

# Psocid News

## The Psocidologists' Newsletter

No. 1 (August 31, 2001)



Larva of *Ectopsocus* sp. found on TATAMI (Japanese mat).

### PREFACE

**Ian W. B. Thornton** (La Trobe University, Australia)

Hello everyone!

Kazunori Yoshizawa has asked me to write a short preface to the revived psocid news sheet. I started this some time back partly for the selfish reason that I would be able to find out what other psocidologists were up to, but there were more altruistic reasons too. All psocidologists had the means to be kept up-to-date with one another's current projects, and perhaps discussion on topics of current interest to a few workers could be canvassed to a wider audience. For workers outside the mainstream of English-speaking northern hemisphere countries I think it proved to be of great value, and particularly for grad students and those taking up psocids for the first time. If someone spotted a mention of psocids in more general ecological works this could be drawn to the attention of all, perhaps leading to interesting follow-ups. The Psocid News Sheet, as it was then known, I suppose would be called 'networking' today. It worked well for more than a decade under a succession of editors and then petered out.

I want to take this opportunity to say something to several of you. You see, the network is functioning already! Above my Mac I have a beautiful colour photograph of 14 psocidologists who attended the second international workshop on Psocoptera in Geneva in 1996, arranged in front of a group of mainly conifers that would normally be dripping with psocopterans but probably by the time the photo was taken had been beaten out completely! I couldn't attend that meeting because I was leading an expedition to Krakatau and Sebesi at the time (and incidentally the paper on Sebesi as a possible stepping stone to Krakatau is only now ready for submission!!!). But I have treasured that photograph, and the greetings, signed by all, ever since. There are one or two illegible signatures of young workers whom I cannot recognise, and Evan, who might have helped me in this, is now based in the outback somewhere (maybe the Psocid News will bring him into line). For example, there are four young ladies and I can make out only two feminine names - Susanne and Evelyn, and perhaps an Edie. Who is the fourth, and what are you all doing now? Psocid News will have the answer! In any case thank you all for the photo, and the thought behind it.

Kazu has volunteered to revive the news-sheet under a new name, Psocid News. Psocid News will be just as useful as we make it, no more and no less, and I ask all workers to cooperate with him. In these days of e-mail it should be much easier to provide him with the sort of input he needs to make it a success. There is no excuse!

Here's wishing Kazu and Psocid News a long and successful future, and best wishes to you all - old stagers and bright young things - Viva Psocoptera!!

## WHAT I HAVE BEEN UP TO LATELY

Alfonso N. García Aldrete (Instituto de Biología, UNAM, Mexico)

Dear colleagues:

I would like to start by stating that it is a great pleasure to have the former Psocid Newsletter, now Psocid News, alive again, in hopes that it keeps in good health for a good length of time (which of course depends on all of us), so thanks Ian for having been the inspirational mentor twisting Kazu's arm, and thanks Kazu for having accepted the challenge; I am sure it will be a success in increasing the communication among this admirable and select group of scholars devoted to the study of the Psocoptera.

Kazu mentioned in his letter that the central idea of the endeavor was, in general, to know what each member of the group is up to; well, I continue at UNAM, living in Mexico City, which is no piece of cake (but it would be difficult for me to live anywhere else, although Rome I would not mind); I will be for another two years batting as Academic Secretary of the Biology Institute, the most important Mexican Institution dedicated to the study of biological diversity, a no piece of cake position, either, and during these years I have tried to keep an eye on psocids, sometimes even the two eyes, and well, if certainly a long breath *magnus opus*, such as my guru's revision of the Caeciliusidae, or Lienhard's book on the western palaeartic Psocoptera has not been produced (yet), I have managed to deliver the following few minor things (if I have overlooked sending reprints, please let me know):

