deposition and in extreme cases the ovarioles become very thin and get torn; which is not the case in *A. calamus* oil treatment wherein the ovary shows most regression near the oviduct.

The reports regarding the effects by various chemosterilants like metapa and hempa at different levels of various doses are available in literature. While in lower doses (20 μg) degeneration of vitellarium as a whole has been reported[2,4], the higher doses (30 μg) induce reversible changes and any further increase in the dose invariably proves lethal. But these investitations do not locate the initial site of the effect in the treated ovaries.

In the present study the treatment for two respective groups (6 days and 12 days) revealed a normal positive correlation coefficient of 1·0 with $(x - \bar{x}) = 0{\cdot}0004$ and $(y - \bar{y}) = 0{\cdot}0001$ in both the cases and thus significant in both the curves (Fig. 1).

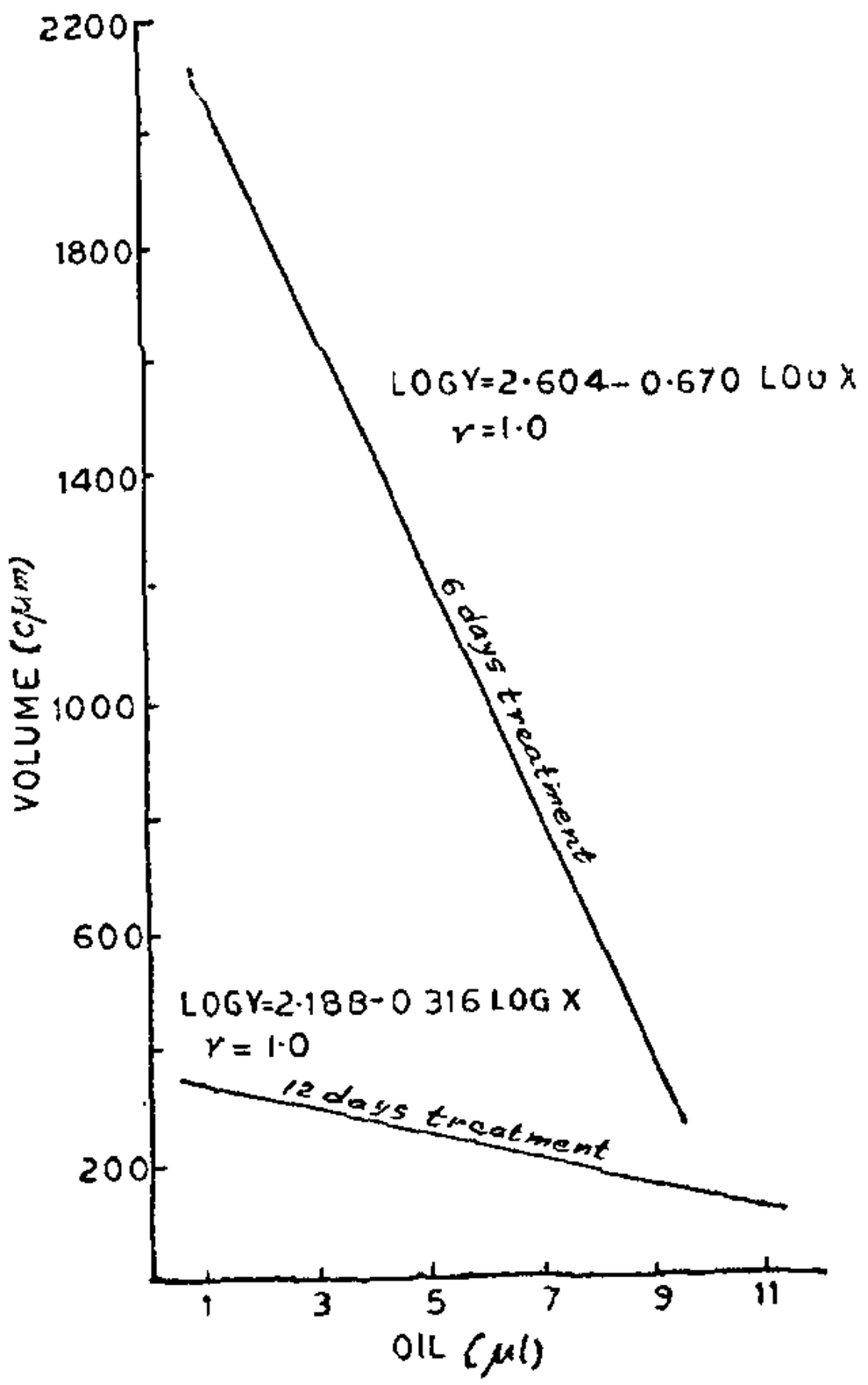

FIG. 1. Dosage response regression lines showing the relationship between dosage of the *Acorus calamus* L. oil vapours and the follicular volume.

Further, on calculating the regression coefficient for both the groups, it was found that the two relations exhibit a gradual slope ($b = 0{\cdot}670$ and $0{\cdot}316$ respectively) although it is about 50% less in the 12-day treatment. Both correlation and regression coefficients revealed a gradual and small decrease in the follicular volume with the increase in the amount of oil and more so when the treatment time was increased.

