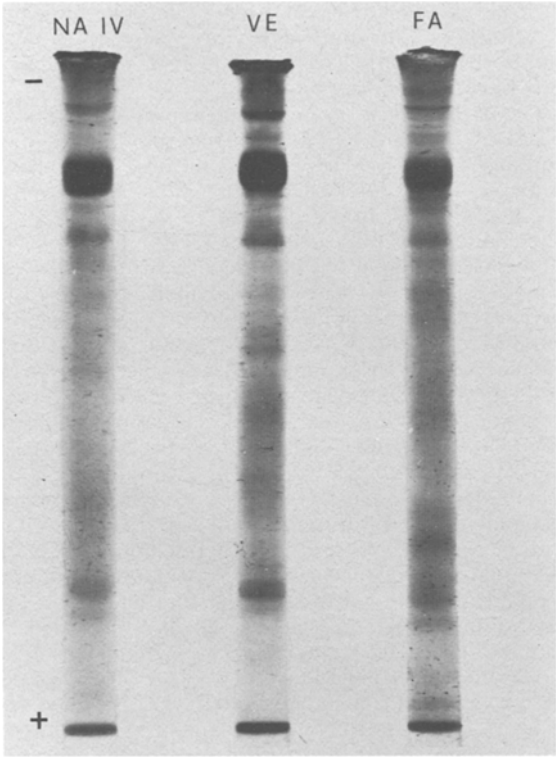

Fig. 1. General Protein Electropherograms of *Ophryotrocha labronica* populations. VE, Venice; FA, Faro; NA IV, Naples.

carried out by leaching with coomassie blue solvent (25% ethanol, 8% acetic acid), and gels were preserved in 7% acetic acid containing a small amount of dye. The relative mobilities of the different protein fractions are shown in figure 1.

Since individual pherograms were not available, it was not possible to use Nei's method[12], and the similarity coefficient of Jaccard was employed to compare the 3 patterns[13,14].

The mobility of each protein fraction was plotted on a grid and the number of classes for each band was determined, coding one if the band was present, zero if it was absent[15]. The table lists such similarity coefficients for pairs of populations. The highest value is 0.7614 and the smallest distance is 0.2844 for pairs of VE-FA populations. From this similarity matrix the pherogram of figure 2 was drawn, using the UPGMA method[16]. The cophenetic correlation coefficient between the pherogram and the cophenetic matrix that can be derived from it is 0.999[16].

As shown by Colonna[9], the populations from Venice and Faro are the most similar, while the Naples one is rather distant from the former 2. These results also give rough but interesting information about the amount of similarity: while the pair VE-FA has about 76% of genotype in common, NA IV share with the other 2 populations only 71% of genotype. Investigations on another species of the same genus, *O. puerilis* showed that, according to unpublished data, there is about 66% similarity between different species. The technique used, with some modifications necessary to perform individual electrophoresis, will soon allow us to characterize more exactly the genetic structure of *O. labronica* populations, with regard to genic frequencies of some enzymes.

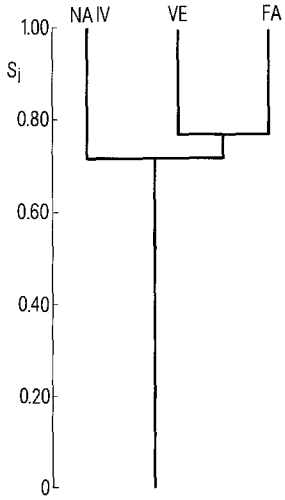

Fig. 2. UPGMA Pherogram derived from similarity matrix of the table.

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Laboratory observations on pupae on the medfly *Ceratitis capitata* (Wied.)

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Summary. Laboratory observations on pupae of *Ceratitis capitata* showed that most adult emergence took place in the morning between 06.00 and 09.00 h. Pupae succeeded to emerge when covered with sand up to a depth of 30 cm. It was not possible to differentiate between sexes by pupal weight.

In recent years, there have been several studies on the possibility of applying the sterile insect technique against the medfly *Ceratitis capitata* (Wied.) in different parts of the world. In Egypt, the ecological factors affecting the control of *C. capitata* by the sterile male technique and the biological effects of gamma irradiation on adult fecundity and longevity were investigated[1-4]. The present paper furnishes some additional laboratory observations on the pupae

of *C. capitata* which might be helpful in fruit fly research when planning a release programme against this insect pest, since most release projects depend on pupal distribution.

