



Insect Rearing Group

FRASS

newsletter

Vol 16 No.1 November 1993

INSECT REARING FORMAL CONFERENCE

For those of you attending the national ESA meeting in Indianapolis, the rearing session will be held Tuesday (December 14) at 8:00 AM in Room 202. G. L. Bernon and M. A. Keena are coorganizing and co-moderating the sessions. Invited papers include "Uses of Laboratory Reared Insects, Rearing a Gypsy Moth Predator for Use in Experimental Release Programs, Field Insectary Sites for the Mass Production of Weed Biocontrol Insects, Mass Rearing of Beneficial Insects by USDA-APHIS to Support a Variety of Programs, Sterile Insect Release Programs: a Critical Use Application of Insect Mass-rearing, Use of Reared Insects at an Education Exhibit: World of Insects, Cincinnati Zoo, Rearing Honey Bees and Their Applications, Using Reared Insects to Screen New Compounds for Potential Use as Pesticides, Using Reared Insects for Genetic Analysis, Use of Mass Reared Fruit Flies for Mortality or Demographic Research, and Using Reared Insects to Address Urban Pest Issues." Submitted papers will follow. A brief business meeting will conclude the session. It is very important that those of us involved in rearing make an effort to attend the business meeting even if we cannot attend all of the presentations.

ALLERGIC TO ARTHROPODS?

A symposium on "Allergy and Immune Disorders Induced by Arthropods" will be held in rooms 101-102 of the ESA National Meeting on Tuesday, December 14, at 1:30 PM. J. O. Schmidt and W. D. Seabrook will be coorganizing and co-moderating. One of the

talks, *Arthropod Rearing and Allergy: a Professional Hazard*, presented by T. MacRae should be of interest to all of us rearing insects. It is paper # 0795 at 2:50 PM

POWERED AIR PURIFYING RESPIRATORS

The following was contributed by Gary Bernon: "At a recent meeting of the ESA, it was brought to my attention that the use of powered air purifying respirators, PAPR's, is not clearly understood by insect rearing personnel. Several supervisors specifically asked me for more information on the PAPR's that we use as illustrated in a slide that was presented at the meeting. This brief fact sheet is an attempt to address that issue; any reference to specific commercial products is not meant as an endorsement.

Allergic responses are a constant concern when rearing insects. Some species, and certain tasks, are always more likely to result in this type of problem. A further complication is that these allergic types of responses can be cumulative, even to the extent that workers can actually be unable to continue working with some insects after continued exposure. The standard protective device, a simple dust mask, is on some occasions not sufficient to solve the problem.

Powered air purifying respirators can be used when air is contaminated by particulate matter. They should not be used in oxygen deficient work environments. Also, the device described here should not be used for protection from chemical fumes or vapors. Mass rearing insects

can result in work environments with particulate air contamination. For example, Lepidoptera are prone to contaminate the air with wing scales, as well as other miscellaneous particulates from body surfaces. Although respirator masks will be suitable for some situations, PAPR's provide "state of the art" protection when air contamination from particulates poses a health risk that might require more protection than a respirator mask provides.

The device is powered or driven by an electrically operated blower with a rechargeable battery pack. The motor driven fan/blower is attached to filters and the entire unit can be belt-mounted and worn on the waist. Ambient air is drawn in through the filters. The filtered air then moves through a breathing tube and into the headpiece. Excess air is provided to the headpiece, assuring that leakage is outward, and as a result, the user is constantly breathing filtered purified air. One commercial producer of PAPR's is Racal Health and Safety Inc (1-800-682-9500). Racal refers to part of the PAPR worn on the waist as a Turbo Unit. A picture of Racal's turbo unit is [shown below]. In summary, a turbo unit will have four main parts: (1) motor with a fan/blower, (2) air filters, (3) battery pack, and (4) belt.



