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THE BARK AND TIMBER BEETLES (SCOLYTIDAE) OF ISRAEL

268. CONTRIBUTION TO THE MORPHOLOGY AND TAXONOMY
OF THE SCOLYTOIDEA

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Prof. Dr. F. S. Bodenheimer in his "Die SchSdlihgsfauna Palastinas" 1930 mentioned five species of Scolytidae: Scolytus amygdali Guer. , Phloeotribus scarabaeoides Bern., Phloeosinus aubei Perr. , Hypoborus ficus Er. and Xyleborus saxeseni Ratz. In a later paper "Prbdromus Faunae Palaestinae", Mem. Inst. d'Egypt. 33, 1937, p. 155 the same author adds six more species, four of them verified by other collections: Hylesinus oleiperda Fab. , Phloeosinus armatus Reit. , Coccotrypes dactyliperda Fab., Pityogenes calcaratus Eichh. (Pinus) M. Pityogenes bidentatus Herbst (opacifrons Reitt.), (Pinus) ES. and Orthotomicus erosus Woll. (Pinus) M. indicating the hostplants as far as known and the distribution by using the abbreviations M - Mediterran, ES = Eurosi-birian, SS = Saharoindian and HOL - Holarctic. Two of these speqies mentioned, Hylesinus oleiperda Fab. known to occur on Olea europea and Pityogenes biden- tatus being common on various Pinus ssp. were not represented in the material under investigation.

During recent years Mr. J. Halperin of the "Volcani Institute of Agricultural Research, Forestry Division" in Ilanot paid more attention to the family of Scolytidae collecting a good number of species so far not known - from Israel or found in food-plants or in localities not yet recorded. Another interesting collection has been received from Mr. Yaakov Palmoni of the "A. D. Gordon Agricultural and Nature Study Institute" in Deganya and a few specimens identified originate from other sources.

An other species, Hypothenemus eruditus Westw., widely distributed over the tropical and subtropical regions of the world, has first been mentioned by J. Carmin in D. Sheinkin, 1931 "The Fauna of Palestinian Plants" Bull. Soc.

R. Ent. Egypte 1931:173, attacking Ficus sycomorus L. in Tel Aviv, 25. and 27. II., and 16. VI. 1929. To the same specimens refers Bytinski-Salz in his paper "An annotated list of insects and mites introduced into Israel" Israel Journ. Ent. 1, 1966:38.

A second species referred to in literature, Chaetoptelius vestitus Reg. without giving exact localities has been reported from Pistacia vera in Palestine by A.M.S. Talhouk 1969 in "Insects and mites injurious to crops in Middle Eastern countries" P. Parey, Hamburg, Berlin, p. 146.

A great deal of informations, mainly based on identifications by Forstrat Eggers and H. Wichmann, were kindly submitted by Prof. Dr. H. Bytinski-Salz, who also furnished the remarks about abundance of several species and the distribution of hostplants in Israel. I am very much obliged to colleague Bytinski-Salz for these additional notes.

All hostplants are of Mediterranean origin as far as they thrive in non irrigated areas of Israel. With irrigation a good number of subtropical plants and such of European and American origin develop well. All localities given below for coniferous trees, Olea europea and Ficus carica lie within the mediterranean belt which comprises the whole Galilea, the Coastal Plain and the Mountains East to Jerusalem, South to Heborn. The Beisan Valley and the Middle Jordan Valley South of Lake Tiberias have a prevalently Iranoturan flora, but all the records of Mr. Y. Palmoni in this region (200 - 10 meters below sea level) refer to irrigated trees. There are no representatives of the Ethiopian fauna in Israel, although there are enough trees and woody shrubs in the South.

Hypothenemus eruditus Westw. widely distributed over the tropical and subtropical regions of the world is also common in the mediterranean countries. The great number of synonyma of this species, also for Phloeosinus aubei Perris, Coccotrypes dactyliperda Fab. and Xyleborus saxeseni Ratz. have been recorded in Schedl monograph "Scolytidae and Platypodidae Afrikas" in Rev. Ent. Mosambique 2-5, 1962.

Hypothenemus albipilis Reitter, Wien. Ent. Ztg. 1887:195 originating from Jerusalem and Jaffa is synonymous to Hypothenemus leprieuri Perris, Ann. Soc. Ent. Fr. VI, 1866:161. Another synonym to this mediterranean species is Hypothenemus kraussej Wichmann, Wien. Ent. Ztg. XXX, 1911:210 described from specimens of Sardinia.

