 6 subequal and distinctly longer than 2 and 3. Male: 11-12-20-21-20. Female: 12-14-20-22-20.

*Head*. Brown or ferrugineous; impunctate; texture smooth; no indications of frontal bossae; nasal carina broad and flat; labrum darkened.

*Pronotum*. Light to dark brown often with mottled appearance (= two or more color tones), usually evidently lighter than head and darker than elytra. Punctuation extremely fine and shallow (weak), sparse, confused, sometimes appearing impunctate;



texture smooth. Shape subrectangular; lateral margins broadly and evenly rounded; bristle pore area somewhat thickened, but not angled or projecting.

*Elytra*. Light brown or yellow often with granulated appearance, distinctly lighter than head and pronotum. Punctation extremely fine, shallow (weak), sparse, confused; often appearing impunctate, especially apically; texture smooth. Shape broadly elongate-oval, lateral margins broadly rounded; humeral calli weak and rounded (= brachypterous).

*Legs*. Fore and mid legs with tibiae lighter brown than femora, hind legs with femur dark brown and tibia brown or ferrugineous (femora and tibia darker than in fore and mid legs); male first foretarsal segment swollen; metatibia with distinct dorsal carina, especially basally, and with prominent apical spine.

*Venter*. Dark brown; male apical sternite without depression, but with median apical lobe sometimes with a tiny round depression.

*Genitalia*. Male Fig. 18a-b. Female Fig. 19.

*Measurements*. Male: Lb = 2.45-2.64; Le = 1.87-2.00; Lp = 0.57-0.63; Wp = 0.82-0.88; Weh = 1.08-1.10; Wem = 1.38-1.43. Female: Lb = 2.67-2.80; Le = 2.03-2.10; Lp = 0.64-0.65; Wp = 0.89-0.90; Weh = 1.10-1.12; Wem = 1.50-1.53.

*Zoogeography*. Israel: Mt. Hermon, 1600m. ES; probably in Syria, Lebanon, and possibly Jordan.

*Host*. *Verbascum* sp.

*Discussion*. This species is very similar in morphology and host plant to *foudrasi* Weise from middle and southern Europe and somewhat less similar to *nigrofasciatus* (Goeze) in Israel. In comparison with *hermonensis*, *nigrofasciatus* has coarser and usually striate elytral punctures and quite a different spermatheca (Fig. 21). Relative to *hermonensis*, *foudrasi* males have: no swelling of the first foretarsal segment; aedeagus (in ventral view) apically more narrowly pointed and attenuated and central furrow shallower, more parallel-sided and not strongly tapered at its ends (see Mohr, 1966), and in lateral view less strongly undulate apically. The most significant difference between *hermonensis* and *foudrasi* is the coiling of the spermathecal duct which in *foudrasi* (Fig. 20) is the opposite direction from *hermonensis* (Fig. 19).



MATERIAL EXAMINED. ♂ Holotype, Mt. Hermon, 1600m, 20 IX 1979 (Fig. 18a-b) (TAU). ♀ Allotype, same data as holotype (Fig. 19) (TAU). Paratypes: ♂, 4 ♀♀, same data as holotype (DF); 3 ♂♂, 4 ♀♀, Mt. Hermon, 1600m, 27 IX 1972 (♂, ♀ BMNH; others DF); ♂ Mt. Hermon, 1600m, 16 X 1972 (DF); 2 ♂♂, 2 ♀♀, Mt. Hermon, 2000m, 8 VIII 1974, leg. F. Kaplan (♂, ♀- TAU and DF).

*Longitarsus karlheinzi* Warchalowski

*Zoogeography*

Range: SE. Turkey (1000-1600m); Israel (new). IT.; possibly partially E. Med. or ES; probably in mountains of Syria and Lebanon.

Israel: M.H. (1900-2000m).

*Host*

No previous record; in Israel on *Marrubium multiradiatum*. From 20 June to 11 Sept.

*Longitarsus lateripunctatus* Rosenhauer

*Zoogeography*

Range: Mediterranean Islands; S., C., and E. Europe east to Balkans (including Crete); USSR (Crimea); Cyprus; Israel (new); Algeria, Morocco. Circ-Med./ES; probably in Jordan, Syria, Lebanon, and Turkey.

Israel: M.H.; G.H.; U.G.; L.G.; C.; S.; J.V.; J.H.

*Host*

Recorded: Heikertinger (1926): wingless- *Pulmonaria officinale*; winged - *Borago officinalis*. Jolivet (1967): *Cerithe major*; *Borago*.

Israel: *Symphytum palestinum* (primary): *Cynoglossum creticum*. From all months except July and August, but most common from Feb. to May.



*Longitarsus linnaei* (Duftschmid)

## Zoogeography

Range: S., C. Europe; Rumania; Poland; Balearic Isl.; Italy; Balkans; USSR (S. Russia, Crimea, Turcmen, Kazakh); Turkey; Syria; Israel. ES; extensions into IT; probably in Lebanon and Jordan, but not in southern Israel.

Israel: M.H.; U.G.; J.H. (TU).

## Host

Recorded: *Symphytum tuberosum* (Heikertinger, 1925).

Israel: *Symphytum palestinum* (primary); *Brunnera orientalis*.  
From 23 Feb. to 23 May.

*Longitarsus luridus* (Scopoli)

*Thyamis syriaca* Allard, 1866:379, n. syn.