- García Aldrete, A. N. 1998. Description of the male *Perucania longiareola* New & Thornton (Psocoptera: Ptiloneuridae). *Acta Zoologica Mexicana (N. S.)* 74:1-4
- García Aldrete, A. N. 1998. On the genus *Euplocania* Enderlein (Psocoptera: Ptiloneuridae) with description of a new species. *Proceedings of the Entomological Society of Washington* 100(4): 724-730
- García Aldrete, A. N. 1999. New North American *Lachesilla* in the *Forcepeta* group (Psocoptera: Lachesillidae). *Revista de Biología Tropical* 47(1-2): 163-188
- García Aldrete, A. N. 1999. New species of *Rhyopsocus* from Mexico (Insecta, Psocoptera, Psoquillidae). *Senckenbergiana biologica* 79(2): 225-229
- García Aldrete, A. N. 1999. Replacement names for some Psocoptera (Insecta) because of homonymy. *Entomologist's Monthly Magazine* 135: 243-244
- García Aldrete, A. N. 1999. New species of *Triplocania* Roesler from Mexico, Central and South America (Insecta, Psocoptera, Ptiloneuridae). *Spixiana* 22(2): 149-166
- García Aldrete, A. N. & J. A. Casasola. 1999. Psocoptera from the Calakmul Biosphere Reserve, and neighboring areas (Campeche, Mexico). *Florida Entomologist* 82(4): 505-531
- García Aldrete, A. N. 2000. New South American *Lachesilla* in the group *Forcepeta* (Psocoptera: Lachesillidae). *Acta Zoologica Mexicana (N. S.)* 80: 69-99
- García Aldrete, A. N. 2000. New species of *Lachesilla* (Psocoptera: Lachesillidae) in the group *andra* from Mexico. *Journal of the New York Entomological Society*
- García Aldrete, A. N. 2001. Genera of Psocoptera new to Mexico. *Entomological News* 112(2): 94-100
- García Aldrete, A. N. 2001. A second, sexual, Western Hemisphere species of *Thylacella* (Lepidopsocidae: Psocoptera). *Reichenbachia* (already published, but I have not seen it yet).

The following manuscripts are in press, to appear this year:

A new ectopsocid genus and species from Belize (Psocoptera: Ectopsocidae). *Entomologica basiliensis*

A new, extra South American species of *Euplocania* (Ptiloneuridae: Psocoptera). *Senckenbergiana*

*biologica*

Two new Nicaraguan *Triplocania* (Psocoptera: Ptiloneuridae). *Journal of the Kansas Entomological Society*

Atypical new species of *Lachesilla* in the *pedicularia* group (Psocoptera: Lachesillidae). *Proceedings of the Entomological Society of Washington*

A new *Echmepteryx* from northwestern Wisconsin, U. S. A. (Psocoptera: Lepidopsocidae). *Anales del Instituto de Biología, UNAM. Serie Zoológica* 72(1):

Remarkable records of Psocoptera in the neotropics. *Biogeographica*.

The most remarkable record here cited, is that of *Nepticulomima hösemanni* (Enderlein), found in Napo Province, Ecuador!

Last year I co-edited (of all things!), a book on helminth parasites, mostly on fishes: "Metazoan parasites in the Neotropics: A systematic and ecological perspective". 2000. Salgado Maldonado, G., A. N. García Aldrete & V. M. Vidal Martínez (Editors). Instituto de Biología, UNAM. 310 p. ( A more complete description on web page of the Biology Institute, cf. address above).

In 1999 my institution reached the age of 70 years, and to celebrate the event, we organized a symposium on Contemporary approaches for the study of biodiversity, held during 27-28 May, 1999; we had 16 presentations, on different areas of systematics, and we decided to publish the contributions as a book, in whose edition I also participated; it was also decided to publish the book in Spanish, addressed to the American Spanish-speaking countries, and it turned out nicely as "Enfoques contemporáneos para el estudio de la biodiversidad". 2001. Hernández Macías, H. M., A. N. García Aldrete, F. Alvarez & M. Ulloa (Editors). Instituto de Biología, UNAM. & Fondo de Cultura Económica. Mexico. 413 p. The book includes contributions by Kevin Nixon on cladistics, Mauseth on Cactaceae, Wayne Maddison on biodiversity, Reaka-Kudla on coral reefs, Brooks on parasites and biodiversity, Jean Lodge on diversity of fungi, etcetera (Also, a more complete description on web page of the Institute, cf. address above).

Presently I am in the final edition process of a book on the Natural History of Chamela, an area of dry forest in the Mexican Pacific, recognized as a "hot spot" of biological diversity, and I am shooting to have it published before this year is over, so wish me luck.

