This time Flea News is accompanied by:
- list 5 of 1974 literature and list 2 of 1975 titles
- a report on the First European Conference on Fleas
- a code-numbered list of all named species and subspecies of fleas
  (the first installment of Smit & Wright's Catalogue of Type Data)

FIRST EUROPEAN CONFERENCE ON FLEAS - This brave new venture already belongs
in the annals of the study of fleas. It was gratifying to see that in spite
of the present 'economic climate' nearly twenty interested persons of no less
than ten nationalities had been able to make the journey to Lund. Enclosed
factual report on the conference will remind participants of the three success-
ful and pleasant days and will give others some idea of what went on.

The success of the conference is due to the originator, Prof. Per Brinck,
and above all to Mrs Gunvor Brinck-Lindroth who energetically and ably bore
the brunt of the organisational work; Miss Gunilla Lindqvist and Mr Lars Lund-
qvist were great helpers.

NOTES

In the discussion which followed Dr Rothschild's lecture at the Lund Flea
Conference, on June 3rd, questions were asked about technical aspects of her
beautiful serial sections of fleas. Dr Rothschild remarked that she would
gladly offer her notes on the technique for publication in Flea News; this
welcome information is gratefully accepted (see verso).

A joint piece of work for the Conference members? - At one of our sessions
[First European Conference on Fleas] I made the informal suggestion that mem-
bers of the Conference [and others] could undertake a joint piece of research
before our next meeting. It occurs to me that the examination of the flea
fauna in the nest of the Collared Dove (Streptopelia decacoto) might be a
particularly easy, yet interesting, subject for collaboration. This bird has
extended its range dramatically in the last eight years, both northward and
southward from its previous habitat. No specific flea has been recorded for
the Collared Dove although this might exist, and we would probably be recording
the acquisition of stragglers, but this in itself could lead to some interest-
ning results. I would be willing to collect the data, amalgamate them with my
own, and write the paper after the next conference!

Miriam Rothschild

Dr H. Ribeiro - Congratulations are due to Dr Henrique Ribeiro for having
recently obtained a doctor's degree from the Lisboa University after success-
fully defending his excellent thesis dealing with "Siphonapteros de Angola"
which was subsequently published in the Anais do Instituto de Higiene e
Medicina Tropical, Lisboa, on 21 July 1975.

Exchange - Prof. R. E. Lewis (Ames, Iowa, U.S.A.) has available for exchange
material of certain North American fleas. Anyone interested: please contact
Professor Lewis.
SERIAL SECTION CUTTING OF FLEAS

Fixing - Fix living material in Dubosq-Brasil (1) for 12 hrs at 30°C. Material may then be stored for about one year in Dubosq-Brasil at room temperature but should be used as soon as possible for best results. If material is to be fixed in the field, warm tube of fixative with a match first and transfer to oven at 30°C as soon as possible afterwards.

Embedding - After fixing transfer directly to Supercedrol (G. T. Gurr Ltd, P.O.Box 53, Lane End Road, High Wycombe, Bucks. HP12 4HL, England) for at least 24 hrs, making 3 changes of Supercedrol during this period and with no more than 5 or 6 fleas in each 10 cc of Supercedrol. Wax embed by vacuum for 1 hr, the temperature being dependent on the melting point of the wax used. I recommend using a wax with a high melting point as it is necessary to have a hard wax for cutting hard material. Of course, one could use colloidin instead of wax but I have never been forced to use this yet.

On the other hand, Paraplast [see below] is a very convenient medium. I think that a vacuum embedding plant is a necessity, however; as fleas become very brittle when kept at a high temperature for a long period as is required when normal embedding techniques are employed.

Cutting - Sections are usually best cut at between 2-10 µm; I usually cut at 8 µm. The Flea is orientated so that the microtome knife comes in contact with the back (dorsum) of the insect first. This seems to prevent crushing of the legs, etc. The sections are transferred to a slide with egg albumen and distilled water and spread, dried and left in a warm place overnight.

Staining (a modified Mallory stain) - The wax is now gently melted, the slide put into xylol; absolute alcohol, alcohol 90%, 70%, 50%, distilled water (2-3 minutes in each) and then into azoacrin (2) for 5 minutes. Wash in distilled water. Differentiate in aniline alcohol (3) (one could check this with a microscope). Stop with acetic acid bath (4). Mordant in 5% phosphotungstic acid (5) for 1 hr. Wash rapidly in distilled water. Stain in aniline mixture (6) for 1 hr. Differentiate in 96% alcohol (stain will wash out quickly in a lower % of alcohol and the slide must therefore be put directly into 96% alcohol from the stain). Pass to absolute alcohol and xylol and mount in balsam. The stain is then quite stable.