Pityogenes opacifrons Reitter, Best. Tab. Borkenkäfer 1913: 99 is synonymous to Pityogenes bidentatus Herbst, Füssl. Arch. IV, 1783:24.

Concerning the economic importance of bark beetles in Israel Z. Avidov and I. Harpaz: Plant Pests of Israel 1968, Isr. Program f. Scient. Translat. Jerusalem pp. 302 - 306, report on five species, giving descriptions, biological observations and control measures in Israel. Scolytus amygdali Guer. attacks the rosaceous fruit trees: almond, peach, apricot, plum, cherry, apple, pear, quince and loquat, Phloeotribus scarabaeoides Bern. (oleae Fab.) and Hylesinus

oleiperda Fab. are common in olive trees, Hypoborus ficus Er. in fig, mulberry trees and grape canes and finally Coccotrypes dactyliperda Fab. in seeds of Phoenix canariensis.

The present list of Israel Scolytidae comprises 21 species, all of them being common in the mediterranean basin. Few more like Chaetoptelius vestitus Rey, at least one species of the genera Hylastes Er., Liparthrum Woll., Cisurgus Reitt., Thamnurgus Eichh., and some more Cryphalini (Stephanoderes sp.) may be expected in the future, if more attention will be paid to native and introduced forest trees and shrubs and the ligneous parts of genera like Cistus, Lonicera, Clematis, Euphorbia, Genista, Sarothamnus, Cytisus, Ononis, Salvia, Teucrium etc.

The following species have been intercepted by the Plant Quarantine Service, Ministry of Agriculture or Mr. Palmoni at Haifa Port:

1. Stephanoderes hampei Ferrari

Borkenkäfer 1867:11 (Cryphalus).

Ex coffee beans introduced from East Africa, 28.XI.1965, det. Bytinski-Salz, in collection Agr. Res. Inst. Bet Dagan.

2. Mimips sexdentatus Eggers

Rev. Zool. Bot, Afr. 38, 1944:96.

Ex "Ozigo" logs from West Africa, 12.V.1966, leg. Palmoni.

3. Xyleborus affinis Eichhoff

Berl. Ent. Ztschr. XI, 1867:401.

Ex "Ozigo" logs from West Africa, 12.V.1966, leg. Palmoni.

4. Platypus erichsoni Chapuis

Monogr. des Platypides 1866:211.

Ex Aucumea bark from Nigeria. II. 1952, leg. Bytinski-Salz in coll Agr. Res. Inst. Bet Dagan (Xyleborus mascarensis).

None of these species seem to have acclimatized itself to Israel conditions.

ANNOTATED LIST OF ISRAEL SCOLYTOIDEA

Abbreviations: BS = H. Bytinski-Salz; H = J. Halperin; MA = Collection of Ministry of Agriculture Bet Dagan; P = J. Palmoni.

Scolytus amygdali Guérin

Bull. Soc. Ent. Fr. XXVIII, 1847:46.

Palestine, Gederah, 1911, leg. Dr. Pickholz.

Tirat-Yaël, Upper Galilee, 25.V.1959, 4.X.1960, ex Prunus persica, leg. H.

Scolytus rugulosus sap. mediterraneus Eggers

Ent. Bl. XVIII, 1922:121.

Jaffa, 9.IX.1935 (deciduous fruit trees) (MA).

Qiryat-Anavim, 24.VI.1934 (plums) (MA).

Jerusalem, 29.IX.1939 (apple) (MA).

Petah Tikva 11.VI.33 (citrus) (MA).

Ramalla, 20.X.1934 (cherry) (MA).

Miqve Israel, 24.VIII.1934 (apple tree) (BS).

Jerusalem, 27.V.1940 (BS).

Afiqim, 5.VIII.1951, from apple tree, leg. P.

Very common everywhere in irrigated plantations causing sometimes severe damage to plums and especially apples which suffer and weaken under the summer heat; big branches and sometimes whole trees dry up.

Phloeotribus scarabaeoides Bernard

Mém. Hist. Nat. - Provence II, 1788:270 (Scolytus).