This would, therefore, suggest that duration of exposure is probably an important factor in the treatment of *A. calamus* oil. The present finding also supports the earlier observation on *M. domestica*[9] wherein likewise a gradual overall decrease in the follicular size results with the increasing concentration of hempa.

Authors are greatly indebted to Dr. C. K. Atal, Director of the Laboratory, for valuable suggestions. Thanks are also due to Dr. P. L. Duda, Reader in Biosciences, University of Jammu, for going through the manuscript.

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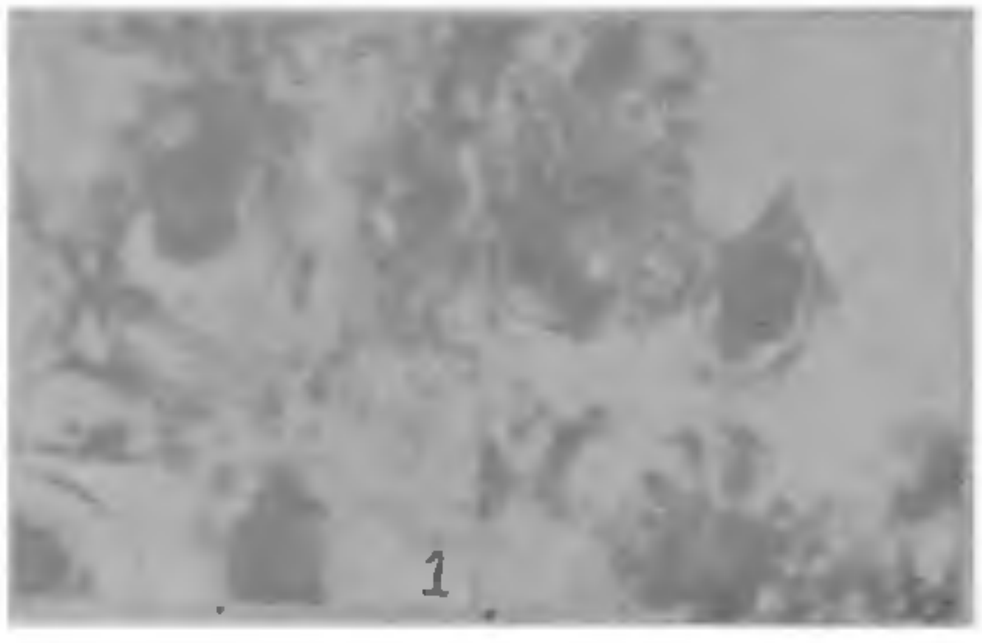
THE MIRACIDIUM OF *XENOPHARYNX SOLUS* NICOLL, 1912 PLAGIORCHIID TREMATODE FROM THE INDIAN FRESH WATER SNAKE *NATRIX PISCATOR* (SCHN)

ALTHOUGH some life cycles have been worked out in Plagiorchiidae (Yamaguti[1,2]) in respect of many species, still little is known about the miracidium, the early development in the snail intermediate host or even the nature of snail host. In a study on the biology of *Xenopharynx solus* Nicoll, 1912 collected from the gall bladder of the fresh water snake *Natrix piscator* Schn it was possible to know some features of the miracidium.