In addition to a turbo unit, a complete PAPR will also include a breathing tube, headpiece, and a battery recharger. The breathing tube connects the turbo unit to the headpiece. The headpiece assures that the user breathes only filtered purified air. The battery recharge unit is obviously not part of the PAPR to be worn, but will need electricity when used to recharge the battery. Cost for a complete Racal system is about \$800.

Please feel free to contact [Gary Bernon] directly at 508-428-3854 for more information."

AAZPA

The following was received from Gail R. Manning:

"The American Association of Zoological Parks and Aquariums (AAZPA) has formed a subgroup, the Invertebrate Taxon Advisory Group (ITAG). The objectives of ITAG include arthropod rearing, promoting exhibit/education programs, networking between institutions and organizations, and supporting research/conservation efforts on invertebrates.

I think ESA members involved in the Insect Rearing Group would be a good source of information for ITAG. Also, there could be opportunities (volunteer or otherwise) for people to do some fun projects with your local zoo, museum or other outreach programs.

I'd like to begin compiling a resource list, available to the ESA and ITAG members. If you wouldn't mind receiving an occasional phone call with a question about insects or rearing, or could be available for any of the above, or you simply want to find out more about ITAG, please contact:

Gail R. Manning, Invertebrate Department,
Dallas Museum of Natural History, P.O. Box
150349, Dallas TX 75315-0349. Phone 214-
670-8475 or FAX 214-428-4356".

XX INTERNATIONAL CONGRESS OF
ENTOMOLOGY--FLORENCE (ITALY)
AUGUST 25-31, 1996

The first circular states that "entomologists wishing to propose sectional symposia, workshops or special interest [rearing perhaps?] group meetings should write to the Congress Organizing Secretariat (O. I. C.) with details. The proposals are expected to reach the Congress Secretariat by the end of 1993." The address is:

Organizing Secretariat
O.I.C.
Via A. La Marmora, 24
50121 Florence (Italy)
Tel 39-55.5000631
Fax 39-55-5001912

SHIPPING PERMITS REQUIRED

A Federal permit, PPQ 526, is required for the movement of live plant pests, including biological control agents, into or through the United States. Contact Deborah Knott, USDA, APHIS, PPQ, Room 625, Federal Building, Hyattsville, MD 20782 to obtain your "Permit Information Packet". Also check with your local authorities.

A COMMERCIAL SOURCE OF CABBAGE LOOPERS

Lloyd Browne of Entopath sent us the following information:

"ENTOPATH Inc. is engaged in developing technology that uses living insects (bio-reactors) to produce biological insecticides, pharmaceutical agents, and other useful proteins. The Entopath process uses genetically altered insect-infecting viruses (baculoviruses) as gene vectors to change the immature insect's genetic makeup. The re-coded insect becomes a bio-reactor capable of producing large quantities of insecticidal and/or pharmacologically active agents."

"ENTOPATH Inc maintains an insectary in support of its research which produces high quality cabbage looper, *Trichoplusia m.* larvae. We produce an abundance of cabbage looper eggs and market the excess. Our colony has been treated to remove RNA viruses and many

other microorganisms. Eggs are freed from the laying sheets, surface sterilized, treated to prevent clumping, and shipped in insulated containers. Eggs will hatch within 24 hours of receipt. Eggs are sold in bulk by the thousand with a one thousand egg minimum order and in kits with rearing equipment ... for the biotech industry. We can usually fill your bulk orders on the same day and the kits within 24 hours. All shipments are by overnight express."

Contact Lloyd Browne by phone at (215) 250-0946 or by FAX at (215) 250-7078.

HELIOTHIS PREMIX DIET REQUIRES NO HEATING

Stonefly Industries is marketing a cold water soluble *Heliothis* premix diet that is prepared by spoon mixing (or with a cake type mixer) the prepackaged dry diet with cold water. The mix ratio is around 21 to 23% dry mix and 79 to 77% cold water. Formalin and acetic acid can be added if needed. No heating is required. A spoon is used to dispense the media into rearing containers. The instructions state that it is suitable for *Heliothis*, *Manduca*, looper, armyworms, and painted lady. It sounds ideal for incorporation bioassays where the chemical or biological agent can be mixed with the cold water used to make the diet. It should be quite valuable in many areas including rearing in schools and at home. At around \$20 per kilogram of premix, it is definitely worth trying. For information contact Robert L Harris, Stonefly Industries, Inc., P.O. Box 4264, Bryan, TX 77805-4264 or telephone (409) 776-1868.