## Zoogeography

Range: all Europe; NW Africa; USSR (Ukraine) (Shapiro et al., 1963); Siberia (Heikertinger et al., 1940); C. Mongolia (Lopatin, 1967); Balkans (Mohr, 1965); Turkey; Iran (Warchalowski, 1973); Iraq (Lopatin, 1967); Cyprus; Syria; Israel; Jordan (new-MV). ES/Circ-Med./IT (Palearctic); probably in all Middle East countries.

Israel: M.H.; G.H.; U.G.; L.G.; C.; Y.V.; S.; J.V.; C.C.P.; S.C.P.; J.F.; J.H.

## Host

Recorded: Heikertinger (1926): *Clematis*; *Ranunculus* (4); oligophagous on Boraginaceae, Labiatae, Compositae; Plantagina-ceae. *Plantago* leaf miners (Mohr, 1966). *Cephalaria* (Peyerimhoff, 1919).

Israel: *Salvia hierosolymitana*; *Majorana syriaca*; *Cephalaria syriaca*; *Plantago* ?*communis* ?*Prasium majus*; *Molucella spinosa*; *Sideritis pullulans*. From 24 Oct. to 26 June.



Synonymy: In the original description of *Thyamis* (= *Longitarsus*) *syriaca* Allard, 1866, p. 379, said that it was close to *luridus* and *castaneus* Duftschmid (= *brunneus* (Duftschmid)) but that the pronotum in *syriaca* was smooth, not shagreened as in *luridus*; however, I find this character to be sometimes variable in *luridus*. I have examined two specimens of *L. syriacus* (MP), formerly in the Weise Collection, from Karnich, "coll. Faust", and they are certainly *luridus*. Also I have examined 7 specimens from the Allard Collection (MP) under the name *syriaca*; 4 apparently from Lebanon are possibly types, but not clearly indicated. All 7 of these (MP) are teneral and/or light colored *luridus*. Allard's original description of *syriacus* is diversified enough that it does not exactly fit any one species known to me. Because I found no evident types in the Paris Museum collections, it is difficult to be absolutely positive of synonymy; however, after my examination of the specimens determined as *Thyamis syriaca* Allard, especially those in the Allard Collections (including the Oberthür-arranged Allard Collection) (MP), I have concluded that *L. syriacus* (Allard) is synonymous with *luridus* (Scopoli).

*Longitarsus lycopi* (Foudras)

*Zoogeography*

Range: all Europe (including Med. Islands), north to S. Scandinavia, east to Balkans; Turkey; USSR (Ukraine) (Shapiro et al., 1963); USSR (S. Russia, Turcmen, Kazakh); ?Japan (Heikertinger et al., 1940); Iran; Turkey; Cyprus (new); Syria; Israel; Jordan (new-MV); Yemen, Chad, Saudi Arabia (Doquet, 1979); Tunisia to Morocco. Circ-Med /ES/IT/Er. (= Palearctic); probably in Lebanon.

Israel: S.C.P.; J.F.; J.H.; J.D.; D.S. throughout to G.H. and M.H.

*Host*

Recorded: Heikertinger (1926): *Mentha* (3); *Lycopus europaeus*.

Israel: *Mentha longifolia* (primary); *Lycopus europaeus*. Recorded in all months of the year, but most common in April-May.

*Longitarsus melanocephalus* (DeGeer)

*Zoogeography*

Range: all Europe; USSR (S. Russia, Kazakh, W. Siberia); Balkans; Turkey (Heikertinger et al., 1940); NE. Iran (Warchalowski, 1973);



Israel (new); Algeria (Heikertinger *et al.*, 1940). ES; probably only in northern Israel and in Jordan, Syria, Lebanon.

Israel: U.G.

*Host*

Recorded: *Plantago* spp. (Mohr, 1966)

Israel: *Plantago lanceolata*. From 4 May.

*Longitarsus membranaceus* (Foudras)

*Zoogeography*

Range: Europe, west to Portugal and England, north to Germany and Hungary; Poland (Warchalowski, 1976); Italy (including Sicily-Leonardi, 1972); Balkans (Mohr, 1965); USSR (Ukraine) (Shapiro *et al.*, 1963); N. Iran (Warchalowski, 1973); Cyprus (new); Israel (new); Balearic and Malta Islands (Jolivet, 1953); Morocco to Tunisia (Jolivet, 1967). Circ-Med/ES; extensions slightly into IT; probably in Jordan, Syria, and Turkey.

Israel: M.H.; G.H.; U.G.; S.

*Host*

Recorded: *Teucrium* (2) (Mohr, 1962a); *Mentha* (Normand, 1937).

Israel: unknown (?*Teucrium* sp.). From 4 April to 16 Oct.

*Longitarsus mirei* Doguet

*Zoogeography*

Range: Israel (new); Saudi Arabia, Chad. (Doguet, 1979). Er.; probably in Jordan, Egypt, Sudan and possibly Libya.

Israel: A.V.; S.N.

*Host*

No previous record; in Israel on *Echium rauwolfi* and *Anchusa milleri*. From 15 Feb. to 20 April.



*Longitarsus nanus* (Foudras)

## Zoogeography

Range: C. Europe north to France, Germany and Poland (Heikertinger et al., 1940); Med. Europe to Balkans (Greece); Israel (new); Algeria (Jolivet, 1967). Circ-Med./ES; probably throughout central and northern Israel, Jordan, Syria, Lebanon and Turkey.

