© Biodiversity Heritage Library, http://www.biodiversitylibrary.org/; www.zobodat.at

13,867

20. Januar 1912. No. 2. XXVII. Jahrgang.

Societas entomologica.

Organ für den internationalen Entomologen-Verein.
Journal de la Société entomologique internationale.
Journal of the International Entomological Society.
„Vereinigt mit Entomologischer Rundschau und Insektenbörse."

Gegründet 1886 von *Fritz Rühl*, fortgeführt von seinen Erben unter Mitwirkung bedeutender Entomologen und hervorragender Fachleute.

Toute la correspondance scientifique et les contributions originales sont à envoyer aux **Héritiers de Mr. Fritz Rühl à Zurich V.** Pour toutes les autres communications, payements etc. s'adresser à **Verlag des Seitz'schen Werkes (Alfred Kernen), Stuttgart, Poststr. 7.**

Alle wissenschaftlichen Mitteilungen und Originalbeiträge sind an **Herrn Fritz Rühl's Erben in Zürich V** zu richten, geschäftliche Mitteilungen, Zahlungen etc. dagegen direkt an den **Verlag des Seitz'schen Werkes (Alfred Kernen), Stuttgart, Poststr. 7.**

Any scientific correspondence and original contributions to be addressed to **Mr. Fritz Rühl's Heirs in Zürich V.** All other communications, payments etc. to be sent to **Verlag des Seitz'schen Werkes (Alfred Kernen), Stuttgart, Poststr. 7.**

Die *Societas entomologica* erscheint gemeinsam mit der Entomologischen Rundschau und der Insektenbörse. Abonnementspreis der 3 vereinigten Zeitschriften **Mk. 1.50 vierteljährlich** bei postfreier Zusendung innerhalb Deutschland und Oesterreich, fürs Ausland Portozuschlag — **50 Pfennig** vierteljährlich. Erfüllungsort beiderseits Stuttgart.

57: 16. 5

Insects destructive to Books.[1])

By *William R. Reinick.*

Chief of the Department of Public Documents,
The Free Library of Philadelphia.

Through and through the inspired leaves,
Ye maggots, make your windings;
But oh! respect his lordship's taste,
And spare his golden bindings.
Robert Burns.

The leather is destroyed by a number of species of beetles, such as *Lasioderma serricorne*, *Attagenus piceus*, *Dermestes lardarius*, and *Anthrenus scrophulariae*.

Wood Bindings. — The beetles, *Anobium hirtum* and *Ptilinus serricornis*, are found making galleries in the wooden covers of books.

Poisons Used, Mineral. — We have in the minerals of the earth many poisons, one of which, arsenic, is of especial interest, as it has been the established rule of the wall paper manufacturers to use it in large quantities; and this poison is one that attracts various species of insects on account of its medicinal value. Just as human beings take poisons in proportionate ratio to the needs of their systems, and especially arsenic, for their health, so do the insects and lower forms of life, which have an instinct beyond the ordinary comprehension, need it; and they find it in the wall papers and colored illustrations printed on the bindings and in books. Where sulphur is used, other species will be attracted, and so on with the various poisons which are used in the arts. The „bed-bug" also finds food in the poison used, such as arsenic, Paris green, etc. The idea that this insect is found only where uncleanliness prevails has long since been rejected, as it is constantly found where absolute cleanliness prevails.

Flies will cling to wall paper, especially in damp weather. This is due to the moisture in the atmosphere causing the poisons in the paper, which flies are primarily after, to become soft enough for them to eat.

Gases; from Heat. — It is accepted as a fact by scientists to-day that the nature and character of life, in the material sense of evolution, has for its base the heat generated by the physical sun, assisted by the moisture of the atmosphere, and the darkened chambers of the earth, which are necessary in the first stages of all life production. Books in a very dry and warm location will be found to be subject to attacks of species of *Thysanura* and *Collembola*, which are naturally attracted by heat; and, as heat rises, the books on the top shelves will be found to be the ones damaged by these insects. They are seldom found where it is damp.