And to return to the blessed Psocoptera, I figure that if I could dedicate 10 hours/day, Monday to Friday only (week ends are sacred to me, dedicated to the family, to catch up on homes affairs, to tend my plum trees, my Labrador dog, and to listen ancient music, mostly Johan Sebastian, anche il prete rosso veneziano, Monsieur de Saint Colombe & Marin Marais, and so many others, good companions also during the week), to study what I already have in the collection, I could well have enough work for at least 30 more years, but alas! I will not be here that long. Some of the projects requiring attention are the following, even having always in mind that are longa, vita brevis:

- to get to a better understanding of the Mexican psocid fauna, always popping up with surprises
- to chew on the sizable collections on hand, from Belize, Nicaragua, Tambopata, Perú, and Napo, Ecuador; these two latter truly flabbergasting!
- to get to an understanding of the systematics of my beloved *Lachesilla*, something that would first require a significant increase in the taxonomy of the genus, in which, and from memory only, at least 150 species need to be described; I have thought of a cladistic approach to it, but given what needs to be done yet, it sounds like a long shot, any ideas?

My interest in the taxonomy of *Lachesilla* has been challenged by the beauty and diversity of the Epipsocetae, also a fascinating group, as Gary Eertmoed well knew, but still, my next papers will be on the Lachesillidae of Nicaragua, an account that deals with 17 species (*Anomopsocus* a, three species of *Prolachesilla*, and 13 species of *Lachesilla*, three of them described in the paper. Also, I have everything (but the time), to start writing The Lachesillidae

of Tambopata, Perú (only two genera, *Nadleria*, with two species, and 32 species of *Lachesilla*, 25 of them undescribed!).

My student Arturo Casasola is about to get a Master's degree with a revision of *Goja*, and he is about to start a doctoral project on the classification of the Epipsocetae, but he will tell you more about that in his own space.

It seems that the study of psocids in this part of the world, perhaps in the whole world is in a sorry state, there is so much to do and we are so few to do it, but as the famous and laureate Madagascan philosopher Chapita once said, in Spanish: "Se hace lo que se puede".

## **WORLD CATALOGUE AND BIBLIOGRAPHY OF PSOCOPTERA**

**Charles Lienhard** (Geneva Natural History Museum, Switzerland)

**Courtenay N. Smithers** (Australian Museum, Australia)

The urgent need for a comprehensive up-to-date catalogue has been emphasized by several colleagues during many years and confirmed at the 1996 Workshop on Psocoptera in Geneva. Using the rather unique deadline of the end of a century (31 of December 2000) we try to offer soon this working tool to psocidologists and other entomologists (= future psocidologists?). We are particularly pleased that the manuscript has been accepted for publication in the series *Instrumenta Biodiversitatis*, published by the Geneva Natural History Museum, which explicitly has the aim of offering working tools for biodiversity research.

This catalogue will include the about 4400 species (372 genera, 41 families) described up to the end of the year 2000. It has a double aim: to present (1) a complete list of taxonomically valid genera and species of the order Psocoptera (including Cenozoic and Cretaceous Amber fossils) with complete synonymic references and (2) a most comprehensive list of non-nomenclatural references, especially those concerning geographical distribution of the Psocoptera species of the world.

Contrary to most published species lists of particular insect groups, this catalogue cites for each species practically all literature references on which our knowledge of its distribution, morphology, biology, ecology etc. is based. In the future, a critical assessment of this information, especially concerning distribution, should be more easily possible than with a comprehensive presentation lacking detailed bibliographical references. We hope also that this documentation makes it relatively easy for the specialist to trace the entire published material kept in scientific collections for checking it when revising problematic taxa.

By introducing the heading "Gen. spec." at the beginning of each genus treatment we try to give access also to references (published since 1950) where unidentified material assigned to the genus concerned has been mentioned. Some general information on distribution or biology of several genera would have been lost if only data on identified species had been evaluated for the catalogue (e. g. *Liposcelis* spec.). These references could also give access to the original material for further taxonomic studies.

If all goes well the book will come out in 2002, it will be sold by the Geneva Museum (its price has not yet been fixed).