The complete development of the miracidium occurs in the uterus itself and as such the distal portion of the uterus could be seen filled with gravid eggs (Fig. 1). The eggs measure 37 × 22 μ in size with dark amber colour.

To determine the snail host, the following species of snails (inhabiting the snake area) were used for the experiments—*Pila globosa*, *Indoplanorbis exustus*, *Glocinma travencorica*, *Melanoides tuberculatus*, *Lymnaea luteola*, *Viviparo bengalensis* and *Gyraulus convexiusculus*. One to two mature worms were teased and the eggs were exposed to snails in a petri dish and their ingestion was watched. The only snail in which the miracidia were found to be released was *G. convexiusculus*. Thirty minutes after ingestion of the eggs the snails were opened and the intestines were teased and examined. In some snails the miracidia could be seen actively moving.

The miracidium at first moves in a random way. The ciliated miracidium is more or less oval in shape with its anterior end somewhat pointed and posterior end rounded (Fig. 2). The larva measures 0·045 mm by 0·015 mm in living condition with a conspicuous gland. Minute droplets presumably coming from the apical gland could be seen issuing out at the anterior end.



FIGS. 1–2. Fig. 1. Egg with miracidium. Fig. 2. Miracidium released in the intestine of the snail *Gyraulus convexiusculus*.

Some infected snails were fixed in various fixatives and sections were taken and stained with histological stains like Azan, iron hematoxylin, etc. In sections the miracidium measures 0·025 mm by 0·015 mm. The cilia measure 0·003 mm in length. Behind the apical gland could be seen two cells with large nuclei. These cells measure 0·005 mm in diameter. Posterior to this could be seen a large densely stained body which measures 0·006 mm by 0·007 mm. This is stained dark red with the Azan technique. Posterior to this a pair of cells 0·004 mm in diameter occurs.

These miracidia swim about in the intestinal fluid until they contact the intestinal wall when they shed off the epidermal cells and penetrate.

I am indebted to Professor K. Hanumantha Rao, Head of the Department of Zoology, Andhra University, Waltair, for suggesting the problem and much useful advice.

Department of Zoology, Andhra Univerisy, Waltair, *August* 18, 1977. V. VIJAYALAKSHMI.

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FLAVONOID COMPONENTS OF *MUNDULEA SUBEROSA* STEM-BARK

We report here the isolation of two crystalline principles, identified as Sericetin (I) and Mundulone (II), from the stem-bark of *Mundulea suberosa* collected around Hyderabad, India. The chloroform extract after defattying and then chromatographing over silica gel (200 mesh) yielded I, m.p. 152° (M^+ 404), in benzene and benzene: chloroform (1 : 1) fractions. I forms a dimethyl ether on methylation and a diacetate on acetylation. II, m.p. 178–80° (M^+ 434), was obtained as colorless crystals in chloroform and chloroform: methanol eluents of the column. II formed a monoacetate. Both I and II, obtained in the present investigation have been compared (m.m.p. IR) with the authentic samples and found to be identical.

The mass spectra of I and II, hitherto not reported, showed prominent ions due to retro Diels-Alder fragmentation and generally followed the characteristic flavonoid fragmentation pattern. The occurrence of a pyreno-flavone and pyrano-isoflavone in the same source is of biogenetic interest.

One of the authors (K.L.P.) is thankful to the C.S.I.R., New Delhi for a Junior Research Fellowship.

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6674/77. Published by Prof. M. R. A. Rao, Current Science Association, Bangalore-560 006 and Printed at The Bangalore Press, Bangalore-560 018.