Result - Nuclei - red; muscle - striated blue to red; arthrodermal membrane - blue; connective tissue - bright blue; tanned cuticle - yellow; untanned cuticle - red.

Solutions
(1) 150 cc alcohol 80%; 60 cc formol; 15 cc glacial acetic acid; 1 gram picric acid.
(2) 0.1% azoacrinine G. (Gurr) in distilled water, boil; when cold, filter through soft filter paper; add 1 cc glacial acetic acid per 100 cc.
(3) 1 cc aniline; 1 litre alcohol 90%.
(4) 1 cc glacial acetic acid; 100 cc alcohol 96%.
(5) 5% phosphotungstic acid freshly made up for each batch of slides.
(6) 0.5 gram aniline blue W.S. (Gurr); 2 gram orange G; 100 cc distilled water; add 8 cc glacial acetic acid, boil; filter when cold; dilute with twice the volume of distilled water.

M. Rothschild

PARAPLAST - this tissue embedding medium has the following advantages:

- eliminates ice cube cooling of knife or block; even if some wrinkles are present, they are easily removed by flattening the tissue on a water bath or slide warming table; no crumbling or cracking of ribbons; excellent ribbon continuity with serial sections up to 4 µm; no preliminary filtration; perfectly clear when melted; no changes in the usual solvents or staining techniques; the prepared blocks are clear without sign of granulations; sections adhere to slides perfectly; no stainable residue left on slide; 56-57°C [132-137°F] (ASTM) melting point.

LITERATURE ON SIPHONAPTERA PUBLISHED IN 1974 (list 5)


LITERATURE ON SIPHONAPTERA PUBLISHED IN 1975 (list 2)


George, R.S. - Siphonaptera, Fleas. in: J. Heath, Provisional atlas of the insects of the British Isles. (4): 12 pp., 60 maps.


Sinel'shchikov, V.A. - Faunistic complexes of inundated areas along the Dnyestr and their epidemiological potential in the transmission of diseases. Parasity Zhiv. Rast. (Kishinev) 8: 25-34.

Sinel'shchikov, V.A. - The exchange of ectoparasites of rodents and insectivores in the natural focus of tularemia in the inundated areas along the Irysh river. Parasity Zhiv. Rast. (Kishinev) 8: 35-40, figs. 1-4.


Sobey, W.R. & Conolly, D. - Myxomatosis: passive immunity in the offspring of immune rabbits (Oryctolagus cuniculus) infected with fleas (Spilopsyllus cuniculli Dale) and exposed to a myxoma virus. J. Hyg., Camb. 74(1): 43-55, figs. 1-5.


FIRST EUROPEAN CONFERENCE ON FLEAS

A CONCISE REPORT

Under the auspices of the University of Lund, Sweden, and supported by a grant from the Swedish Natural Sciences Research Council, the First European Conference on Fleas was held at the Zoological Institute, Lund, and at the associated Field Station, Stensöfja, from 3 - 5 June 1975.

The participants were:

Dr J. C. Beaucournu (Rennes, France)  
Miss G. Lindqvist (Lund, Sweden)
Prof. V. A. Bibikova (Moskva, U.S.S.R.)  
Prof. J. Ljőfövist (Lund, Sweden)
Prof. Dr P. Brinck (Lund, Sweden)  
Mr L. Lundqvist (Lund, Sweden)
Mrs G. Brinck-Lindroth (Lund, Sweden)  
Mr. I. Mehl (Oslo, Norway)
Miss E. van den Broek (Amsterdam,  
Dr. B. C. Nelson (Berkeley, U.S.A.)
Netherlands)  
Dr Tho. H. M. Rothschild (Ashton Vold,  
England)
Dr L. Christov (Sofia, Bulgaria)  
Dr O. I. Scalón (Stavropol', U.S.S.R.)
Mr R. S. George (Duxford, England)  
Dr G. P. Holland (Ottawa, Canada)
Dr H. E. Krampitz (München, Germany)  
Mr F. G. A. M. Smit (London, England)

In the evening of Monday, June 2nd, an informal welcome party in the Zoological Institute enabled participants to become acquainted with one another or to renew their acquaintanceship.

The conference was opened by Professor Per Brinck, Head of the Ecology Building of the University, in the conference room of the Ecology Building on Tuesday, June 3rd, at 9 a.m. After his words of welcome, messages were read of good wishes from Prof. Dr F. Peus (Berlin), Prof. Dr B. Rosický (Práha) and Dr M. Succi (București), who regrettably were unable to attend the conference. The function of chairman for the duration of the conference was kindly accepted by Dr George Holland.

