

**ISRAEL JOURNAL  
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**VOLUME I 1966**



**ISRAEL SOCIETY OF ENTOMOLOGY**

The figure on the title page depicts the Eastern race of the Mediterranean swallowtail Papilio alexanor Esp. ssp. maccabacus Strg..

#### NOTICE

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All other correspondence concerning the journal should be addressed to the editor: Prof. Dr. H. BYTINSKI-SALZ, Department of Zoology, Tel Aviv University, 155 Herzl Street, Tel Aviv.

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Contributions are solicited for publications in the journal concerning:

- a) Morphology, physiology, taxonomy, faunistics and bionomics of insects and mites of the Near East.
- b) Papers on applied entomology of the same region.
- c) Reviews of general problems in Entomology in which our readers may be interested.

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## TABLE OF CONTENTS

	Page
Editor's Preface	
Rivnay, E., A contribution to the biology of the eggplant borer Euzophera osseatella Tr.	1
Bytinski-Salz, H., An annotated list of insects and mites introduced into Israel.	15
Rivnay, E., The flight of <i>Earias insulana</i> in the Negev.	49
Yathom S., Phenology of <i>Pseudaletia unipuncta</i> in Israel.	55
Melamed - Madja, V., The phenology of <i>Sitona</i> species in Israel.	63
Kugler, Y., A list of parasites of Lepidoptera in Israel.	75
Priesner, H., On some Pompilidae of Israel	89
Peretz, J.R. Gavrielith, E. Gurewitch and H. Frenkel. Trials in the control of the Mediterranean fruit fly ( <i>Ceratitis capitata</i> Wied.) with organophos- phorus insecticides.	155
Yathom, S. and J. Meisner, Insecticides trials against the potato tuber moth <i>Gnorimoschema operculella</i> Zell. (Gelechiidae, Lepidoptera).	167
Tahori, A.S., Resistance pattern of a fluoroacetate-resistant fly strain.	179
Asher, K.R.S., In memoriam to two pioneers of malaria eradication.	183
Short notes and records.	189
List of Members of the Israel Society of Entomology	194
Index	197

## EDITOR'S PREFACE

Israeli entomologists have been meeting on-and-off for more than twenty years, giving progress reports of their work and discussing problems concerning local entomology, applied and pure. Lately it was decided to give these gatherings a more official standing and on February 20th 1962 the

### ISRAEL SOCIETY OF ENTOMOLOGY

was founded, whose aim it is " to encourage and promote entomological research in Israel". Membership of the Israel Society of Entomology is granted to professional and amateur entomologists on recommendation by two members and after payment of the yearly membership fees.

At the same meeting it was decided to start publication of an English-language periodical, containing the results of the entomological research of its members and of other contributors, whose papers dealt with the entomological facts and problems of the Near East.

The first volume of the

### ISRAEL JOURNAL OF ENTOMOLOGY

which is herewith presented to the public is a modest beginning, but it is hoped that it will develop into a periodical that will contribute much towards the knowledge of entomology in our region.

The publication of this volume has been much facilitated by the contributions of local manufacturers and distributors of agricultural chemicals, whose help gratefully acknowledged.

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In Memoriam to Two Pioneers of Malaria Eradication: G. G. Mer, O. B. E., D. T. M. & H. (22 March 1961); Academician V. N. Beklemishev (4 September 1962).

With the death of G. G. Mer (22 March 1961) and V. N. Beklemishev (4 September 1962), Malariology and Medical Entomology have lost two of their most brilliant exponents.

Prof. G. G. Mer was the doyen of malariologists and insect toxicologists in Israel, a man equally distinguished by his pioneering spirit, scientific achievements and strength of character.