## **AUSTRALIAN MUSEUM - RE-HOUSING OF PSOCOPTERA COLLECTION**

**Courtenay N. Smithers** (Australian Museum, Australia)

In the mid-1980s the Entomology Department and the insect collections (including the Psocoptera) of the Australian Museum were moved to a building on the corner of Yurong and Stanley Streets, a short distance from the main Museum buildings. The material preserved in alcohol was housed on the lower floor and the pinned material, laboratories and entomological library were on a floor above. The material preserved in alcohol (including Psocoptera) has recently been returned to its previous location near the main building. The storage area where it is housed is now fitted with a sophisticated fire detection and suppression system and the

material is housed on mobile compacts shelving. The laboratories, pinned collections and microscope slide collections remain at the Yurong Street site.

## **DID DINOSAURS HAVE LICE?**

**Kevin P. Johnson** (Illinois Natural History Survey, USA)

I am investigating the phylogenetic relationships among the Psocodea to study the origins of parasitism in Phthiraptera (lice). This study involves several collaborators including Steve Barker, Michael Whiting, and Edward Mockford. We are using DNA sequences for representatives of Psocoptera and Phthiraptera to identify the sister taxon of Phthiraptera. Most insect taxonomists would agree that Psocoptera and Phthiraptera are closely related. However, there is debate over whether Phthiraptera is the sister taxon to Psocoptera or imbedded within Psocoptera (Lyal, 1985). This latter scenario would make Psocoptera a paraphyletic insect order. Resolution of this question also bears on the age of parasitism in Phthiraptera, i.e. whether parasitism evolved before the origins of birds and mammals or after. Did dinosaurs have lice?

Preliminary investigations using the 18S and COI genes have indicated some, but tentative, support for Lyal's (1985) scenario. However, the sampling of taxa within Psocoptera and Phthiraptera is still relatively sparse. We intend to greatly expand this study to include many more taxa both within Psocoptera and Phthiraptera. Additional genes also need to be added to our study before conclusive results can be obtained. Ideally we hope to represent nearly all families of Psocoptera as well as all the major lineages of Phthiraptera. Specimens of Phthiraptera are currently available for most major lineages, but we currently have only a few specimens of Psocoptera. Sampling will need to be especially thorough within the suborder Troctomorpha, because under Lyal's hypothesis, this group contains the sister taxon to Phthiraptera. Because of the difficulties of obtaining specimens of the world's diversity of Psocoptera in a single study, we would be extremely grateful for any specimens that Psocoptera collectors around the world would be willing to contribute.

Those wishing to contribute specimens to this study should preserve relatively fresh specimens in 95-100% ethanol. Generally 1 - 5 specimens per species are sufficient for our work. It is usually quite difficult to extract DNA from samples that have been stored in 70% ethanol for longer than one year. We extract DNA from whole individual specimens, which are retained as vouchers after the DNA extraction - the exoskeleton remains intact. All contributions will be acknowledged in any publications resulting from this work. Specimens can be mailed to me at the following address

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## **DID DINOSAURS HAVE FEATHERS?**

**- BACKGROUND OF THE ORIGIN OF LICE-**

(REPLY TO KEVIN JOHNSON)

**Kazunori Yoshizawa** (Hokkaido University, Japan)

I received the above article from Dr Johnson on June 15. Two days later, I made an oral presentation at the 37th Annual Meeting of Japan Society of Systematic Zoology, entitled "Are book-lice true-lice?" - a DNA-based phylogenetic analysis of Psocoptera and Phthiraptera. About a year before, I also made a presentation at the 60th annual meeting of Entomological Society of Japan, entitled "Origin of Phthiraptera inferred from DNA sequences." Surprisingly, my purpose

is completely identical with Dr Johnson's!

My study is based on the mitochondrial 12S and 16S rDNA partial sequences, and the preliminary results based on those sequences strongly support the Lyal's hypothesis. My data set is smaller than Dr Johnson's one but includes different sequences and taxa. I hope my data could contribute to uncover the origin of Phthiraptera and I also hope that this study will be done with cooperation between us. As noted by Dr Johnson, samples of Troctomorpha are the most important to test the Lyal's hypothesis. My sample contains only a few troctomorphan species (two amphientomids, one pachytroctid and two *Liposcelis*) and thus I also ask the readers' support for sampling to me or Dr Johnson.