Israel: M.H.; G.H.; U.G.; L.G.; C.; J.H.; J.D.

## Host

Recorded: Heikertinger (1926); *Teucrium*; *Stachys*. Jolivet (1967): *Brunella*; *Teucrium* (2).

Israel: *Teucrium* ? *polium*; *Marrubium* ? *cuneatum*. From 2 March to 5 June, 10-16 Sept. and 17 Dec.

*Longitarsus nigrilividus* n. sp. (Figs. 22a-b, 23)

**Antennae.** Usually entirely dark brown, rarely only segment 1 very dark and extreme apex of 2 and 3 slightly lighter (not noticeably light brown or yellow as in Israeli *dimidiatus*). Proportions: segments 2 and 3 smallest and subequal, 3 slightly longer, 2 somewhat swollen; 4, 5, and 6 longer and approximately subequal. Male: 11-11-18-17-17. Female: 13-14-19-20-18.

**Head.** Shiny black; impunctate; texture smooth; no distinct bossae, but antero-mesal part of frons evidently raised and with faint indications of dorsal frontal lines (mesally only) (= pseudo-bossae); *dimidiatus* (especially populations from G.H.) often has single shallow puncture dorso-laterad to these pseudo-bossae; nasal carina raised and narrowly keeled.

**Pronotum.** Shiny black; texture smooth; punctation fine to very fine, sparse and shallow, distinctly finer and sparser than in elytra; *dimidiatus* punctation of pronotum fine to medium and coarser than *nigrilividus*, but relative to elytral punctation, *dimidiatus* pronotal punctation also finer and sparser; shape sub-rectangular; lateral margins evenly and slightly rounded; bristle pore area not very thickened or projecting.

**Elytra.** Shiny black (blue-black appearance when alive); texture smooth; punctation medium, moderately dense, confused; punctures



fading (shallower) in apical  $\frac{1}{4}$ , thus apparently smooth or punctures vague and indistinct; *dimidiatus* punctures also fading, but usually some distinct at apex; shape elongate-oval, apically broadly rounded; most populations known with strong, projecting humeral calli (= macropterous), but one population (Kfar Tavor) with weak and rounded calli (= brachypterous).

*Legs.* Fore and mid femora very dark brown or black with extreme apex lighter; fore and mid tibiae dark brown (often lighter than femora) in middle but lighter brown at extremes (base and apex); hind leg entirely dark brown or black, sometimes extreme apex of tibia light brown; all tarsi light brown or yellow; *dimidiatus* (especially Israeli populations) with all tibiae (often fore and mid femora) light brown or yellow; male first foretarsal segment noticeably swollen; metatibiae with dorsal carina basally distinct, in dorsal view outwardly bent, in lateral view proximal apical extreme triangularly enlarged, apical spine large and prominent. *Venter.* Shiny black; male apical sternite without depression.

*Genitalia.* Male Fig. 22a-b Female Fig. 23. See figures 24a-b, 25 of *dimidiatus* for comparisons.

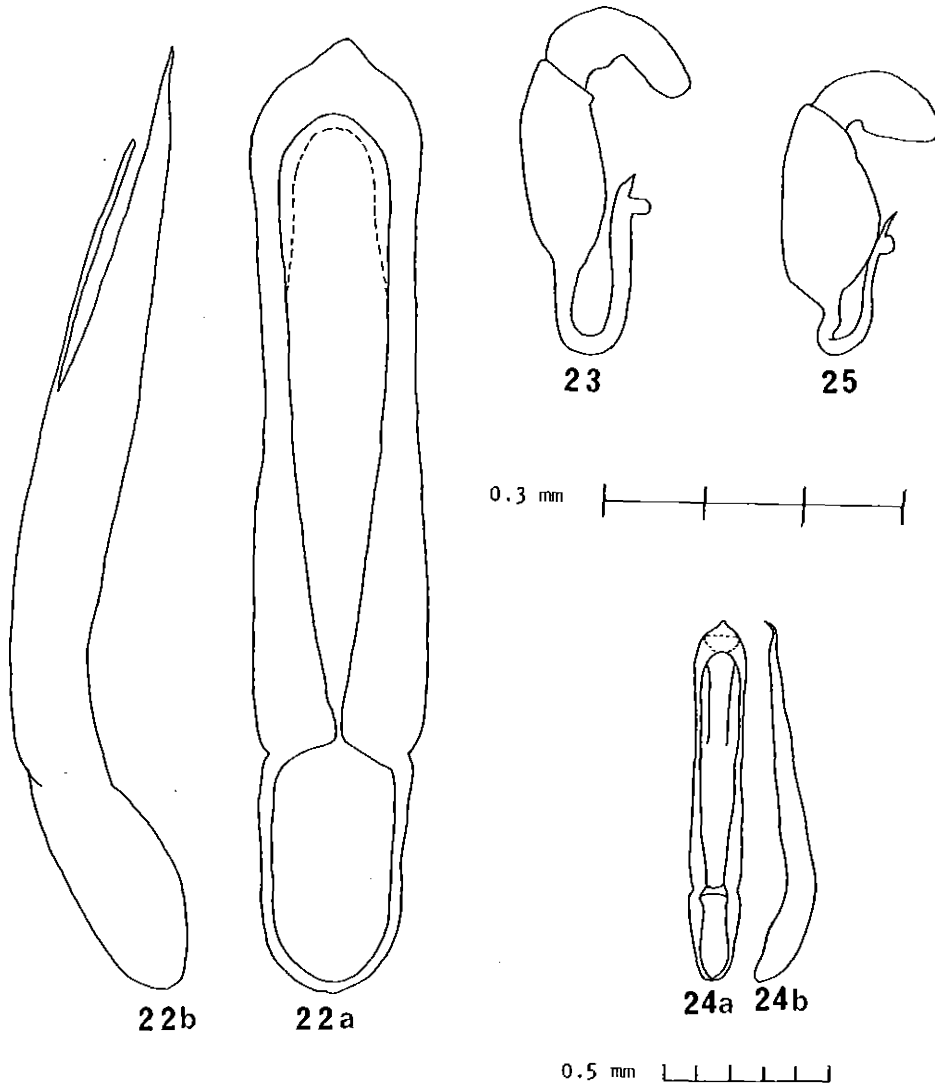
*Measurements.* Male: Lb = 1.96-2.53; Le = 1.51-1.92; Lp = 0.49-0.59; Wp = 0.63-0.74; Weh = 0.86-1.02; Wem = 1.00-1.34. Female: Lb = 2.56-2.90; Le = 1.85-2.15; Lp = 0.56-0.67; Wp = 0.72-0.82; Weh = 1.00-1.10; Wem = 1.21-1.46.

