was on average about 15 msec. The latency of the second group (late responses) was about 50 msec. The early responses always appeared first, and only after maintained stimulation were they followed by the late ones. The latencies of the first few early responses were usually longer (about 18 msec) than those of the subsequent ones. The decrease of the latencies was of the order of 30% and similar to that found in monkeys when the same kind of stimulation was used[5].

When stimulating the pyramidectomized cortex, two similar groups of spikes appeared (Figures 1B and 2B). A comparison of the latencies of the early responses evoked from the normal and pyramidectomized sides did not reveal any distinct differences. The early and the late responses evoked from the pyramidectomized cortex appeared either with the same or a reversed sequence as those from the intact cortex. Figure 2B gives an example of a record from a cat in which the late responses appeared after a shorter time of maintained stimulation than the early ones.

The similarity of the effects from the normal and pyramidectomized cortex gives further support to the view[6] that in the intact animal movements of cortical origin are evoked by impulses travelling in at least two parallel systems, each of them being able to act independently. The short latencies of the responses elicited in the peripheral nerves by the stimulation of the pyramidectomized cortex suggests that they utilize pathways with a conduction time comparable to those belonging to the pyramidal system. Further investigations are required to identify the extrapyramidal pathways involved[7].

Résumé. Les effets de la stimulation du cortex sensorimoteur sont étudiés ici chez le chat, après section des faisceaux pyramidaux. A part des seuils plus élevés et une tendance accrue à la fatigue, les mouvements, le EMG des muscles fléchisseurs et les décharges enregistrées dans les nerfs périphériques se sont montrés pareils à ceux provenant du cortex intact.

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Sex Ratio and Sex Digamety in *Echinorhynchus truttae*

Information regarding sex determination of Acanthocephala is very scarce as yet. Acanthocephala carry on their life cycle in two hosts. The intermediate host is generally a water invertebrate and the primary host is a vertebrate animal.

Echinorhynchus truttae, which is found in the juvenile stage with a certain frequency as a parasite of *Gammarus pungens padanus* on the Po river, and, in the adult stage, lives on several fish species, has been studied with special regard to sex ratio and sex chromosomes.

Gammarus populations were collected almost daily at Carignano near Turin from February 10 to March 5, 1965. The infestation index of *Echinorhynchus* in the *Gammarus* population has shown marked variations during this period, ranging from 60% in the first two weeks of collection to a medium 5% towards the end of collection. The degree of infestation is rather low, with a maximum of six parasites per *Gammarus* found in five instances only among the 1463 *Gammarus* examined. The parasites have been sexed on the basis of sexual characters which are quite evident in the juvenile stage.

The Table shows the relative frequencies of males for each of the five degrees of infestation found. It is evident that sex ratio remains 1:1 in each degree of infestation with no significant differences between the categories. Among the 2015 parasites which were found, 47.4% (N = 955) were males and 52.6% (N = 1060) were females. The sex ratio in the whole population of *Echinorhynchus* is therefore very near the theoretical value of 1:1.

The sex ratios observed both in every degree of infestation and in the whole population markedly differ from those of the few species of unisexual parasites which are found in different numbers in single parasitized individuals and have suitably been studied in this connection. In the Nematode *Paramermis contorta,* which is a parasite of *Chironomus* larvae, sex ratio shows wide variations as it is largely influenced by environmental factors such as crowding (degree of infestation), size of the host, and sexualizing action of the first parasite upon the parasites that have entered subsequently[1–3]. Similar observations have also been made in *Mytilicola*[4], which is a Copepod parasite of *Mytilus.*

Degree of infestation	No. of parasites	Females	Males	% ♀♀	% ♂♂
1	1085	571	514	52.7	47.3
2	546	300	246	55	45
3	234	114	120	49	51
4	60	29	31	48.4	51.6
5	60	28	32	46.7	53.3