Time of emergence. An experiment was conducted to find out the time of day at which adult emergence took place in the laboratory at 25 °C and 60–65% RH. A set of 500 pupae were placed in a cylindrical jar on the expected day of emergence. Emerged adults were collected, counted and sexed at intervals of 2 h, starting from 05.00 h till 13.00 h. The results are shown in table 1.

A few adults emerged on the proceeding and preceeding days which were ignored. However, as shown above, most of emergence took place in the morning between 06.00 and 09.00 h. This finding would be of special interest for choosing the time of release of irradiated pupae, especially when bearing in mind the tremendous loss in released pupae due to the effect of climatic factors and to attack by ants and other soil insects when left on the ground for long time.

Depths at which adults emerge. Sets of 50 pupae, 2 days before the expected time of emergence, were placed in glass tubes 3 cm in diameter and covered with sand to heights of 1, 5, 10, 15, 20, 30 and 40 cm. Adults were found to emerge successfully without any significant differences from the controls till a depth of 30 cm, while at 40 cm none of the adults succeeded in emerging.

Weight of the pupae. An experiment was carried out to investigate the possibility of sexing the Medfly pupae according to their weight. For this purpose 3 sets each of 100 pupae, 2 days old, chosen at random, were weighed individually and allowed to emerge separately for sex determination. Results are shown in table 2.

Although results indicated a significant difference between the mean male and female weight of pupae ($p \leqslant 0.05$), the differences cannot be practically used by any laboratory technique for sexing. It was also observed that both overweight or underweight pupae did not emerge. It is clear that the pupal weight depends on the breeding media and technique, yet even with standard constant rearing conditions, it was difficult to differentiate between sexes by means of pupal weight.

Effect of tagging on pupal emergence. Fluorescent pigments are commonly used at present in ecological tagging studies, e.g. in dispersal, flight range and population size determination studies. Tagging of adults is achieved by applying the pigment to the pupae shortly before emergence[1]. For studying the effect of tagging on the percentage of emergence, an adequate number of pupae were collected on the same day of pupation, and 3 sets of 100 pupae each were drawn daily throughout the 10 days of the pupal stage and tagged with the fluorescent pigment at the same rate used for release experiments[1]. Results of adult emergence showed that the percentage of emergence was not affected by the time of tagging, except in pupae tagged on the 1st day where slight insignificant reduction in adult emergence was observed.

Table 1

Time	05.00	07.00	09.00	11.00	13.00	Totals
Males	-	110	78	12	-	200
Females	-	104	81	11	-	196
Totals	-	214	159	23	-	396

Table 2

Sex	Weight in mg		
	Maximum	Minimum	Mean ± SE
Males	9.7	6.1	8.1447 ± 0.16
Females	9.7	6.7	8.0733 ± 0.15
Non-emerged	12.5	3.0	6.2625 ± 0.37

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Effect of solubilization of *Salmonella minnesota* Re glycolipid on its interferon-inducing activity

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Summary. Electrodialysis of *Salmonella minnesota* Re glycolipid, or exposure to 0.2 M EDTA, pH 7.0, yields products capable of eliciting interferon production at concentrations 10-fold lower than that of the original glycolipid.

The elegant studies of Feingold et al.[1] have led to the recognition of the lipid A moiety of lipopolysaccharides (LPS) of Enterobacteriaceae as a major determinant of these potent interferon inducers. It has been conclusively proved[2] that *S. minnesota* Re glycolipid subjected to mild alkaline hydrolysis exhibits enhanced interferon-inducing activity as a result of the increased solubility of the altered molecule.

The studies of Galanos and Lüderitz[3] suggest that the state of aggregation of LPS contributes substantially to the expression of their biological activity. An electrodialysis procedure[4] has been elaborated for the removal of metal cations and basic amines from LPS, and the resulting derivatives have been found to possess remarkable solubility in water.

Taking cognizance of these latter findings, we decided to explore the effect of solubilization on the interferon-inducing capacity of the glycolipid derived from Re mutant of *S. minnesota*. To achieve this we tried 2 procedures of solubilization: a) electrodialysis and b) treatment with 0.2 M EDTA at pH 7.0.

Glycolipid (GL) was prepared from acetone-dried bacterial cells of *S. minnesota* Re by extraction with chloroform-methanol as outlined by Chen et al.[6]. The purity of the GL was verified by immunodiffusion and immunoelectrophoresis employing antiserum against the Re mutant of *S. min-*