Palestine, Nazareth. 1909 (Coll. Mus. Paris).

Tulkarm, Miqve Israel, VI-VII.1934 (MA).

Qiryat Anavim 19.VIII.1934, Lod, 29.II.1944 (MA), (all olives).

Jerusalem, 9.VIII.1945 (lilac) (MA).

Ashdot-Yaaqov, 13.VII.1943, in an olive trunk (P).

Huldah V. 1946 (olive twigs) (BS).

Mt. Carmel, Dalia, 9.XII.1959, 10.VI.1960, all in Olea europea (H).

Very common in twigs after pruning, especially in unirrigated olive groves.

Chaetoptelius vestitus Rey

Ann. Soc. Lyon 1860:340.

Mentioned by A.M.S. Talhouk. without stating a distinct locality in "Insects and mites injurious to crops in Middle Eastern Countries", P. Parey, Hamburg, Berlin, 1969: 146, as attacking Pistacia vera. in Palestine.

Blastophagus piniperda L.

Syst. Nat. ed. X, 1758:355 (Bostrichus).

Mt. Carmel: Damum, 3.XII.1959, 20.IV.1964, 6.V.1964, ex Pinus halepensis (H).

Hylurgus micklitzii Wachtl

Deutsche Ent. Ztschr. XXV, 1881:227.

Mt. Carmel: Balad esh Sheikh, 28.IV.1937 Pinus halepensis det. Schedl (MA).

Haifa Carmel. IV.1943, ex Pinus halepensis (BS).

Jehuda Mts.: Shaar HaGay, 29.VI.1959, ex Pinus halepensis (H).

Menashe Hills: Megiddo, 20.III.1964 (H).

Ilanot, Coastal Plain, 25.IV.1964 (H).

Common in pines damaged or killed by forest fires.

Carphoborus minimus Fabricius

Syst. Eleuth. II, 1801:395 (Hylesinus).

Shfeya, Pine 23.I.47 MA, (erronously determined as Crypturgus numidicus by Wichmann)..

Rosh Hanikra, Western Galilee, ex Pinus halepensis (H).

Carphoborus perrisi Chapuis

Syn. Scol. 1869:31.

Hula, Upper Galilee, 16.X.1969, ex Pistacia atlantica (H).

Phloeosinus armatus Reitter

Wien, Ent. Ztg. CI, 1887:192.

Jerusalem, 16.VII.1940 (Cypress) (MA).

Haifa Carmel. 1.VIII.1945, ex Cupressus (BS).

Petach Tikva, 26.XI.1961, ex Cupressus (H).

Tel Aviv, 11.IV.1943, ex Cypress (BS).

Common in Cupressaceae damaged or killed by forest fires.

Phloeosinus aubei Perris

Bull. Soc. Ent. Fr. 1855:78 (Hylesinus).

Wadi Soreq, 9.VII.1929 (MA).

Palestina, Dan, 7.IX.1949, in Cupressus sp., T. Kaut.

Israel, Ginegar, 19.VIII.1952, ex Ceratonia (BS).
Maoz-Hayyim, Beisan Valley, 24.VII.1960, ex Cupressus (H).
Shimron-Nazareth, 5.V.1961, ex Cupressus (H).
'Sefen', taken from wood pulp of cypress trunks brought to the factory,
3.VII.1961 (P).
Ilanot, Coastal Plain, 12.VI.1964, ex Taxodium distichum (H).
Also common in Cupressaceae damaged or killed by forest fires.

Hylesinus oleiperda Fabricius

Entom. System. I, 2 1792:366.

Mentioned by Bodenheimer (1937). Avidov and Harpaz (1968) as occurring on olive trees.

Hypoborus ficus Erichson

Luc. Expl. Alg. II, 1849:462.

Metulla, Jerusalem, Beersheba, (all ex fig trees) (MA).
Ben Shemen, 17.VI.1945, ex fig (BS).
Yirka, Upper Galilee, 15.VII.1959, ex Ficus carica (H).
Rather common in dying twigs, abundant in arab fig trees on not more cultivated (ploughed up) soils and usually finishing up trees after the attack of the tropical fig borer (Batocera rufomaculata DeGeer).

Hypothenemus eruditus Westw.

Trans. Ent. Soc. London II, 1836:34.