GIDEON GERONIMO MER was born at Poswol in 1894. His father, Dr. A. Mer, was a physician and surgeon famous through all the three Baltic States; his mother was a dentist. Sent in 1911 by his parents to study medicine at the venerable University of Heidelberg in Germany, young Gideon decided in 1913 to break off his studies and to leave for Palestine as an agricultural pioneer. In 1914 he was expelled from this country (as a Russian citizen) and reached Alexandria, where he was, at first, as assistant medical officer at the Jewish refugee hospital. Subsequently, he enlisted in the Zion Mule Corps and was wounded, as one of Trumpeldor's adjutants, in the Gallipoli Campaign. Upon demobilization in 1918 he joined the Jewish Health Service in Jerusalem. In 1922 we find him successfully directing the anti-malaria campaign at Ein-Harod and Tel-Yosef, while in 1922/23 he served as senior sub-inspector of Prof. I. J. Kligler's Malaria Research Unit. He then took leave to complete his studies at Rome and Naples (M.D. cum laude, 1927). After subsequent work with Grassi at Rome and at the Malaria Research Station of Medemblik, Holland, he obtained an additional doctorate (in Tropical Medicine and Hygiene) at Paris. In 1929 he returned to this country and was appointed assistant at the Rosh Pina Malaria Research Station of the Department of Hygiene of the Hebrew University. He advanced rapidly to senior assistant and instructor in 1930, whereupon the directorship of the Malaria Research Station was conferred upon him. He was nominated lecturer in 1934 and was awarded a full professorship (ad personam) in 1938. In the Second World War he volunteered again and saw service with the Royal Medical Corps, attaining the rank of Lt.-Colonel. During this second military period of his life, he rendered yeoman's service in malaria control in the Middle and Far East, especially in Burma, for which he was awarded the O. B. E. (Mil.) He served his newly established country, Israel, equally well during the Israel War of Liberation, as Head of the Department of Preventive Medicine of the Israel Army, and as Director General of the Ministry of Health in 1956/7.

Mer's work, until World War II, was dedicated mainly to research on and combat against, malaria. Two of his investigations are today common knowledge: his study on the experimental transmission of quartan malaria to man by the mosquito ( 1933), and his age-grading method (common oviduct) for female anophelines ( 1932 ); the latter discovery served as a cornerstone for the revolutionary development of new age-grouping procedures by the Beklemishev school. Mer's studies on malaria dealt with the biology, bionomics, and attraction of Anopheles; equally outstanding was his work (with his pupil N. Goldblum) on a haemosporidian of bats. He also carried out numerous studies on chemotherapy of malaria.

It must be mentioned at this point that Mer succeeded in the protection of British troops in Burma, not only by painstaking research on the bionomics of the malaria vectors in the Burmese jungle and by a rigid Mepacrine regime, but also by spraying tents and entire zones in the jungle area with DDT as early as 1943; this was a lesson which he was not to forget. Thus with World War II, Mer started to work on insecticides and insect-resistance, pest control by chemical means in general, and especially the fight against mosquitoes and houseflies. Numerous studies on DDT-synergists for resistant houseflies, on behaviouristic resistance, the development of new testing methods, etc. , were conducted by Mer after World War II. A series of papers also appeared on practical control measures against houseflies in communal settlements, especially by larvicidal treatments, and, on the other hand, on basic work dealing with biochemical and biological factors of resistance. However, Mer's work was never divorced from practical aspects; his last paper dwells on his experiments tending to promote the re-introduction of housefly-trapping methods.

Mer was an excellent teacher; many men who passed through his hands at Rosh Pina, and in the British and Israel Armies, have since made their mark in various fields. He was a man of great vitality and vigour and he passed on his experience and unbounded enthusiasm to many of his disciples. He had a flair for languages and, thus, his intellectual qualities, combined with his open-hearted friendliness, easily won him the respect and affection of scientists all over the world. The high regard in which he was held is evidenced by his repeated nomination to Expert Panels for Malaria and Insecticides of the World Health Organization.

\* \* \*

Prof. V. N. Beklemishev, the well-known authority on Malariology, Entomology and Invertebrate Anatomy, was Head of the Division of Entomology of the Martsinovski Institute of Medical Parasitology and Tropical

Medicine of the U. S. S. R. Ministry of Health.