The spring-tails. *Lepidocyrtus americanus*, and the silver-fish, *Lepisma saccharina*, come under this group.

Gases; Poisonous, etc., Combined. — The tree, from which is made the wood pulp used in the manufacture of paper, has its roots shooting down into the bowels of the earth, and its branches and leaves reaching up into the heavens. The roots are fed by a varied combination of elements, mineral, gaseous, and vegetable, and these elements, taken in by the roots, are by a wonderful system of arteries carried into every portion of the tree, and insects are, thus able to get all elements that are necessary for them to sustain life. The pores of the skin are the health holes of the body, and in a sore, unless it is sterilized, life is bound to start, and that first life again is worm life, no matter how carefully the wound is protected on the outside. If a microscope was used, the body would be found to be covered with animated matter. The insects, preying upon animal life, are after the poisons exuded by the blood and skin.

[1]) Reprinted from American Journal of Pharmacy 1910.

© Biodiversity Heritage Library, http://www.biodiversitylibrary.org/; www.zobodat.at

Omnivorous. — Among the insects which can find food in all portions of the books may be mentioned the beetles, *Sitodrepa panicea* and *Tribolium confusum*.

Carnivorous. — The following are some of the forms of life found preying upon insects found in libraries, the centipede, *Scutigera forceps*, pseudoscorpions, *Bryobia praetensis* and *Tryoglyphus longior*. I believe that investigation will show that the two last species are injurious to books.

Researches. — Some of the statements here made seem radical, but when it is considered how little is known of the life habits of the lower forms of life, on the one hand, and the facts given by the few life histories that are known, on the other, it does not appear to me unreasonable to place this theory before the public. Especially so, as my own experiments are showing results entirely different from anything hitherto published.

It is known that the eggs of the insects under adverse conditions will stay fertile for long periods of time; that the eggs will also stand a very high or low temperature; and, on account of the toughness of their skin or shell, are also able to stand a great deal of handling and pressure without being crushed or broken. At an institution with which I was officially connected for a number of years, a lot of mosquito eggs were received from Cuba. These eggs had been attached to a piece of rough blotting paper, and sent to us through the mails. Upon receiving them, thinking that they had been ruined by the rough handling and pressure that they must have received in transit, the blotting paper was thrown aside and allowed to lay exposed to the dust of the atmosphere and the rays of the sun for many months. One day, in a spirit of fun, some one threw the blotting paper into some water, and, to the surprise of all, in a very short time, the larvae were swimming around as though nothing had ever happened to them.

All plants, vegetables, trees, etc., have certain combinations of chemical elements which are only found in them, as is known from chemical analyses which have been made of material from them, and each of these have certain forms of life which live upon them, and whenever any of these trees, etc., are used in the manufacture of paper and preparation of leathers, eggs of the different species are most likely to be found incorporated in the material; hibernating, as it were, until the proper conditions through heat or dampness come about, giving life to the germ within, and in a very short time the little worm is enjoying life, although being evoluted perhaps, later than nature intended it to be.

Again, wandering insects come into the library, and their instinct tells them what books contain the particular food or medicine for which they are seeking. These little insects pass through their various states of evolution, with long periods of life, which are unknown to the finite mind of man as to the exactness of the length of their lives, and are always evoluting up to a point of superior consciousness. We must give credit to the entomologists for their researches as to the laying of the eggs of the winged insects, that in time, by the active energies of the physical universe, produce life which becomes expressive, by a process of incubation which has been very little considered. These various illustrations are exhibited to express the nature and character of that which has been infectious to the libraries of the world. While many of them will seek for the paste, it is not always that which attracts them. They are also attracted by the mineral and vegetable substances found in books.