Concerning to the origin of chewing lice, I have a little bit different idea. The insects never parasite to animal without feather or hair. Thus, for example, if result of the DNA study suggest the first host of Phthiraptera as birds rather than mammals, and that the origin of Phthiraptera is earlier than that of *Archaeopteryx*, it may possibly suggest that dinosaurs have feathers, or there were older birds than *Archaeopteryx*!

## RESEARCH PROGRAMS

**Khalaf Ahmed** (Ain Shams University, Egypt)

Many *Liposcelis* species reproduce asexually by parthenogenesis. On the other hand *L. subfuscus* and *L. serricoris* are sexually reproduced. Males of the latter two species have biflagellated tailed sperm. Biflagellated sperm were recorded by Baccetti in O. Mallophaga and O. Siphunculata. Recent findings emphasized that biflagellated sperm is a phylogenetic character expressed at various levels by different families of Psocoptera (King and Ahmed, 1989). Biflagellated sperm form an obstacle to the sexual reproduction as the two tailed sperm move slowly and abnormally and fail in most cases fertilize ova. This explains why so many *Liposcelis* spp. are forced to reproduce parthenogenitically. The present investigation are looking at the process of spermatogenesis in *L. subfuscus* and *L. serricoris* to clarify whether the process is different from that described other species and families of Psocoptera. In a parallel line of investigation other group are verifying the bearing of oogenesis in the phylogeny of Mallophaga, Siphunculata and Psocoptera.

**Mei-Ling Chan** (National Museum of Natural Science, Taiwan)

Taiwan is located at subtropical and tropical area, mostly with high humidity and high temperature. As I work at museum, I found most of the collection was suffering by psocids. So when I had the chance to study PhD degree, I wish to know the relationships between psocids and collections. My study might be divided into three parts, studying the taxonomy of Troctomorpha and Trogiomorpha species in Taiwan, monitoring psocids of different kind of museums to find the pest problem, and using some certain DNA fragments to know the differences of *Liposcelis* species found in different kind of museum. My collections of psocopteran are mainly based on the field sweeping, and samples from malaise trap and bird nests. I also used vacuum sucker to obtain samples from different kinds of museums and I found *Liposcelis* species happened nearly everywhere. From SEM observation and 16S rDNA sequence data, they are supposed to be the same species, *Liposcelis bostrychophilus*. But there is a little variation from different populations. However, more samples are needed to be examined and verified. I hope in near future that I will be able to offer some suggestions of pest management to the collection managers in different kinds of museums after finishing my study and also build more information of psocopteran fauna of Taiwan.

**Zuzana Kucerova** (Research Institute of Crop Production, Czech Republic)

I am now studying external morphology of eggs of stored product pests including psocids. Within this project I prepare determination key of stored product psocids eggs.

**Charles Lienhard** (Geneva Natural History Museum, Switzerland)

At the moment I am especially interested in the fauna of some marginal regions of the Western Palaearctic: the Atlantic islands of Macaronesia (Azores, Madeira, Canary islands, Cabo Verde) and, on the other side, the Arabian Peninsula. The Geneva Museum has rich collections from both regions, which have only superficially been studied up to now.

For the Macaronesian work I collaborate with Arturo Baz, who receives regularly new material from current ecological and faunistic studies made by Portuguese and Spanish people on some of the these islands. Several new endemic species have to be described, and the geographical distribution has to be analysed. I intend to treat this interesting fauna in a comprehensive monograph which would be a complement to my 1998 book on the euro-mediterranean psocids.

I also continue my studies in the Mediterranean region, especially Greece and Italy, and I am very interested in all material available from all the above mentioned parts of Western Palaearctic. Unfortunately, in ecological trap-programs psocids are not always sorted out. Everybody who knows colleagues collaborating in such projects should incite them to pay more attention to our nice little friends. If the material is not too much damaged it should be sent to a specialist for identification.

I am also interested in psocids from SE-Asia, which are particularly well represented in the collection of the Geneva Museum (especially Thailand and East-Malaysia). In the future I intend to study some particular families of this fascinating material.