Miqve Israel, Tel Aviv, 25.XII.1960, ex Brachychiton populneum (H).
Ein Shemer, 12.V.1964, ex Ulmus sp. (H).
Ilanot, Coastal Plain, 15.V.1964, ex Populus euramericana (H).
Ilanot, 2.IV.1965, ex dry branches of Morus alba (H).
Shfaim, 16.II.1966, ex Citrus twigs, leg. A. Porat.
Ilanot, 22.VIII.1968, ex Ulmus pumila (H).
Beit Hananya, 24.XII.1968, ex Citrus aurantii (A. Porat).

Hypothenemus leprieuri Perris

Ann. Soc. Ent. Fr. VI, 1866:61 (Dryocoetes).

Jerusalem and Jaffa, according Reitter, Best. Tab. Borkenkäfer 1913:72 (Hypothenemus albipilis Reitt.).

Hypothenemus simoni Reitter

Wien. Ent. Ztg. 1887:194.

Syrien: Haifa, according original description of Reitter.

Crypturgus mediterraneus Eichhoff

Petites-nouv. Ent. 1869:11.

Shefeya children village, 23.I.1942, fr. bark of 50 years old pines infested w. Orthotomicus erosus, leg. Schweig (numidicus det. Wichmann).

Sarid, 7.I.1945 (should be verified) (BS).

Ginegar, 4.III.1951, ex Pinus halepensis (BS).

Menashe Hills, nr. Haifa, 20.XO.1961, ex Pinus halepensis.

Mishmar Haemek (H). Balad esh Sheik from Pinus halepensis.

Coccotrypes dactyliperda Fabricius

Syst. Eleuth. II, 1801:387 (Bostrichus).

Deganya A. 14.XII.1939, destroying buttons made of Phytelephas macrocarpa fruit (P).

Tel Aviv e. 1.XII.1946 (buttons) (BS and MA).

Tel Aviv, 17.II.1949, ex buttons (BS).

Deganya A. 28.VII.1966, in light-trap (P).

Ilanot, 14.II.1968, ex seed of Phoenix dactylifera (H).

Pityogenes bidentatus Herbst

Füssl. Arch. IV, 1783:24 (det. 1938 as P. opacifrons).

Balad esh Sheik from Pinus halepensis.

Pityogenes calcaratus Eichhoff

Ratio Tomycinorum 1879:280 (bidentatus var. calcaratus)

Balad esh Sheikh, Mount Carmel, 26.5.1937, ex Pinus halepensis, P. Jolles.

Ramallah, 8.XII.1930 (both Pinus halepensis) (MA).

Ramallah, 25.VIII.1930, det. Wichmann (BS).

Jerusalem, 23.V.1937, ex Pinus halepensis (H).

Meron, Upper Galilee, 3.VI.1959, ex Pinus halepensis (H).

Ein Hashofet, Menashe Hills, 12.VIII.1959, ex Pinus halepensis (H).

Yirka, Upper Galilee, 15.XII.1959, ex Pinus halepensis (H).

Tel Aviv, 15.VI.1960 (BS).

Ilanot, Coastal Plain, 27.XII.1960, ex Pinus brutia (H).

Safed, 20.III.1967, ex Pinus insignis (H).

Safed, 26.IV.1967, ex Pinus halepensis (H).

Orthotomicus erosus Wollaston

Cat. Col. Madeira 1857:95 (Tomicus).

Shfeya, Balad esh Sheik, Shaar Hagay, (all Pinus halepensis) (MA).
Jerusalem, 17.XI.1943 (at light) (MA).

Shfeya children village, 23.I.1942, fr. bark of 50 years old pines
infested with Crypturgus mediterraneus, leg. Schweig.

Yirka, Upper Galilee, 15.XII.1959, ex Pinus halepensis (H).

Yoqneam, Menashe Hills, 16.IV.1960, ex Pinus halepensis (H).

Xyleborus saxeseni Ratzeburg.

Forstinsekt. I, 1837:167; 1839:204 (Bostrichus).

Miqve Israel near Tel Aviv, 26.VIII.1958, ex Vitis (H).

Oranim (Carmel range), 28.III.1960, in carob tree (H).

Ilanot (Coastal Plain), 22.VI.1960, in Robinia pseudoacacia (H).

Hula (Upper Galilee), 11.VII.1960, in Pistacia atlantica (H).