Disease Carriers. — Just as deseases are carried by flies, the seeds of plants by birds and the winds, so are contagious diseases carried to new locations by books and papers. Flies coming from putrid matter, of from a person suffering from a contagious disease, by depositing disease germs on books provide the means, if given the proper conditions, of spreading these deseases to a locality where they were unknown before, not to mention the possibilities of fleas, germs, and bacteria. From my knowledge of the ability of bacteria to attach themselves to paper, I am positive that future research will show that books and papers have been the means of spreading many cases of disease. The question of doing away with bank notes has been agitated for years, on account of the desease germs and bacteria carried on them, absorbed from the unclean hands which handle them. A letter received by me from the United States Bureau of Animal Industry states that, „Several years ago, however, at the request of a Representative in Congress, an examination was made by this bureau of a one-dollar Treasury note with view ef determining the number of organisms thereon. The note used for the investigation was obtained on February 3, 1904, from the U. S. Treasury, having been withdrawn on that date from circulation. It belonged to Series 1890, and hence had been in circulation thirteen years. While the note looked very old and quite soiled, one often receives notes of even worse appearance in ordinary business transactions.

„The note in question was subjected to the ordinary laboratory manipulations for determining the number of micro-organisms upon it which were capable of vegetation and development, and as a result of this examination it was found that there were 13,518,000 living micro-organisms present on this note. These consisted principally of the organisms popularly known as bacteria and fungi.“ Uncleanliness is more to blame than the paste in the books for insects found destroying them.

The fleas, *Pulex serraticeps*, and other species, and the *Acarina*, or pseudoscorpions, are also capable of carrying disease germs.

Remedies. — As far as the destruction of these insects by poison is concerned, they are practically worthless, because, whenever the poison is used to destroy one it will attract other insects that have need for that poison. Uncleanliness of the human family also helps to supply the needs of the bookworm. Men and women do not give the proper consideration to their hands, going from the dining-room into the library, either public or private. Nature, by its process under the great infinite power, has supplied

© Biodiversity Heritage Library, http://www.biodiversitylibrary.org/; www.zobodat.at

the skin of the human body with scales and pores, and these, acting upon their functional duties, are constantly discarting that which the body in a healthful state does not want. In perspiration, which is moisture, there is thrown from the pores of the skin a combination of mineral and vegetable acids, and this may all be summed up in the word „dirt". This combination, or dirt, contains food for a number of species of insects. When the hands which are soiled are laid on clean paper, some of the matter attached to the hands will be left upon the paper, in this way producing food for insects. We say this, because man from a material stand-point has his grosser body made of matter, and matter in a concrete form is made of the dust of earth. Cleanliness in the handling of papers, books, and documents will be of more value than all the poisons combined. Let common-sense prevail, make sanitary rules in the home and in the public library an enforced rule, and it will lessen and arrest the rapid growth of the little insects which feed upon our silent friends of so much value to us, besides eliminating the possibilities of contagious diseases. The library of the future will be found to contain laboratories where every one wishing to make use of the books in the collection will first have to thoroughly cleanse his or her hands. This is a subject which should be considered in the near future by the bacteriologist, as well as the entomologist, biologist, and general visitors to the halls of learning.

---

57. 99 (6)

Neue und wenig bekannte afrikanische Bienen der Gattungen *Eriades, Steganomus und Prosopis.*

Von *Embrik Strand,*
(Berlin, Kgl. Zoolog. Museum).

(Fortsetzung.)