WALDIMIR NIKOLAIEVITCH BEKLEMISHEV, son of a well-known surgeon and physician was born in 1890 in Grodno. He enrolled at the University of St. Petersburg in 1908; while still a student he collected important data on the parasitic Turbellaria during summer work at the Murman Biological Station. In 1913 he graduated with Invertebrate Zoology as major subject and remained as a postgraduate student in the Department of Invertebrate Zoology at St. Petersburg. In 1914 he took part in a Caspian expedition under Prof. Knipovitch, on board the "Abo". In 1918 Beklemishev was nominated Assistant Professor and in 1920 full Professor of Biology at the University of Perm; in the same year he also undertook an expedition to the Aral Sea. From 1924 to 1931 he was, apart from his duties as Deputy Director of the Biological Research Institute at Perm University, also Director of the Kama Biological Station; in 1931 he was nominated Pro-Rector at the University of Perm. From 1932 until his death, he was Head of the Department of Medical Entomology of the Martsinovski Institute and, during most of this time (1934 to 1952), Professor of Comparative Anatomy of Invertebrates, and also, for several years, for both Animal Ecology and Medical Entomology, at the Moscow State University. He thus taught Medical Entomology at the Lomonosov University, at the Martsinovski Institute and at the Central Post-Graduate School in Moscow. During these years he participated in many expeditions (Middle Asia, Far East, Northern Iran etc.) in connection with the eradication of malaria, and the epidemiology of tick-encephalitis and leishmaniasis.

Beklemishev carried out an immense amount of outstanding work during his lifetime; much of this effort was devoted to the epidemiology of malaria, a subject in which he had become involved at Perm, and on which he became an accomplished master and acknowledged authority. Two of his books, one on the ecology of *A. maculipennis*, and the other on seasonal changes in the biology of *A. atroparvus* in the U. S. S. R., bear testimony to his enormous working capacity.

Beklemishev clearly grasped the importance of ecological and phenological factors in the distribution of malaria; the concept of "landscape malariology" which became so important in malaria control, especially in the U. S. S. R., had been introduced and developed by him.

It was on the basis of his studies in 1944 that he led his school (Detinova, Polovodova, Yaguzhinskaya) to the development of the new Russian

methods of age determination in female anophelines (based on the number of dilations in the ovarioles, and the condition of the tracheal system of the ovaries). Similar systems were adapted later on also for other insects of medical importance, such as houseflies, tsetse flies, black flies (Simuliidae) and midges (by Devtinova, Kuzina, Linyova and others). The introductions to the W. H. O. monograph on age-grouping methods in Diptera of medical importance (prepared by his pupil Dr. T. S. Detinova) was written by him.

It was his outstanding merit to supervise and organize the planning and execution of a collective research effort, embracing the whole U. S. S. R., on the bionomics of arthropod vectors of disease.

The book by Beklemishev best known outside Russia is his treatise on the Comparative Anatomy of Invertebrates, an erudite and authoritative work, which stands out as a landmark. It was first published in 1944 (second edition 1954) and was translated into many languages. Beklemishev's classical Handbook of Medical Entomology is also well known internationally.

Beklemishev and his school were also engaged in the study of resistance. His interest in this subject is documented, e. g., by his editing (together with Prof. Derbeneva-Ukhova) of a translation into Russian of basic Western studies on resistance (1959). For this volume he wrote an extensive introduction and critical discussion. Beklemishev and Derbeneva-Ukhova also jointly edited a 1960 collection of Russian contributions to the study of arthropod resistance to insecticides; the leading article, a major paper, was again contributed by Beklemishev.

His country recognized its debt to him by twice awarding him the highest U. S. S. R. prize for scientific accomplishments, once for his work in the field of comparative anatomy of invertebrates, and the second time for his entomological contributions to malaria eradication. His sage advice was appreciated and constantly sought after by his Government and by international bodies; he was consultant on entomology and vector control to the Ministry of Health of the U. S. S. R., as well as a member of the Expert Panel on Malaria of the World Health Organization.