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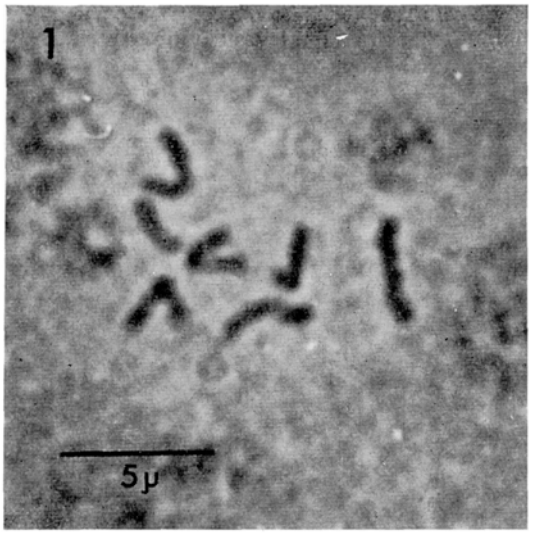

Fig. 1

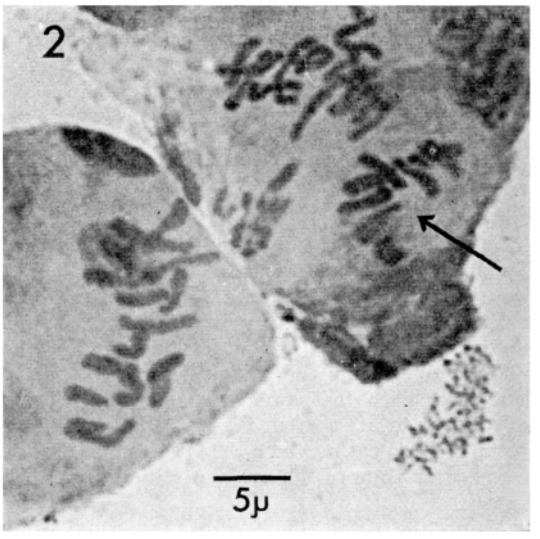

Fig. 2

Male and female individuals of *Echinorhynchus* are found in *Gammarus* of small size in the same proportions as in fully developed *Gammarus*.

The constancy of sex ratios at different degrees of crowding and in other varied environmental conditions have therefore lead us to postulate the existence of a rather rigid system of sex determination, such as is generally exhibited by animals showing sex digamety. The cariotype of *Echinorhynchus* has therefore been examined and it has been found that the males have a diploid set of seven chromosomes (Figure 1) and the females a diploid set of eight chromosomes (Figure 2). A more detailed analysis of the chromosome sets of the present *Echinorhynchus* population will be illustrated in a forthcoming paper.

A diploid chromosome set of twelve chromosomes is known in *Paramermis*[5] and no detectable sex chromosomes have been shown as yet in this species.

It is remarkable, therefore, that a species where sex determination appears to be largely independent of the environmental factors, which have a marked influence in *Paramermis*, shows a type of male digamety of the XO-type which represents a rather advanced evolutionary step from the cytogenetic point of view[6].

Riassunto. Il rapporto sessi di una popolazione di *Echinorhynchus truttae* è risultato molto vicino ad 1:1 sia nel suo complesso che nei diversi gradi di infestazione. La femmina ha un corredo cromosomico 2n = 8, il maschio 2n = 7 e quindi un tipo di digametia XO. Questo reperto è messo in rapporto con esempi noti di rapporti sessi variabili in altri parassiti unisessuali.

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The Effect of Reserpine on the Achilles Reflex in Normal Young Men

NUTTALL and DOE[1] in 1964 reviewed the use of the Achilles reflex time as a measurement of thyroid function. MCKINNEY et al.[2] reported its usefulness as a screening procedure in a psychiatric population. Various pathological conditions and drugs have been reported in these papers to interfere with the Achilles reflex. However, there have been no systematic studies of drug effects. The present report is a pilot attempt in this area. Reserpine was chosen as the test drug. Since it is used in hyperthyroidism, it seemed likely to exert an effect on reflex time.

Nine healthy young men (mean age 23) served as paid subjects. Each subject was tested on four days on five measures: (1) the one-half relaxation time of the Achilles reflex, (2) median nerve conduction time, as measured by evoked nerve potential, (3) 'eye-to-foot' reaction time on the 'Porto-Clinic' machine, which involves movement of

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