NEW ADDRESS FOR WLMA, INC.

WLMA, profiled in the last FRASS newsletter, is a distributor for a wide selection of polystyrene, polyethelene, and paper cups with lids to suit. Their product line has been increased to include virtually any product most commonly used in scientific labs. There are no minimum order requirements. Contact them at their new address WLMA, 110 Edison Place, Newark, New Jersey 07102; phone (201) 333-5431; FAX (201) 333-2777, or at their booth at the national ESA meeting in Indianapolis.

PEOPLE

Dr. Nancy C. Hinkle has joined the Department of Entomology, University of California, Riverside CA 92521. She mentions that the Proceedings of 1st Symposium on Ectoparasites of Pets (available from the Department of Entomology, University of Kentucky, attn. Dr. Fred Knapp) has a section on "Current Status and Recent Advances in Rearing" featuring the following publications:

Hinkle, Nancy C., Philip G. Koehler, Bettina A. Moser, William H. Kern, Jr., and Richard S. Patterson. "Methods of Laboratory Rearing of Fleas."

Georgi, Jay R. and Marion E. Georgi. "Mass Production of Cat Fleas with an Artificial Dog."

Butler, J. F. "Current Status and Recent Advances in Rearing and Sampling Ticks."

NEW REARING BOOK

"Advances in Insect Rearing for Research and Pest Management", edited by Thomas E. Anderson and Norman C. Leppla, is now available. The flier reads, "The efficient production of large numbers of high-quality insects is a concern both for basic research and for the success of control programs for pests of agricultural and medical significance. This volume provides a comprehensive overview of this important issue, identifying the major applications for insect-rearing technology. The chapters, international in scope, cover genetics and molecular biology, insect rearing and the development of bioengineered crops, nutrition, digestion, and artificial diets, and the practical concerns of commercial insect rearing". The book is divided into sections dealing with Historical Perspective, Insect Rearing Research, Insect Rearing Support, Insect Rearing for Pest Management, and Insect Rearing in the Marketplace. Contact Westview Press, Customer Service Department, 5500 Central Avenue, Boulder, CO 80301-2847. Phone (303) 444-3541 or FAX (303) 449-3356. (Around \$69.50 plus postage and handling, 521 pages)

EATING INSECTS

Deliberate consumption of insects by humans is increasing in popularity (shades of Tom Turpin). I, for one, have done so to get pledges for my charity of choice. For each dollar pledged, I offered to eat one insect (cooked, of course). People are fascinated by the concept and will pay to see it.

The Food Insects Newsletter, published in March, July, and November, provides information to individuals interested in the various aspects of insectivory. Although it is free to anyone requesting it, contributions of \$5, \$10, or more are welcome. Checks should be made out to Board of Regents, University of Wisconsin, and designated Newsletter. To subscribe, write to *The Food Insects Newsletter*, Department of Entomology, 1630 Linden Drive, University of Wisconsin, Madison, Wisconsin 53706, USA. Phone (608) 262-5958 or (608) 262-3227. FAX 608-262-3322.

Another neat item is the worm (actually a beetle larva) in the tequilla flavored lollipop marketed by Hot Lix. It is a useful device in various insect presentations. For information about this item, call 1-800-EAT-WORM. No lie.

Frass Newsletter is a cooperative effort among the Insect Rearing Group designed to provide a vehicle for communication among individuals involved in all aspects of insect rearing. PLEASE PARTICIPATE by sending editorial comments, short papers on rearing techniques, information requests, requests for starter colonies, your source list for supplies, items for sale or trade, announcements, appropriate meeting dates, or other related news items. Items may be edited as needed.

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