Incidentally, Beklemishev and Mer were close, devoted friends through frequent correspondence over a period of more than two decades, although they met for the first time only in 1958 when Mer visited Russia. Their interests ran parallel in many cases; this is evident if we consider

their contributions to malariology in general, to the bionomics of Anopheles, age-grading methods and insecticide resistance. It was Beklemishev, as co-editor of the *Meditsinskaia Parazitologiya i Parazitarnye Bolezni* (Moskva), who wrote an obituary in this journal on Mer's demise and paid him a moving tribute.

Beklemishev and Mer were both scientists of truly international standing, and they will be greatly missed by their pupils, schools, and countries, and by scientists all over the world.

\* \* \*

The author is most grateful to Prof. B. P. Derbeneva-Ukhova for sending him much valuable information on the late Academician Beklemishev.

K. R. S. Ascher

**The  
Milchan  
Bros.  
Ltd.**

Wish to extend their heartiest congratulations to the Entomological Society of Israel upon the appearance of the first Volume of the Israel Journal of Entomology.

**The  
Citrus  
Marketing  
Board  
of  
Israel**

Congratulates the Entomological Society of Israel on the occasion of the publication of its new Journal of Entomology.

### SHORT NOTES AND RECORDS

#### Lucanus cervus L. (ssp syriacus Plan) in Israel.

Of this stag beetle, which occurs in several subspecies throughout Europe to Asia Minor and the Lebanon, a small male was extracted dead from a rotten tree stump at Gesher Hasiv on 1. X. 63 by Mr. E. Nir. Total length ( clypeus to hind end of body ) 44 mm, length of the mandibula 13 mm. After comparison with a slightly larger male from the Lebanon (total length 48 mm, mandibula 22 mm ) I consider this specimen as a "capreolus" form of the ssp. syriacus Plan. A female, now in the collection of Ussishkin House in Dan, found at Salaban, Upper Galilee on 24. V. 55, probably belongs to the same subspecies.

The larvae of Lucanus cervus live in the rotten wood of large deciduous forest trees, chiefly oaks, the males flying at dusk around the tops of trees and shrubs of the macchia; they should be looked for in May-June along the Lebanese border.

H. Bytinski-Salz

#### Four hawk moths new to Israel

The following sphingid moths have been found since the publication of F. S. Bodenheimer's *Prodromus Faunae Palaestinae*, 1937:

#### Marumba quercus Schiff.

This species is caught at light sparingly, but almost every year, in the Carmel region, chiefly Haifa-Carmel, Achusa, Yagur, Tivon, etc. but has also been taken in the Upper Galilee (Dan). The eight specimens I have at present before me were caught on 17. V. 56, 22. V. 58, 4. VII. 59, 30. VIII 60, 22. IX 53. The species has two generations, the first in May-June and the second in August-September. The larva feeds on oak trees, especially Quercus ithaburensis, and is leaf green with oblique lateral stripes which meet in the dorsal line; length of the full-grown larva up to 9 cm. I am very much indebted to Miss Chaya Sandler of Oranim who gave me the following data on a successful breeding in 1962: A female caught at Tivon on 28. V. laid eggs on 1. VI. , larvae hatched on 8. VI. ; pupation began on 25. VII; first pupae 5. VIII: first emergence of adult 17. VIII. Mr. P. Jolles of Yaarot Hacarmel informs me that he has found a full-grown larva even in October.

Several specimens show a more brownish, slightly greyish suffusion of the upper side of the wings; the bands on the forewing are more distinct, and the hind wings are darker brown than in European (Dalmatian) specimens. They therefore belong to the ssp. mesopotamica O. Bang Haas or are transitions to this form. The species is distributed from S. Austria through S. Europe, the Balkans, Asia Minor to Kurdistan and Transcaucasia, and also occurs in the Lebanon (Ellison and Wiltshire, Trans. R. Ent. Soc. London 88; 24, 1939).

Dolbina elegans A. Bang Haas.