The first lecture, on Photography and fleas, by Dr ROTHSCHILD, illustrated with numerous colour slides, was followed by a discussion. An exhibit of a large number of colour and black-and-white photomicrographs, mainly taken by Dr Rothschild, could be inspected (and admired) during an ensuing coffee-break as well as afterwards. Dr CHRISTOV read a paper by him and Dr M. HATTA on Species composition and distribution of Siphonaptera in Bulgaria. A discussion followed.

Lunch was enjoyed at the picturesque Dalby Gåstgivergård, 10 km outside Lund. Back in the conference room, Mr SMIT read a paper on The hind femur and tibia of fleas, with many illustrations, and Mr GEORGE explained the Possible sources of the British flea fauna. Both lectures elicited discussions.

After a tea-break, Prof. BIBIKOVA gave a hors-de-programme slide-show of a number of interesting parts of the U.S.S.R., including certain biotopes of hosts of fleas.

On Wednesday, June 4th, an excursion by bus, starting at 9 a.m., was made to the Kullaberg Nature Reserve in northwest Scania. En route stops were made: at Skärland for refreshments in an environment of serene beauty; at the nearby Kopparkatten which afforded a view over the interesting landscape of the eastern Småland; and at Krapperup Castle where Baroness Görel Gyllenstierna personally showed the party around the magnificent garden. The rocky Kullaberg promontory, about 5 km long, was reached at one o'clock and the party proceeded to the westernmost tip, where the rocks jut out into the sea. An excellent lunch was served at the restaurant in the Reserve, during which Professor Carl H. LINDBROTH - an honoured guest - gave an interesting exposition of the fauna and flora of Kullaberg. Earlier Mrs Brinck-Lindroth had distributed a pamphlet of her summary concerning the flea-fauna of the promontory. The old oak forest on the southern slopes of Kullaberg, at Ranevik, was subsequently visited and evidence of the comparative richness of flora and fauna was soon obtained. The party then enjoyed the hospitality of Mrs Brinck-Lindroth and Prof. Brinck for afternoon tea.
The morning session, on Thursday, June 5th, took place in the stylish Stensoffa Field Station (about 17 km east of Lund). Prof. BIBIKOVA read a paper On interrelationships between fleas and plague microbes and Dr BEAUCOURNU on Intérêt de l'examen extemporané des Siphonapteres, with illustrations. Discussions followed—as well as beverages. Dr SCALON gave a paper (read for her by Dr Holland) on Fleas of the sand-martin (Riparia riparia L.) in the territory of Eurasia and Miss VAN DEN BROEK dealt with Some considerations on the ecology of Typhloceras poppei Wagner and of its main host Apodemus sylvaticus on the Dutch island of Terschelling, with a number of slide projections. Both lectures aroused discussions.

Luncheon was served at the Field Station.

The afternoon session, attended also by Dr J. Prokopč of the Institute of Parasitology, Praha, was held in the conference room of the Ecology Building, Lund, and was opened by Mr Smit reading Prof. I. F. ZHOVTYI's paper on Studies on the ecology of Siphonaptera populations in Siberia and the Far East. This was followed by Mr Lundqvist reading Dr I. ULMAENN's paper on Snap traps and live traps in flea collecting and Mr Smit reading Dr N. T. KUNITSKAYA's contribution The physiological age of fleas and results of an analysis of the age composition of natural populations of Xenopsylla gerbilli. Mr Lundqvist subsequently explained the Data processing of a large material of small mammals and their ectoparasites. The final lecture was one by Mrs BRINCK-LINDROTH on Relationships between the shrew fleas Corrodopsylla birulai (Ioff) and Palaepsylla soricis (Dale) in northern Scandinavia.

The text of a lecture by Dr M. Suciu, entitled "Particulars concerning the Ctenophthalmus occurring in Romania" arrived unfortunately too late (on 9.VI).

Enquiries were made about the publication of various lectures. As no funds are available for printing "Proceedings" of the conference, it was suggested that authors themselves might arrange for publication of their lectures in suitable journals.

In the evening a splendid banquet, attended also by Professor Dr Erik Dahl, Head of the Zoological Institute, Lund, and by Mr Anders Edler, at the Stensoffa Field Station—with a chorus of nightingales in the surrounding bushes providing the music—closed the conference. Speeches, toasts and comments contained indications that the First European Conference on Fleas was a success and of value to the appreciative participants.

Dr The Hon. Miriam Rothschild kindly suggested that the second conference (not restricted to Europe) might take place at her home at Ashton Wold (+110 km N. of London [1 hr 10 min. by train], 45 km N.N.W. of Cambridge [no train service], 95 km N.E. of Oxford [no train service]), England, presumably in 1977.

The Organizing Committee
Gunvor Brinck-Lindroth
Lars Lundqvist
Frans Smit