The man who never dreams does not deny that others have had such experiences.

It seems to me the duty of science either to show that, in the nature of things, there is no inherent possibility for the existence of ectoplasmic matter, or to attempt a tentative explanation of the phenomena. Blank denial is a foolish policy in the face of rapidly spreading superstitions—spiritistic and religious—amongst the people, many of whom are reacting against the materialistic attractions science has brought within easy reach of the democracy. If the human race is to advance in self-knowledge, science must maintain its authority. What is now termed ectoplasmic matter has always been a concomitant of mediumistic materialisations, and tests suggested to prove its existence are unscientific, for the function of science is not to prove the existence of phenomena, but, when admitted, to investigate and explain it. The first step toward the scientific elucidation of psychic phenomena (and the exposure of superstitious beliefs) is to admit them as facts of experience amongst certain peculiarly organised human beings. W. W. L.

Occurrence of Extensor Rigidity in Quadrupeds as a Result of Cortical Injury.

PERMANENT contraction of certain muscle groups occurs in apes, following the removal of the cortical motor centres of the limbs. Hermann Munk (1895) stated that 'contractures' do not occur in rabbits, cats, and dogs following similar operations. Recent workers are of the opinion that extirpation of the gyrus proreus of the cat results in an exaggerated extensor tonus in the contralateral limbs, but removal of the motor cortex fails to influence the tonus of the corresponding limbs.

I observed that removal of the cortical limb areas in cats results in extensor rigidity in the contralateral fore- and hind-leg. If the foreleg area alone is removed the rigidity is confined to the contralateral foreleg; also if the hindleg area alone is removed the rigidity is confined to the contralateral hindleg. In chronic preparations the rigidity has been observed six weeks after the operation. Injury to or removal of the gyrus proreus in cats, in my experiments, does not result in an increased extensor tonus in the contralateral limb muscles, but there is a definite stiffness in the neck muscles.

Extirpation of the foreleg area in rabbits and guinea-pigs results in a marked extensor rigidity in the contralateral foreleg. In chronic rabbit preparations, rigidity has been observed two weeks after the operation.

The rigidity observed in the animals studied has certain definite properties. It appears very quickly following the operation on the cortex, in the limb muscles which oppose gravity. It can be temporarily inhibited by stimulating reflex movement (flexion reflex and progression). In certain positions (dorsal decubitus) the rigidity exists over long periods of time with no apparent fatigue. In rabbits and cats, labyrinthine and neck reflexes, as described by Magnus and De Kleijn, influence the rigidity in a manner similar to that observed in decerebrate preparations.

It would appear, then, that the rigidity observed in these experiments is due to a release from cortical control and that it is similar to the decerebrate rigidity as described by Sherrington.

N. B. LAUGHTON.

Department of Physiology,
University of Western Ontario Medical School,
London, Canada.

Etiology of European Foul-brood of Bees.

SINCE Cheshire and Cheyne investigated the cause of foul-brood of bees in England and attributed the etiology of the disease to *B. alvei*, which is almost invariably found in large numbers in infected larvæ, much work has been done to corroborate their results. In no case, however, has an isolated culture of *B. alvei* been known to produce the disease. On the other hand, G. F. White and others have refuted the claim of Cheshire and Cheyne and ascribed infection in this disease to *B. pluton*. Owing to their inability to cultivate and isolate the organism, however, their claim has remained hypothetical; for it could not be determined whether this organism was itself merely a secondary invader—as they said was *B. alvei*—or whether the infection was mixed, or whether, indeed, these organisms played any pathological rôle in the disease.

It has been my good fortune, however, to develop a medium admirably suitable for the growth of *B. pluton* (White). A 0·15 per cent. concentration of agar, together with certain nutrients, is employed as an enrichment medium; and a concentration of 1·5 per cent. agar for the isolation of the organism at 37° C. By this method pure cultures of *B. pluton* can be readily obtained, provided the larvæ used contain a preponderance of this organism.

I have obtained infection in a healthy colony of black bees in four days, using as inoculum cultures of the organism derived from isolated colonies. The symptoms of the diseased larvæ accorded with those observed in naturally infected larvæ, and the microscopical picture was typical—*B. alvei* forms being also present, though only in small numbers. The organism has been re-isolated successfully.

Morphological studies thus far suggest the identity of the two organisms. While the results in this are not yet complete, cultures of *B. pluton* have been observed to change to *B. alvei* form, resembling biologically the *B. alvei* isolated from infected larvæ. This further corresponds very closely with the changes observed in brood naturally infected, where the ratio of *B. alvei* to *B. pluton* generally increases as the putrefaction of the larvæ progresses, so that *B. pluton* is almost eliminated. The more conclusive substantiation of this is anticipated, and its accomplishment should lead to the demonstration of important relations between the pathogenicity of micro-organisms and their life stages. DENIS R. A. WHARTON.

327 Waverley Street,
Ottawa, Ontario, Canada.

Mediterranean Oligochæts.

As our knowledge of the Oligochæta of the Mediterranean is far from being exhaustive, the following records of finds made in Corsica and the Maritime Alps in April last may be of service to future investigators.

1. *Microscolex phosphoreus* (A. Dugès). Stiff loam, Ville-franche, about 200 ft. Already found in Sardinia.

2. *Enchytræus* sp. ? Peira Cava, 5000 ft., among the snow; species not yet determined.

3. *Eiseniella tetrædra* (Sav.). The typical form taken at Thouët (Touët), April 20, and Calacuccia, Corsica (height, 847 m.), April 27.

4. *Eisenia alpina* (Rosa). Peira Cava, as before, in perfect condition. On April 2, 1910, I received one specimen from Mr. Wm. Evans, collected in Perthshire. This is at present the only British record; previously reported as occurring in Switzerland, the Piedmontese Alps, Armenia, and Syria.