*Zoogeography.* Israel: M.H.; G.H.; U.G.; L.G.; Y.V.; J.V.; S. E. Med.; probably in Syria, Jordan, and Lebanon.

*Host.* *Echium longifolium*; *E. glomeratum*; *E. judaecum*; *Anchusa strigosa*; *A. aegyptiaca*. Species of *Echium* are the primary hosts.

*Discussion.* This species is closest to *dimidiatus* (Allard) also in the Israeli fauna. Overall color is a good separating trait, especially in fresh specimens; although color generally is not completely reliable or constant in many insect groups. Specimens of *dimidiatus* are distinctly metallic bronze all over and *nigrilividus* is entirely shiny black (not metallic). I have examined *dimidiatus* specimens from 1922 which still retain this distinctive color. The best differences between these probably siblings species is the consistent difference in the female spermatheca (Figs. 23, 25). No ecological differences are evident at present. I have collected them together at the same time on adjacent plants of the same species. The name "nigrilividus" means black-blue or black/blue-black which is the appearance of these beetles when alive.





Figs. 22-25. *Longitarsus* species. 22-23 *L. nigrilividus* n.sp. 22a-b - aedeagus (Gesher, J.V.); 23 - spermatheca (N. Tut, S.). 24-25 *L. dimidiatus* (Allard). 24a-b - aedeagus (Italy, Riano) (from Leonardi, 1973a); 25 - spermatheca (N. Hiyon, A.V.).

MATERIAL EXAMINED. Holotype ♂, Qusbiye, G.H., 16 I 1979 (TAU). Allotype ♀, same data as holotype (TAU). Paratypes: 67 ♂♂, 50 ♀♀, same as holotype (at least a ♂ and ♀ will be distributed to most of the collections mentioned in Acknowledgements section); 23 ♂♂, 14 ♀♀, Kfar Nafekh, G.H., 16 I 1979 (DF); 4 ♂♂, 10 ♀♀, Qusbiye,



9 I 1978 (DF); 2 ♂♂, 3 ♀♀, Qusbiye, 31 I 1978 (♂ and ♀ MM: ♂, 2 ♀♀ DF); ♀, Qusbiye, 13 XII 1979 (DF); 2 ♂♂, ♀, Newe Ativ, M.H., 16 I 1979 (DF); ♂, Nachal Bezet, U.G., 17 I 1979 (DF); 3 ♂♂, ♀, Nachal Amud, U.G., 23 II 1978 (DF); ♀, Nazareth, L.G., 2 III 1979 (DF); ♂, Nurit, Y.V. 15 II 1979 (DF); ♂, ♀, Kfar Tavor, Y.V., 14 II 1978 (DF); 3 ♂♂, 2 ♀♀, Geshet, J.V., 31 I 1978 (DF); ♂, ♀, Ein Gev, J.V., 15 I 1979 (DF); 6 ♂♂, 4 ♀♀, Nachal Tut, S., 2 III 1979 (DF).

*Longitarsus nigrofasciatus* (Goeze)

*Zoogeography*

Range: C. and S. Europe (including Islands) west and north to England, France, Germany, east to Poland; Balkans; Turkey; USSR (S. Russia, Kazakh); USSR (Ukraine) (Shapiro et al., 1963); Iran (Warchalowski, 1973); Jordan (new-MV); Israel; Algeria; Morocco and Tunisia (Jolivet, 1967); Canary and Madeira Islands (Heikertinger et al., 1940). Circ-Med./ES/IT/Er. (= Palearctic); probably across N. Africa to Israel and all Middle East countries to Afghanistan and S.C. USSR.

Israel: Recorded in all regions, except D.S., A.V., S.S.

*Host*

Recorded: Heikertinger (1914, 1926); *Verbascum* (ca. 12) in Europe; *Scrophularia* (5) in S. Europe.

