Trehalase activity could be detected in three regions on the gels (figure 1). The first fraction (I) is a slow moving one occurring as a discrete band and the last, fast moving fraction (III) occurs as a broad diffuse band. In between, there is a second fraction (II) having relatively a weak reaction with tetrazolium red. *In vitro* incubation of trehalose with the enzyme source revealed glucose as the hydrolytic product and undigested trehalose in the paper chromatogram (figure 2).

The detection of trehalase from the abdominal extracts of *E. annulipes* sets at right the controversy regarding the occurrence or otherwise of trehalose in earwigs. It is quite possible that the disaccharide occurs at very low concentrations in the haemolymph of the insect. Moriarty[3] reported a concentration range of only 0.1 μg to 1.1 μg for female and 0.5 to 1.5 μg for males per μl of haemolymph of *F. auricularia* although trehalose concentration in the blood of most insects examined fall within the range of 5 to 50 μg per μl[7]. Also the detection of trehalase renders such hypotheses, as that trehalose as a blood sugar appeared later than the origin of class insecta or that the earwigs could have lost the disaccharide secondarily from the system[2], untenable.

More interestingly, the trehalase of *E. annulipes* is electrophoretically heterogeneous, which essentially means that the insect has multiple molecular forms of the same enzyme. Isozymes of trehalase have been reported in *Phormia regina*[8], isozyme A being restricted to midgut and blood and isozyme B restricted to head, muscles and rectal papillae. The two isozymes are electrophoretically and kinetically heterogeneous. Also earlier work[9] has shown considerable difference between intestinal and muscle trehalases of insects. Further work is underway to partially purify the isozymes of the earwig and study their tissue specificities and kinetic properties.

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EFFECT OF α-METHYL DOPA ADMINISTRATION ON THE PHEROMONAL BLOCK TO IMPLANTATION IN MICE

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THERE is a large body of evidence which suggests that the neuroendocrine cause of the male-induced implantation failure (the Bruce effect) in newly inseminated mice is the decreased hypophysial prolactin release leading to the failure of corpus luteum development[1-3]. The Bruce effect can be prevented by treatment with pimozide, an antagonist of dopamine receptors[4] or chlorpromazine, an inhibitor of dopamine activities[5]. These studies suggest the involvement of the dopaminergic neurons in the mediation of the pheromonal stimulus leading to the Bruce effect. In the present report, the ability of α-methyl dopa (1,3-(3,4-dihydroxyphenyl)-2-methylalanine), which stimulates hypophysial prolactin release through suppression of dopamine synthesis, to prevent the Bruce effect was evaluated.

All females and the stud males employed in the study belonged to the Parkes (P) strain and the alien males used for inducing implantation failure to the wild strain. The females were approximately 3 month old virgins. They were mated with P males and on finding the vaginal plug (day 0 post coitum)[1,6] were separated from the stud males and housed individually in cages, 40×15×10 cm. Twenty four hours later (day 1 post coitum) they were subjected to one of the following treatments. *Group I*: Individual exposure to a confined alien male for 3 days (from 1000 hr on day 1 to 1000 hr on day 4 post coitum) and administration of α-methyl dopa, 6 mg/female/day, on days 1 to 5 post coitum. *Group II*: Individual exposure to a confined alien male for 3 days as in Group I and administration of normal saline, 0.1 ml/female.day, on days 1 to 5 post coitum. *Group III*: Left undis-

TABLE 1

Effect of α-methyl dopa on implantation block

Group and treatment	Proportion and percentage of females remaining pregnant or with implantation block*	Proportion and percentage of females pseudopregnant
I. Alien male exposure + α-methyl dopa, 6 mg/day	11/50 (22.0%)	39/50 (78.0%)
II. Alien male exposure + normal saline, 0.1 ml/day	38/51 (74.5%)	13/51 (25.5%)
III. Left undisturbed	2/24 (8.3%)	22/24 (91.7%)

* Significance of differences: I versus II, $P<0.001$; I versus III, N.S.

turbed after separation from the stud male.