K. Kernbach (Ent. Zeitschr. 69:256, 1959) mentions a female of this species from Jerusalem in his collection. The species was described from Iskanderun, Turkey, and is now found through Bulgaria, Asia Minor and Iran to N. Syria; it is not mentioned from the Lebanon. I have not yet seen a specimen from Israel, and this may be a case of mislabelling, but the distribution indicates that its occurrence in Israel is likely. A short description of the moth is, therefore, apt: wing span about 4.5 cm; ground colour a dark grey, with blackish basal and median cross lines and a lighter zig-zag line on the outer margin of the forewing. A description and picture is given in: Seitz, Palaearctic Lepidoptera Supplement vol II: 140, Tav. 12a. The food plant of the larva is unknown, but other species of this genus feed on Oleaceae.

Proserpinus proserpina Pallas.

This species was first caught by Mr. S. Shoham of Sde Nehemia Huliote on 13. III. 1954 and seems to occur there sparingly every year (11. IV. 55; 20. V. 57; 14. VI. 60; 11. IV. 63)

The specimens I have seen do not differ from European specimens. The species occurs from Central Europe to the Caucasus and Bokhara, it is also mentioned from the Lebanon (Ellison and Wiltshire, loc. cit.) The larva feeds on Lythrum, Epilobium and Oenothera.

Pergesa suellus Stgr.

I caught a male specimen of this species at Dan on 17. V. 1957, at the light. After comparison with a specimen of the typical form from Asia Minor, which has darker greyish-brown wings, this specimen shows a decided pinkish suffusion. On the body especially the patagia of the pronotum and abdomen are pink (instead of greyish-brown as in the typical form); it belongs, therefore, to the ssp. rosea Zerny (Iris 47:62, 1933) described from the

Lebanon. The food plant is not yet known, but the larva should be searched for on Galium and Epilobium in the Upper Galilee.

H. Bytinski-Salz

Note on the ecology of two Orthoptera of Ethiopian origin new to Israel.

Gryllidae

It may be of interest, that the following specimens of *Notopleura saharica* Krauss 1902 (Eremogryllinae) were found in the Negev desert, southern Israel: 1 ♀ Wadi Hethira (Machtesh Hagadol) 1. IV. 62 leg. Amitai; 1 ♂ ♀ ibid. 12. IV. 62 leg. Pener ( coll. Dept. Zool. Hebrew Univ. ).

The last two specimen were found in a small and dry wadi with relatively rich vegetation consisting of low herbs as well as bushes and trees of medium height (like *Tamarix*); the wadi is surrounded by stony desert, but the specimens were found in the vegetation rather than in the desert area.

This species emits a very intensive sound, which is clearly heard from a distance of over 10 metres. According to Dirsh (Bull. Brit. Mus. Nat. Hist. Ent. 10 349-419, 1961) the stridulatory apparatus is well developed, including elytrae with strong radial veins and hind femurs with articulated pegs on their inner surfaces. Krauss (Verh. Bot. Zool. Ges. 52:230-254, 1902) already mentioned sound production in *N. saharica* which he describes as "ds-ds-ds-".

The species has so far been recorded from Algiers, Tunis, Egypt and the Sudan and as biotope "stony desert with sparse vegetation" is mentioned by Uvarov (Techn. Bull. Min. Agr. Egypte No. 41, 1924) and Innes (Mem. Soc. R. Ent. Egypte 3, 1929)

Acrididae

*Macroleptea laevigata* Werner.

This species was described by Werner ( S. B. Akad. Wiss. Wien 123, 1914) as a Pyrgomorpha but in 1962 Kevan erected for it the new genus Macroleptea (Publ. cult. Comp. Diam. Angola, Lisboa 60, 1961). According to this author only a few specimens are known from the type locality ( Ain Sefra, Algeria,

in sand dunes) but he already mentions specimens from southern Israel which were collected at Nabi Rubin 12. VIII. 44 (leg. Fishelson) and 13-14 km south of Beersheba 18. VII. 51 (leg. Pener, coll. Dept. Zool. Hebr. Univ.)