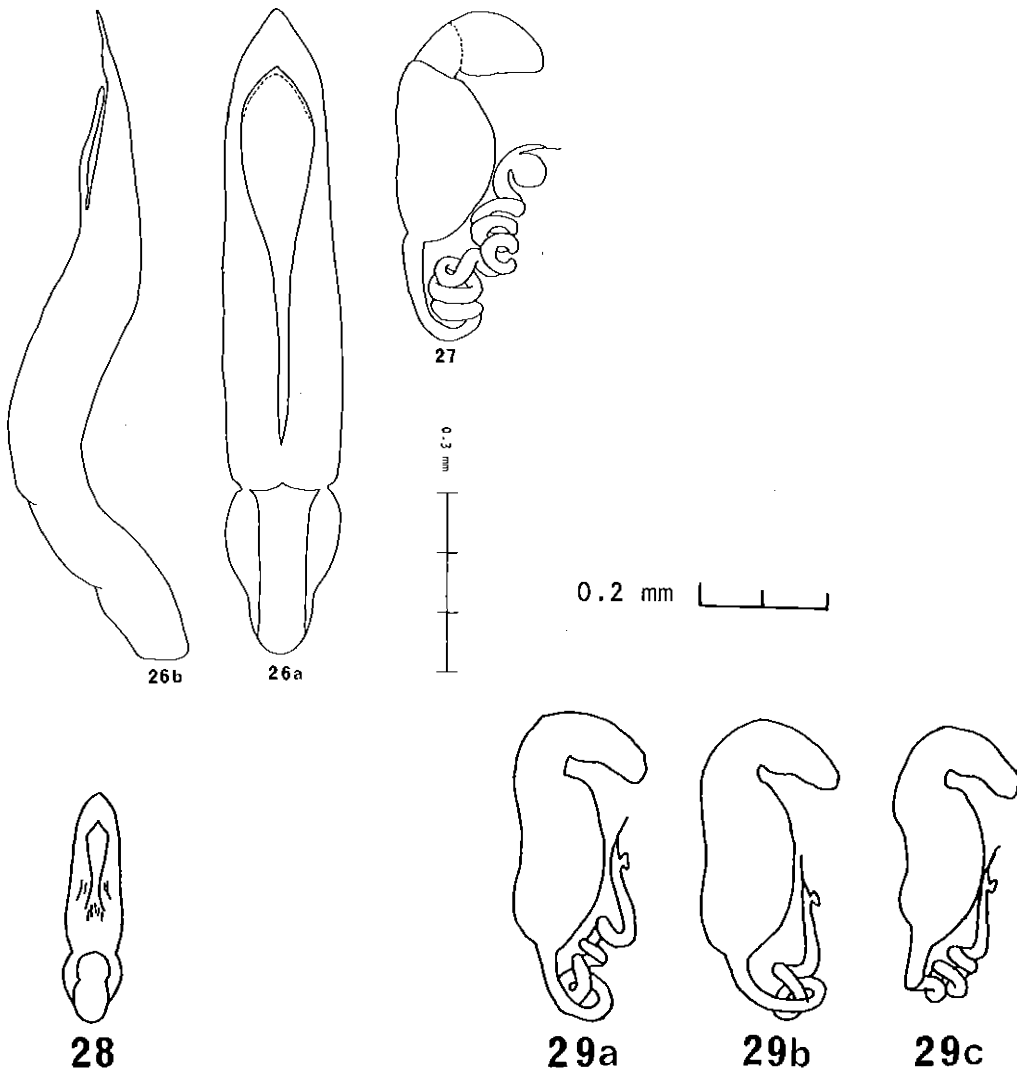
Israel: *Verbascum galilaeum* and other species throughout Israel (primary host); *Scrophularia mishoniana* and a few other species. Recorded in all months, but most common in spring.

*Longitarsus nimrodi* n. sp. (Figs. 26a-b, 27)

*Antennae*. Entirely light brown or yellow, not apically darkened. Proportions: segments 2 and 3 approximately subequal but 3 longer, distinctly so in males; 3, 4, and 5 approximately subequal but distinctly longer than 2 and 3; in females 5 evidently slightly longer than 4 or 6; in males 4-6 gradually increasing in length. Male: 11-15-21-23-25. Female: 13-15-18-22-20.

*Head*. Brown or slightly reddish brown; impunctate; texture smooth or finely alutaceous (not shagreened); no indications of frontal bossae; nasal carina narrowly keeled and raised; labrum dark brown or black.





Figs. 26-29. *Longitarsus* species. 26-27 *L. nimrodi* n.sp. 26a-b - aedeagus (Mt. Hermon, 800m); 27 - spermatheca (ibid.). 28-29 *L. pulmonariae* Weise. 28 - aedeagus (no scale or data given, from Mohr, 1962b); 29a-c spermathecae (from Leonardi, 1972) (a&b - W. Germany, Starnberg; c - W. Germany, Teschen).

*Pronotum*. Brown or reddish brown (as in head); punctation very fine, shallow, sparse; texture extremely finely shagreened, often apparently smooth; shape subquadrate, only a little wider than long (see measurements) lateral margins gradually rounded; bristle pore area not much thickened or projecting.



*Elytra*. Light brown to brown, often evidently lighter than head and pronotum; punctation extremely or very fine, often less evident than pronotal punctation; texture smooth; shape elongate-oval (especially oval); lateral margins gradually rounded; humeral calli absent or weak and rounded (= micropterous).

*Legs*. Usually uniformly light brown to brown, often fore legs (femora and tibiae) somewhat lighter than hind legs, no distinct difference between metafemur and metatibia; male first foretarsal segment not evidently swollen; metatibiae slightly bent outwards, with prominent (but not long) apical spine, without dorsal carina.