**Courtenay N. Smithers** (Australian Museum, Australia)

Several research projects are under way or planned:

- Psocoptera species Catalogue - Work has been under way for some time (with Charles Lienhard) on a catalogue of the Psocoptera. Charles will be reporting on this.
- Family revisions of Australian species - My main project from now on will be an attempt to provide a comprehensive account of the Australian Psocoptera. It is proposed to do this initially on a family by family basis, leading to a full treatment of the Australian fauna.

Smaller projects:

- Lord Howe Island Survey - The Australian Museum is conducting a survey on Lord Howe Island which it is hoped will provide material equivalent to that previously accumulated from Norfolk Island.
- Seychelles Survey - Two batches of material collected in the survey of the Seychelle Islands, being conducted by Justin Gerlach, have been received. Already it is clear that several of the species described by Enderlein from the Seychelles are represented from which it will be possible to provide augmented descriptions. There are also at least a few species represented which were not recorded by Enderlein. When final material is received from the survey it will all be worked up as a unit and should provide a good account of the Seychelles Psocoptera.
- Small collections - There are a few smaller collections, mainly Australian, already in the Australian Museum, such as Malaise trap material, collections from Nature Reserves, National Parks and other specific areas or surveys, which will be worked up as units. The results will contribute to the major revisions of families.

**Kazunori Yoshizawa** (Hokkaido University, Japan)

The following projects are now in process:

- Systematics and biogeography of Mexican *Trichadenotecnum* (with A. N. García Aldrete & E. L. Mockford: preliminary result will be presented at the 61th Annual Meeting of the Entomological Society of Japan on Sept 21, 2001)
- Revision of Japanese Amphipsocidae (coming soon on *Insecta Matsumurana*: see below)

- Phylogeny and higher classification of Psocomorpha (part of my unpublished PhD thesis)
- Morphology of head and mouthparts in Psocoptera
- Listing of Okamoto's type specimens (most of *Caecilius* types are not found)
- Phylogenetic position and origin of Phthiraptera (see above)

## INTRODUCTION OF INSECTA MATSUMURANA

**Kazunori Yoshizawa** (Hokkaido University, Japan)

Probably you are not familiar with *Insecta Matsumurana*, an entomological journal published by the Systematic Entomology of Hokkaido University since 1926. This is one of the oldest entomological journals in Japan, as old as *Kontyû* (now *Entomological Science*: an official journal of the Entomological Society of Japan: *Kontyû* means insects in Japanese). Although no psocid paper has been published in *Insecta Matsumurana* so far, my paper will appear regularly in the future issues (taxonomic revision of Japanese Amphipsocidae will probably appear in the forthcoming issue).

At the present, we distribute the journal to 243 world institutes and libraries (excluding Japan) by journal exchange, and the Systematic Entomology of Hokkaido University eagerly want to exchange *Insecta Matsumurana* with the journal of your institute. Please let me know if your institute wants to get *Insecta Matsumurana* by journal exchange, or if you want a sample copy of the journal. *Insecta Matsumurana* is (usually) published once a year. Contents and abstracts of some recent issues are available from the following URL address:

<http://insect3.agr.hokudai.ac.jp/insecta-matsumurana/>

The journal was named after Dr Shonen Matsumura, founder of the Entomological Institute of Hokkaido University. His name may be familiar to psocidologists as a generic name, *Matsumuraiella* (Amphipsocidae), which was dedicated to him by Dr Enderlein.

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## **EDITORIAL**

### **Psocidologists' Home Page - PsocoNet**

For the entrance to the web-version of the Psocid News, I made a web page named PsocoNet at the following URL address:

**<<http://psocoptera.org>>**

or <http://insect3.agr.hokudai.ac.jp/psoco-web/psoco-net/index.html>

Yes, I got a domain name "psocoptera.org" for the PsocoNet. From the PsocoNet, you can get all the back issues of the Psocid News, addition to the list of the world psocidologists (ie. readers of the Psocid News) and links to some psocid web pages. The PsocoNet is working on a server at the Systematic Entomology of Hokkaido University which is maintained by myself.

### **Next issue**

About early 2002. Please let me have all contributions by the end of 2001 if possible. I look forward to hearing from you.

### **Editorial address**

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