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1. Hall, R. A. and Papierok, B., *Parasitol.*, 1982, **84**, 205.
2. McInnis, T. Jr. and Zattan, W. C., *J. Invertebr. Pathol.*, 1982, **39**, 98.
3. Snodgrass, R. E., *Principles of insect morpholoy*, McGraw-Hill, New York and London 1935.
4. Mohamed, A. K. A., Sikorowaki, P. P. and Bell, J. V., *J. Invertebr. Pathol.*, 1978, **31**, 345.
5. Sweevey, A. W., *Aust. J. Zool.*, 1975, **23**, 49.
6. McInnis, T. Jr. and Domnas, A., *J. Invertebr. Pathol.*, 1973, **22**, 313.

A TECHNIQUE TO OBTAIN NAKED PUPAE OF RICE MOTH *CORCYRA CEPHALONICA* STAINTON

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RICE MOTH, *Corcyra cephalonica* Stainton is an important storage pest with a wide host range of food materials. As its culture can conveniently be maintained under laboratory conditions and reared continuously, it is being widely used as a laboratory host for multiplying some of the common parasites of insect pests. However, it is not popular as a test insect in entomology laboratories for physiological and toxicological studies as the larva passes its instars under dense gallaries and pupating in silken cocoon. This phenomenon forms a hurdle in determining the age of the insect. In the process of utilizing this insect for physiological studies, a simple technique was developed to prevent concealment and utilize pupae of known age.

Rearing Corcyra cephalonica

Adults were collected from the laboratory stock by using suction aspirator and transferred to breeding jars. Since *C. cephalonica* prefers to lay eggs on rough surface[1], a wire mesh was introduced at the bottom of the breeding jar for egg laying. The eggs laid on bottom wire mesh were automatically collected in a pan kept below the breeding jar.

Clean eggs, 0.1 cc (approximately 2,200 eggs[2]) were mixed with 750 g of sterilized (80°C for 3 hr) broken grains of sorghum, which is known to be superior to all other food materials for this insect[3]. Sorghum grains were fortified with 1% yeast powder to improve the nutritional quality[4]. The larvae of *C. cephalonica* were maintained in battery jars (15 × 20 cm) at 30 ± 2°C.

Preventing grain cocoon formation by pupa:

The method described for *Galleria mellonella*[5] was adopted with suitable modifications to prevent cocoons with grain and frass around pupae of *C. cephalonica*. Pieces of transparent teflon tubes, 2 cm long and 3 mm diameter, were kept in a petridish so that the entire petridish was covered. The size of the teflon tube is so fixed that its length is sufficient for pupation of a single larva and the internal diameter, a little more than that of mature larva, just sufficient to permit construction of a thin silken cocoon only. The mature larvae, dirty white in colour throughout the body[1], were separated from the culture jars and released in the petridishes containing teflon tubes for pupation. Teflon tube acted as an artificial gallery and the larvae pupated inside the tube in a very thin transperant silken cocoon in 3–4 days. The petridishes were closely observed regularly at short intervals under illumination and those tubes showing light yellowish brown pupae were separated. Due to transparency of thin cocoon and teflon tube, the pupation time could be easily fixed. The pupae with thin transparent silken cocoons were carefully removed from teflon tubes with the help of forceps.

Setting free the pupae from silken cocoons:

The technique described for setting free the pupae of great wax moth *G. mellonella*[6] from their thin cocoons could also be successfully utilized for *C. cephalonica*. Groups of 10–20 pupae (less than 24 hour old) with cocoons were immersed in 1 N NaoH solution with the help of a nylon sieve for 15–30 seconds to dissolve the thinnest parts of the silken cocoon. Then the pupae

along with the sieve were put in water and turned around with a glass rod to remove NaoH and subsequently the undissolved parts of the cocoon were removed by hand. The alkali treated pupae were again cleaned with water and dried on a filter paper. Mortality was not noticed even when the pupae were kept in 1 N NaoH solution for 5–10 min. These naked pupae of known age were suitably utilized for the experiment.

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1. Krishna Ayyar, P. N., *Bull. Entomol. Res.*, 1934, **25,** 155.
2. Pershad. B., *Indian J. Entomol.*, 1975, **37,** 303.
3. Seshagiri Rao, D., *Indian J. Entomol.*, 1954, **16,** 95.
4. Krishna Murthy, B. and Seshagiri Rao, D., *Curr. Sci.*, 1945, **14,** 252.
5. De Wilde, J., Stall, G. B., De Kort, C. A. D., De Loof, A. and Board, G., *Proc. Kon. Ned. Akad. Westensch.*, 1968, **C71,** 321.
6. De Loof, A. and Van de Veire, M., *Experientia*, 1973, **25,** 366.

NEWS

LASER THERAPY FOR BURNS

The problem of surgical and therapeutical treatment of the patients with burns remains difficult uptill now. But the installation of lasers into surgical medical practice is considered to be very useful and effective. As is common knowledge, lasers are widely used in opthalmology, onkology, general surgery and other fields of medicine.

In 1968, Fidler was the first to use in experiments carbondioxide (CO_2) laser for removing burn escher in the early stages after trauma. Later on some reports were published concerning the application of carbondioxide laser with different methods of plastic wound coverage in experiments as well as in clinic (Fidler – 1974, 75; Levine – 1975; L. I. Gerasimova – 1982, etc). All the authors note the significant reduction of blood loss in the process of removing burn escher, the absence of radiation influence on the surrounding tissues, lowering of intoxication and reduction of the treatment terms. At present, very few surgeons are dealing with laser necrectomy.

Preliminary experimental investigations conducted on rabbits, at the Burn Unit of the Scientific Research Institute of Emergency Care by Sklifosovsky, Moscow, have demonstrated that the application of carbondioxide laser helps dissecting bloodlessly all necrottic tissues.

The early laser necrectomy favours decrease in blood toxity in a shorter time when compared to dermatoma necrectomy. The blood loss in laser necrectomy in the process of deep necrosis removal equal to 1 per cent, constitutes 15–20 millilitres as against 70–100 mililitres in dermatomic method, otherwise. The application of carbondioxide laser necrectomy, thus, reduces intra–operative blood loss to nearly a fifth.

Carbondioxide laser necrectomy gives the possibility of performing necrectomy in the early phases after burns on the entire body surface area with the minimum blood loss, which essentially speeds up the post-operative recovery. The patient remains active during the whole course of treatment and optimistic about the outcome. Autografting ameliorates condition of the patients even in such cases when it is performed in several stages.

Lately, low-energy lasers have been used in medicine more widely. Among the advantages of its action, the notable point is the absence of adverse effects on the tissues (which is necessary for sergical intervention) and the appearance of the activity increase in metabolic and regenerating processes.

Scientists and medicos now have made significant advances in the application of therapeutical Ultra-Violet (UV) laser for treatment of burn wounds, not easily healable, for a long time and for preparation of granulations for autografting as well.

Clinical experiments have demonstrated the high effectiveness of the Ultra – Violet Laser Therapy in complex rehabilitative management of patients with acute burn injuries. It has reduced to 10 days the time of healing, increased by 10 per cent the outcome of autografts survival and amelioration of the functional results. (Information Department of the USSR Embassy in India, 25 Barakhamba Road, Post Box. No. 241, New Delhi 110001.)