*Venter*. Color approximately as in elytra, sometimes slightly darker brown; male apical sternite with median apical lobe containing a tiny round evident depression.

*Genitalia*. Male Fig. 26a-b. Female Fig. 27.

*Measurements*. Male: Lb = 2.25-2.55; Le = 1.65-1.85; Lp = 0.55-0.57; Wp = 0.72-0.84; Weh = 0.85-1.05; Wem = 1.09-1.43. Female: Lb = 2.25-2.83; Le = 1.70-2.05; Lp = 0.55-0.74; Wp = 0.72-0.94; Weh = 0.86-1.12; Wem = 1.17-1.50.

*Zoogeography*. Israel: Mt. Hermon, 800m. ES, possibly somewhat IT; probably in Syria and Lebanon.

*Host*. *Symphytum palestinum*.

*Discussion*. *L. nimrodi* is most closely related to *pulmonariae* Weise, *exoletus* (L.), and *nervosus* (Wollaston) based on their subquadrate pronotum, but especially because of the female spermathecae. It is closest to *pulmonariae* based on the rather weak character of uniform light brown antennal color but more significantly related through spermatheca and aedeagus form and host plant. It differs from *pulmonariae* by having: very fine elytral punctation as opposed to the coarse elytral punctures of *pulmonariae*; uniformly colored metafemora rather than the dorso-apically darkened metafemora of *pulmonariae*; and by a significantly more coiled spermathecal duct. Leonardi (1972) has shown the range of variation of the spermathecal duct coiling in *pulmonariae* (Figs. 29a-c); however, *nimrodi* seems to me beyond this variation. The aedeagus of *nimrodi* is ventrally similar to *pulmonariae* (Figs 26a-b and 28, respectively), but in lateral view that of *nimrodi* is extremely bent. *L. pulmonariae* is apparently an ES species distributed in central and southern Europe



(Heikertinger *et al.*, 1940), southeast to the Balkan Peninsula (Gruev, 1979 and Warchalowski, 1974). Leonardi (*in litt.*, 1980) will describe a probable new subspecies from the Balkans and Hungary. This new species *nimrodi* is probably a sibling of *pulmonariae* also being an ES element and with *Symphytum* as a host.

This new species is named for the namesake of the type locality Nimrod Castle, a Crusader castle overlooking the Huleh Valley and the sources of the Jordan River, named after the biblical hunter Nimrod.

MATERIAL EXAMINED. Holotype ♂, Mt. Hermon, 800m, 14 VI 1978 (TAU). Allotype ♀, same data as holotype (TAU). Paratypes: 7 ♂♂, 6 ♀♀, same data as holotype (DF).

*Longitarsus obliteratus* Rosenhauer

*Zoogeography*

Range: C. and S. Europe to S. England, east to Greece; Turkey; USSR (S. Russia, Kazakh); USSR (Ukraine) (Shapiro *et al.*, 1963); Afghanistan (Lopatin, 1963); N. Iran (Warchalowski, 1973); Syria; Israel; Jordan (new-MV); Algeria; Morocco. Circ-Med./IT/ES (= Palearctic); probably throughout Israel and surrounding countries.

Israel: M.H.; U.G.; L.G.; C.; S.; J.V.; C.C.P.; J.F.; J.H.; D.S.

*Host*

Recorded: Mohr (1966): *Salvia*; *Thymus*. Jolivet (1967): *Salvia* (3); *Thymus* (2); *Satureia*; *Origanum*; *Calamintha*; *Brunella*; *Melissa*.

Israel: *Salvia hierosolymitana*; *S. judaica*; *Salvia* sp. Recorded all months of the year.

*Longitarsus parvulus* (Paykull)

*Zoogeography*

Range: S. Europe, southeast to Bulgaria and Greece; Turkey, USSR (S. Russia), ? Japan (Heikertinger *et al.*, 1940); Israel; N. Africa. Circ-Med./ES; probably in northern Israel, Syria, and Lebanon.



Israel: C.

Host

Recorded: pest on *Linum usitatissimum* (flax) (Mohr, 1966);  
*Linum* (4) (Jolivet, 1967).

Israel: unknown, but probably on *Linum*. From 4-9 May.

*Longitarsus pellucidus* (Foudras)

Zoogeography

Range: all Europe north to Sweden (Heikertinger *et al.*, 1940), east to Balkans; Poland (Warchalowski, 1976); USSR (S. Russia, Kazakh); Mongolia (Král, 1973); Afghanistan (Lopatin, 1963); Turkey; Iran; Syria; Cyprus; Israel; Jordan (new-MV); Morocco to Tunisia (Jolivet, 1967); W. Med. Islands and Madeira (Jolivet, 1953). ES/IT/Circ-Med.(= Palearctic); probably in all central and north Israel, Lebanon, Egypt, and Libya.

Israel: M.H.; G.H.; U.G.; L.G.; C.; S.; J.V.; N.C.P.; C.C.P.; S.C.P.; J.H.

Host

Recorded: *Convolvulus arvensis* (Heikertinger, 1926; Mohr, 1966); Jolivet (1967): *Convolvulus* (2); *Calystegia* (2); *Ipomoea batatas*.

Israel: *Convolvulus tachydifolius*. From 30 April to 25 Oct. and 1 Dec.