Kopf. Mandibeln ziemlich schmal, stark gekielt, am Ende mit zwei gleich großen Zähnen nebeneinander, dann folgt ein größerer Zwischenraum, der innen von einem dritten Zahn begrenzt wird. Clypeus und Stirnschild längs der Mitte etwas glänzend, wegen der glatten Zwischenräume der recht kräftigen Punktgruben, die z. T. um mehr als ihren Durchmesser unter sich entfernt sind. Das erste Geißelglied ist um kaum ein ⅓ länger als das zweite und äußerst wenig länger als das dritte. Scheitel, Mesonotum und Scutellum fast matt mit sehr kräftigen, unter sich durch fast leistenförmige Zwischenräume entfernten Punktgruben. Rückensegmente des Abdomen glänzend, die Punktgruben seichter als die des Thoraxrückens und unter sich um etwa ihren Durchmesser entfernt. — Das 6. Segment auf der Bauchseite gelegen, unmittelbar vor dem Hinterrande trägt es eine seichte Quereinsenkung, längs der Mitte Andeutung einer schwachen Erhöhung. Anscheinend von der Oberseite des Vorderrandes dieses Segments entspringen vier kleine, bräunlichgelbe, kurz kolbenförmige, unter sich entfernte, parallel nach vorn gerichtete Fortsätze, die nur unter der Lupe deutlich zu sehen sind und mitten durch einen größeren Zwischenraum unter sich entfernt sind.

Körperlänge kaum 5 mm, Flügellänge 3,5 mm.

(Fortsetzung folgt.)

---

57. 89 Parnassius (57. 6)

„Parnassiana".

III.

Der Apollo aus dem Sajangebirge

(Parnassius Apollo L, var. sojoticus m., nov. subsp.)
(mit 4 Abbildungen).

Von *F. Bryk.*

Das nördlichste Gebirge des sich strahlenförmig vom Altai ziehenden Kettenbündels, der Chrebet Sajanskij (das früher bis auf Humboldt zusammen mit dem Apfelgebirge zum Altai gezogen wurde) wird von einer für Asien winzigen Apolloform bevölkert, die ihrem Gebirge gleich das den eigentlichen Altai mit dem Apfelgebirge überbrückt, den Uebergang vom östlichsten *var. hesebolus Nordm.* zum sibirischen *var. Alpherakyi* Krul. bildet.

„Verity", der diese Form (wie auch die *var. Adolphi m.*) gesehen und nicht angeführt hat, „hielt sie für typische hesebolus" (aus einem Briefe von Otto-Bang-Haas 9. IX.). Veritys Diagnose schreckt mich aber nicht ab, diese Rasse zu beschreiben und sogar zu benennen. Wenn man für jedes Dorf in den Alpen eine neue Subspecies kreiert, so wird es doch erlaubt sein, für ein Riesengebiet, durch welches sich das sajanische Gebirge zieht, eine Rasse aufzustellen — zumal sie sich von beiden Nachbarformen als Uebergangstypus markant unterscheidet.

Fig. 1. Ein heteromorphes ♂ (Vglmaß l. 39 mm; r. 37 mm); trotzdem in der Zeichnung nicht asymmetrisch, weshalb es ja als „Type" gelten kann [1]). Flügelform spitzig; Seitenrandfransen sehr dunkel. Mittelzellfleck sechseckig. Der beim *hesebolus* verkleinerte Hinterrandfleck ist noch mehr reduziert und länglich in verticaler Richtung zur Axillarisader verzogen. Submarginale ist schwach gezeichnet und nicht so S-förmig gebogen wie bei ♂♂ ex Irkutsk und der Kentei, die mir höflichst Herr Bang-Haas übersandt hat. Bei der Nordmannschen Type (zwei ♂♂, die mir Dank der Liebenswürdigkeit des Herrn Prof. John. Sahlberg vorliegen) ist die Submarginale bis auf ihr erstes Element ganz reduziert; „zur Spitze vor dem grauen Rande der Vorderflügel befindet sich ein deutlicher schwarzer Fleck, auch nimmt die Bestäubung an dem Afterrande der Hinterflügel nur einen schmalen Raum ein", heißt es ja bei Nordmann (l. c.). Bei unserem Sajanapoll ist

[1]) Auch eine der beiden Nordmannschen hesebolus-„Typen" ist heteromorph. (Vdfl. Lg. 42 mm, Br. 40 mm.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: Societas entomologica

Jahr/Year: 1912

Band/Volume: 27

Autor(en)/Author(s): Reinick William R.

Artikel/Article: Insects destructive to Books. 9-11