



Figs. 1 and 2. The large-celled layer of the hippocampus. Animal kept at 19° C.

Fig. 3. The large-celled layer of the hippocampus. Animal kept at 32° C.

Fig. 4. The nucleus sphaericus. Animal kept at 32° C. All figures taken from Holmes's preparations at the same magnification

animals (five) were decapitated under ether anaesthesia and the brains prepared by the Nonidez technique. Observations have been confined to the large-celled layer of the hippocampus, the nucleus sphaericus (posterior hypopallium) and the nuclei of the seventh and eighth cranial nerves.

Lizards that had been kept at 19° C. for 8 weeks showed a large number of well-stained terminal rings and a few swollen fibres distributed among the cells of the large-celled layer of the hippocampus and in the cranial nerve nuclei (Figs. 1 and 2). The fine-fibre plexus of the nucleus sphaericus showed irregular staining suggestive of degenerative changes.

Animals that had been kept at 32 ± 3° C. showed relatively few rings in any of the cell groups investigated (Fig. 3). In the nucleus sphaericus a number of solid blobs 1–3 μ in diameter appeared in the irregularly stained fibre plexus (Fig. 4). These blobs only appeared after the animals had been kept at 32° C. for about three weeks. They continued to increase in size and number up to eight weeks.

Lizards obtained fresh from the dealers showed the typical cold picture in some groups of animals and an intermediate picture in others.

These differences are independent of the anaesthetic or the method of preparation. It is probable that they are related to the neurofibrillar thickening that Tello¹ and Cajal² found in hibernating reptiles.

The changes that have been found may give further information about the nature of the finer terminals. Some of the appearances of rings, swollen fibres and blobs are suggestive of degeneration in fine terminal ramifications and could be mistaken for degeneration products of experimental lesions.

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¹ Tello, J. F., *Trab. Lab. Invest. biol. Univ. Madrid*, **3**, 9 (1904).

² Cajal, S. R., *Trab. Lab. Invest. biol. Univ. Madrid*, **3**, 113 (1904).

A Hepatotoxin from *Sporidesmium bakeri* capable of producing Facial Eczema Diseases in Sheep

A PREVIOUS communication¹ reported that spores of a fungus identified as *Sporidesmium bakeri* Syd. contained the 'beaker test' substance found to be associated with toxicity of pasture samples on which the disease known as facial eczema had occurred.

In initial experiments mycelial felts grown on Raulin-Thom and Czapek-Dox media failed to produce liver lesions when fed to guinea pigs. The material so fed was also negative to the 'beaker test'. Subsequent experiments with a high-sporing strain of the fungus, grown on potato-carrot extract medium, produced liver damage in guinea pigs, indistinguishable from that obtained after feeding hepatotoxic grass. The material fed comprised a mixture of mycelial felts, spores and medium. Similar fungal material produced liver lesions characteristic of facial eczema in lambs. Later a clinical case showing typical icterus and photosensitization was produced.

The specific nature of the liver lesions was diagnosed in both guinea pigs and lambs by D. C. Dodd, of Ruakura. The assistance is acknowledged of D. J. Ross of the Soil Bureau and W. Crawley of Ruakura in cultural methods and E. P. White of Ruakura in chemical work.

Experiments are being planned to determine whether the hepatotoxin of this fungus is also responsible for facial eczema as it occurs in the field.

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¹ Percival, J. C., and Thornton, R. H., *Nature*, **183**, 1095 (1958).

A Bacterium with Fungicidal Activity

In a recent communication, Percival and Thornton¹ referred to the relationship between fungal spores and a test for hepatotoxic grass. It has since been shown that the fungus is *Sporidesmium bakeri* Syd. and is the source of the hepatotoxin which causes the specific liver damage which occurs in the disease known as 'facial eczema'. In connexion with this work, we have isolated a strain of *B. subtilis* which