*Longitarsus pratensis* (Panzer)

Zoogeography

Range: all Europe to Balkans; Turkey; USSR (S. Russia, Kazakh, Siberia); Afghanistan; N. Iran (Warchalowski, 1973); "Syria" (=Israel), N. Africa, and Canary Isl. (Heikertinger *et al.*, 1940). ES/Circ-Med., with extension into IT; probably throughout central and northern Israel, Syria, Lebanon, Turkey, and possibly in Jordan.

Israel: M.H.; U.G.; S.; C.C.P. (see Furth, 1979a)



*Host*

Recorded: Heikertinger (1926): *Plantago major*; *P. lanceolata*; *P. maritima*.

Israel: *Plantago lanceolata*. From 5 Nov. to 4 May.

*Longitarsus punctiger* Sahlberg*Zoogeography*

Range: Israel; Jordan (new-MV). Endemic E. Med.; probably Syria and possibly Lebanon.

Israel: J.V.; J.D.

*Host*

No previous record; in Israel on *Anchusa strigosa*, *A. aegyptiaca*, *Echium judaicum*. *Alkanna strigosa*. From 7 Dec. to 19 March.

*Longitarsus rectilineatus* (Foudras)

*Longitarsus spilotus* Weise, 1900:294, n. syn.

*Zoogeography*

Range: ?Spain and France (Heikertinger et al., 1940); Italy; Austria; Switzerland, Hungary and Czechoslovakia (Mohr, 1962a); Poland (Warchalowski, 1976); Yugoslavia (Mohr, 1965); Bulgaria; Turkey and USSR (Georgia) (Gruev and Král, 1976); USSR (Caucasus, Turcmen, Kazakh); N. Iran; NE. and E. Afghanistan (Lopatin, 1963); Syria; Cyprus; Israel (new); Algeria. IT/ES/Circ-Med.; probably also in Jordan and Lebanon.

Synonymy: Gruev and Král (1975) have considered *spilotus* to be an eastern subspecies; however, this seems uncertain to me because of near geographical overlap of these two subspecies and weak morphological differences. I am considering them here as conspecific entities (synonymous).

Israel: M.H.; U.G.; L.G.; C.; S.; J.V.; C.C.P.; S.C.P.; J.F.; J.H.



*Host*

No previous record; one series by sweeping *Majorana syriaca*. Recorded all months except Sept., but most common in May and June.

*Longitarsus stragulatus* (Foudras)*Zoogeography*

Range: ?Spain (Heikertinger et al., 1940); Italy (Sardinia, Sicily); Malta; Morocco to Tunisia; Libya (Jolivet, 1967); Egypt (new-CNHM); Israel; Jordan (Mohr, 1962b). W. Med./E. Med.; possibly Circ-Med. but not yet recorded in mediterranean Europe or Balkans (Mohr, 1965; Gruev, 1979). Probably extending across N. Africa to the northern Sinai and Negev deserts and throughout central and northern Israel, possibly to Lebanon and Syria.

Israel: G.H.; S.; J.V.; C.C.P.; S.C.P.; J.H.; C.N.

*Host*

Recorded: Jolivet (1967): *Senecio* (2); *Hertia* (= *Othonnopsis*)

Israel: unknown; but some indication of *Senecio*. From 1 Dec. to 12 March.

*Longitarsus succineus* (Foudras)*Zoogeography*

Range: all Europe; Balkans (Mohr, 1965); Turkey; Iran (new-MV); USSR (S. Russia); Japan, Canada, (Leonardi, 1976); Korea (Jolivet, 1973); N. Vietnam (Warchalowski, 1970); C. Asia, USSR (Siberia) (Heikertinger et al., 1940); Israel (new); Algeria (Leonardi, 1976). ES/IT/Circ-Med. and E.N. America (= Holarctic); probably in northern Israel only, Lebanon and Syria.

Israel: U.G.

*Host*

Recorded: Compositae: Mohr (1966): *Eupatorium*; *Chrysanthemum*; *Achillea*; *Artemisia*. Jolivet (1967): *Leucanthemum*; *Senecio*;



*Asteriscus; Anthemis*. Also from other families (Heikertinger, 1926): *Convolvulus; Symphytum; Salvia; Thymus; Plantago*.

Israel: ?*Symphytum palestinum*. From 30 April to 5 May.

*Longitarsus suturalis* (Marsham)

Zoogeography

Range: C. and S. Europe west to England, north to S. Scandinavia, Germany. Czechoslovakia; Rumania; Poland (Warchalowski, 1976); USSR (Ukraine) (Shapiro *et al.*, 1963); USSR (Crimea, S. Russia, Turcmen, Kazakh); Balkans; Turkey; Iran (Warchalowski, 1973); Iraq; Afghanistan-2500m (Lopatin, 1963); ?Korea (Heikertinger *et al.*, 1940); Syria; Lebanon (new-MP); Israel (new); Algeria; Morocco (Jolivet, 1967); Balearic Isl. (Jolivet, 1953). ES/IT/Circ-Med. (= Palearctic); probably in Syria and possibly in Jordan.

Israel: M.H.; G.H.; U.G.

Host

Recorded: Jolivet (1967): *Lithospermum officinale; Symphytum officinale. Verbascum* (Porta, 1934).

Israel: unknown; found on *Phlomis brevilabris* (post-season) with some minor feeding. From 17 March (U.G.) to 25 Oct.