The alien male during exposure was confined in an expanded metal corral, 16 × 11.5 × 9 cm[1]. This enabled the female to be exposed to the male-originating olfactory pheromone without having physical contact with the male. α-methyl dopa (Merck, Sharp and Dohme, Bombay) was suspended in normal saline and given in two equal doses at 0900 hr and 1600 hr each day. The controls (Group II) received normal saline in two equal doses at the same time each day. All injections were given subcutaneously. Vaginal smears were examined from all females upto day 7 post coitum and a return of vaginal cornification within this period was regarded as the external manifestation of an implantation failure[16]. Females which failed to return to estrus were killed on day 7 to confirm pregnancy; those without implanted embryos were presumed to be pseudopregnant[1].

The results (table 1) indicate that α-methyl dopa administration decreases the rate of implantation failure in alien male-exposed females. This contrasts with the high rate (74.5%) of implantation failure in saline-treated controls. The percentage of implantation failure in undisturbed females (Group III) was close to that of spontaneous failure of pregnancy in P females under normal conditions[16]

The ability of α-methyl dopa to induce hypophysial prolactin release is well documented[7-9]. It is well established that the Bruce effect can be prevented by administration of exogenous prolactin[1,10], progesterone[1,11] or by any treatment that stimulates prolactin release and allows the maintenance of corpora lutea, *e.g.* presence of a functioning ectopic pituitary graft[1,2] or administration of reserpine[1,12] or quipazine[13]. It, therefore, appears likely that the suppression of the Bruce effect in α-methyl dopa-treated females is due to the increased prolactin release and stimulation of progesterone secretion by the corpora lutea leading to implantation of blastocysts. It is generally accepted that α-methyl dopa induces prolactin release by inhibition of dopamine synthesis[14,15]. It is suggested that dopamine is the prolactin inhibiting hormone (PIH)[16,17] or the mediator of PIH release[18,19]

Our results provide support to the involvement of the dopaminergic system in the transmission of the pheromonal stimulus in the Bruce effect[4,5] and support the view[1,3] that the failure of hypophysical prolactin release following exposure to alien males is the primary cause that triggers the neuroendocrine changes leading to the failure of implantation in newly inseminated mice.

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ANNOUNCEMENT

IAEA SCIENTIFIC MEETINGS DURING 1983

The International Atomic Energy Agency (IAEA) will convene six major scientific conferences and symposia during 1983. The title of the conference, dates and place are as follows:

1. International Symposium on Reliability of Reactor Pressure components, Stuttgart, F. R. Germany, 21–25 March 1983: 2. IAEA/WHO International Symposium on Biological Effects of Low-level Rediation with special regard to the Stochastic and Non-stochastic effects, Venice, Italy, 11–15, April, 1983: 3. FAO/IAEA International Symposium on Isotope and Radiation Techniques in Soil Physics and Irrigation Studies, Aix-en-Provence, France, 18–22 April 1983: 4. International Symposium on Operational Safety of Nuclear Power Plants, Marseilles, France, 2–6 May 1983: 5. International Conference on Radioactive Waste Management, Seattle, USA, 16–20 May 1983: 6. International Symposium on Isotope Hydrology in Water Resources Development, Vienna, Austria, 12–16 September, 1983.

In addition, the following scientific seminars of special interest will also be held during 1983:

(1) Seminar on Calibration Procedures in second standard Dosimetry Laboratories (SSDLs), Seibersdorf, Austria, 20–24 June, 1983: (2) Seminar on Radiation Detectors for Developing Countries in Africa, Nairobi, Kenya, 8–12 August, 1983: (3) Seminar on the Management of Nuclear Power Plants, Vienna, Austria, 19–23 September 1983 (4) Seminar on Technical and Environmental Aspects of Spent Fuel Management, Madrid, Spain, 26–30 September 1983: (5) Seminar on Quality Assurance for Nuclear Power Plants for Developing Countries in Latin America, Rio de Janeiro, Brazil, First Half of October 1983: (6) Seminar on the Environmental Transfer to Man of Radionuclides released from Nuclear Installations Brusells, Belgium, 17–21 October 1983: (7) Seminar on Transport of Radioactive Material by Post (in co-operation with UPU), Vienna, Austria 24–27 October, 1983: (8) Seminar on Effective Utilization and Management of Research Reactors, Kuala Lumpur, Malaysia, 7–11 November 1983: (9) Seminar on Radiation Protection in Exploration, Mining and Milling of Radioactive Ores for Developing Countries in Africa, Gabon, 14–25 November, 1983.

Further information may be obtained from the International Atomic Energy Agency PO Box 100, Vienna International Centre, A-1400 Vienna, Austria.