The two females collected by the author on 18. VII. 55 (not 51!) were found in an area of sand dunes due south of Beersheba at 8 o'clock in the morning on the ground in relatively open places. The surrounding vegetation consisted of an Artemisia monospermum-Aristida scoparia association with a prevalence of the first species.

The author wishes to express his sincere thanks to Dr. V. M. Dirsh and Prof. D. K. M. E. Kevan for the identification of the two species and to Prof. A. Shulov for criticism of the manuscript.

M. P. Pener

#### Occurrence of migrant Lepidoptera in the south of Israel in spring 1964.

At the end of March large populations of Plutella maculipennis Cur. were observed on the wing in the southern part of Israel. Its larvae were found on cultivated and wild Cruciferae all over the fields towards the end of April.

In the second half of April high populations of Agrotis ypsilon Rott. Plusia gamma L. and Chloridea spp. were attracted to lights in Beersheba, and Pyrameis cardui L. and Chloridea spp. were reported to be present in certain localities. In these places, also larvae of P. cardui were crawling over the roads and those of Chloridea spp. were destroying wild Compositae.

During a visit on April 26th P. cardui larvae were no longer observed, a few Chloridea larvae were still found on entirely defoliated plants, but large adult populations of H. peltigera Schiff., H. nubigera H. Sch. and P. cardui L. were still present, accompanied by a few Colias croceus Fourc. and Pieris brassicae L.

S. Yathom

Observations on migrating moths

- 1) On May 9th 1964 on the balcony and windows of a fourth story apartment in Diamond St. , Ramat Gan, from 21 to 24 hours about 200 Agrotis ypsilon Rott. were attracted by Neon light. No other species were present.
- 2) On May 13th at 22 hours, at shop windows in King George St. , Jerusalem, the following moths were observed: about 300 Laphygma exigua Hbn. , 60 Chloridea peltigera Schiff. , 10 Ch. obsoleta F. + f. rufa Warr. , 30 Plusia ni Hbn. , 2 Plusia gamma L. , 10 Triphaena pronuba L. , 1 Agrotis ypsilon , 1 A. segetis Hbn. , 6 Rhodometra sacraria L. , 25 Nomophila noctuella Schiff.  
One week later at the same place and hour only : 4 Oria musculosa and 1 Clytie sancta Stgr. ( both local species).
- 3) On May 21st a large concentration of Pieris brassicae L. was observed in an empty plot W. of Jerusalem covered sparingly with wild, flowering crucifers. About 28 specimens were counted within 10 minutes. No directed migration was observed.

H. Bytinski-Salz

The EDITOR, requests for publication all records on insect migration, accompanied, as far as possible, by meteorological data.

## THE ISRAEL SOCIETY OF ENTOMOLOGY

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I N D E X

	Page
Asher, K. R. S., In memoriam to two pioneers of malaria eradication.	183
Bytinski-Salz, H., An annotated list of insects and mites introduced into Israel.	15
Editor's preface.	
Kugler, Y., A list of parasites of Lepidoptera.	75
Melamed-Madja, V., The phenology of <i>Sitona</i> species in Israel.	63
Peretz, J., R. Gavrielith, E. Gurewich and H. Frenkel, Trials in the control of the Mediterranean fruit fly ( <i>Ceratitis aptata</i> Wied.) with organophosphorus insecticides.	155
Priesner, H. On some Pompilidae of Israel.	89
Rivnay, E., A contribution to the biology of the eggplant borer ( <i>Euzophera osseatella</i> Tr.)	1
Rivnay, E., The flight of <i>Earias insulana</i> in the Negev.	49
Short notes and records	189
Tahori, A. S., Resistance pattern of a fluoroacetate-resistant fly strain.	179
Yathom, S., Phenology of <i>Cirphis unipuncta</i> in Israel.	55
Yathom, S., and J. Meisner, Insecticide trials against the potato tuber moth <i>Gnorimoschema operculella</i> Zell. (Gelechiidae, Lepidoptera).	167
List of Members of the Israel Society of Entomology	194