*Longitarsus tabidus* (Fabricius)

Zoogeography

Range: all Europe east to Balkans; Turkey; Cyprus (Georghiou, 1977); and USSR (S. Russia, Kazakh): USSR (Ukraine) (Shapiro *et al.*, 1963); Japan (Warchalowski, 1970); Afghanistan - 1740m (Lopatin, 1963); Israel (new); Morocco to Tunisia. ES/IT/Circ-Med. (= Palearctic); probably throughout the Middle East to USSR, possibly across N. Africa.

Israel: M.G.; U.G.; L.G.; C.; Y.V.; C.C.P.



*Host*

Recorded: *Verbascum* (7) (Jolivet, 1967)

Israel: *Verbascum galilaeum*; V. 2 spp. Recorded in all months of year except January but most common in Sept.-Oct.

*Longitarsus truncatellus* Weise*Zoogeography*

Range: Greece; Turkey; Israel; Jordan (new-WC), E. Med.; probably in Syria and Lebanon.

Israel: M.H. (800-1700m) and all north and central provinces south to S.C.P., J.F., J.H., J.D., and N.N.; not yet found in D.S.

*Host*

No previous record; in Israel on: *Cynoglossum creticum* (primary); *Echium glomeratum* (primary); *E. judaicum*; *E. angustifolium*; *Anchusa strigosa*; *A. azurea*; *A. hybrida*; *Brunnera orientalis*; *Symphytum palestinum*.

Status: There is still some question as to the status of *truncatellus* Weise (1890) and *pinguis* Weise (1888). I have previously considered these as synonymous (Furth, 1976- unpublished data) based on examination of the apparent type series of *pinguis* in the Weise Collection (MH). However, this series was clearly a mixture of two or more taxa, including specimens from Haifa (=Israel) that are considered as *truncatellus* here. Two cotypes (MH), from Lugano, Italy, were clearly another species and Leonardi (*in litt.*, 1976) says that two other cotypes from Lugano (MF) are *pinguis* (*sensu* Müller, 1953; Mohr, 1962b, 1966; Gruev, 1973; and Leonardi, 1973). Leonardi (*in litt.*, 1976, 1977, 1979, 1980) mentions a possible form of *pinguis* or of *truncatellus* from the Appennine (Italy) and Caucasus mountain ranges that have slight variations in dorsal and lateral shape as well as dorsal and lateral view aedeagus form.

The *truncatellus* (*sensu meo*) from Israel and Jordan (WC) belongs to the same taxa as specimens that I have examined collected by J. Sahlberg in Turkey (Smyrna = Izmir) (TU, UH) and Greece (Corfu - UH). The type locality of *truncatellus* is Greece



(Athens and Nauplia, Weise, 1890); therefore, *truncatellus* is an E. Med. element. The taxa considered as *pinguis* (*sensu* Leonardi, Müller, Mohr, etc.) and the Apennine-Caucasus form of *pinguis* or *truncatellus* (*sensu* Leonardi) are apparently ES elements. Several possibilities exist: there are two forms or subspecies of *truncatellus* (the ES element and the E. Med. element) as indicated by Leonardi descriptions (*in litt.*, *loc. cit.*) and my descriptions (Furth, 1976); these two forms are separate taxa, one of which is the true *truncatellus* Weise; *truncatellus* (*sensu* Leonardi) from the Apennines-Caucasus is conspecific with *pinguis* Weise (*sensu* Leonardi and others); all three are separate taxa; or all three are synonymous as previously suggested (Furth, 1976) based on the aedeagus similarity, the single frontal puncture, and dorsal frontal lines of all three.

Until this problem can be studied more carefully, by examination of all cotypes of *pinguis* and location of *truncatellus* types, I will consider *pinguis* and *truncatellus* as separate taxa; the E. Med. element in Israel belonging to *truncatellus*.

*Longitarsus tunetanus* Csiki

*Zoogeography*

Range: Israel (new); Egypt (new-USNM and MF); Tunisia. Er.; probably throughout Negev and Sinai to Egypt and across N. Africa; possibly in Saudi Arabia and Jordan.

Israel: C.N.

*Host*

Recorded: probably a Labiatae feeder (Peyerimhoff, 1925). Unknown in Israel. From 20 Oct. to 22 Nov. (Tunisia and Egypt) and in Israel on 11-12 March.

*Longitarsus* undescribed species A

This species of the *lycopi*-group will soon be described by Dr. C. Leonardi of Milan, Italy (*in litt.*, 1980).

*Zoogeography*

Range: Jordan (MM); Israel E. Med.; possibly in Lebanon and Syria.



Israel: U.G.

*Host*

No previous record. In Israel on: ?*Phlomis viscosa*; *Quercus* (post-season). From 1 June to 26 Oct.

*Longitarsus* undescribed species B

This species near *minusculus* (Foudras) will soon be described by Dr. C. Leonardi of Milan, Italy (*in litt.*, 1980).

*Zoogeography*

Range: Jordan (MM, MV); Israel. E. Med.; probably in Syria, Lebanon and possibly north to Turkey.

Israel: M.H. (1900m) G.H.; U.G.; L.G.; C.; S.; J.V.; S.C.P.

*Host*

No previous record. In Israel on: *Molucella spinosa*; *M. laevis*; *Plantago* (=allotrophy). From 31 Dec. to 13 June and 25 Oct., most common in May.

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