peritoneal injection of a dilute suspension. The principal characteristics of the bacterium are illustrated in Table 1.

Cultures of the organism were afterwards identified as *Aeromonas* (or *Pseudomonas*) *formicans*[4,5] and a type culture is maintained in the National Collection of Marine Bacteria (U.K.) as N.C.M.B. No. 882.

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Origin of the Triassic Dicynodonts (Reptilia: Synapsida)

So far, workers on the Triassic dicynodonts[1–3] have not been able to indicate how this group originated. However, Camp[2] has enumerated twelve characters which he thought would be present in their ancestor. Eleven of these characters are found in the Eo-triassic genus *Lystrosaurus*[4]. The twelfth, concerning the presence of a cleithral groove, has been shown[5] to be not significant. The so-called cleithral grooves found on the scapulæ of Triassic dicynodonts can be better interpreted as pre-spinous fossæ.

Recently a new Lower Middle Triassic dicynodont fauna has been described from China[3,6,7]. At least one species of this fauna has an interclavicle very similar to that of *Lystrosaurus*[3,8].

In Permian dicynodonts, for example *Kingoria*[9], the interclavicle is a flat T-shaped bone. It has a single contact with the sternum and seems to have lain almost horizontally.

In *Lystrosaurus*[8] it is a shorter, X-shaped bone with two points of contact with the sternum and seems to have been orientated at a considerable angle to the horizontal. It has in addition a strong ventral peg and keel.

Interclavicles similar to that of *Lystrosaurus* are known in *Dinodontosaurus olivierai*[10,11] from South America and *Dicynodon njalilus*[12] from the Middle Trias of Tanganyika. This latter has been re-described[5], and it has many characters intermediate between *Lystrosaurus* and the other Triassic forms.

Although *Lystrosaurus* is itself a Triassic dicynodont and shows many of the features associated with the later Triassic forms[5], it still retains some characters associated with its Permian forebears.

In order to elucidate the true relationships of *Lystrosaurus* work is now being undertaken in the South African Museum, Cape Town, and later will be carried on in Edinburgh.

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ENTOMOLOGY

9-Hydroxydec-*trans*-2-enoic Acid, a Pheromone Stabilizing Honeybee Swarms

A colony of honeybees (*Apis mellifera* L.) deprived of its hive and combs behaves like a reproductive swarm and will cluster on any convenient support. When the queen is taken away from such an artificial swarm, the workers soon become restless and increasing numbers fly off until eventually the cluster breaks up altogether.

Simpson[1] showed that the odour of a queen (virgin or mated), or of her crushed head but not of other parts of her body, prevents a cluster that is beginning to disperse from breaking up and re-establishes a quiet cluster that is stable for several hours at least. He suggested that the stabilizing odour comes from the secretion in the queen's mandibular glands and showed that it is distinct from the odour of 9-oxodec-*trans*-2-enoic acid, which is a major component of this secretion and plays an important part in colony organization[2].

Using Simpson's technique with 4 colonies of bees in nylon-gauze cages (each about 2 m²) in a controlled environment chamber (incident illumination 13·5 foot-lamberts, temperature 19° C, relative humidity 64 per cent), we confirmed that the odour responsible comes from the queen's mandibular glands. The secretion from the mandibular gland contains several acids and methyl esters[3]. We have tested synthetic samples of certain of these on clusters of bees that were beginning to disperse. The substances were dissolved in ethanol to give solutions containing about twice as much of each substance as is present in the total natural secretion from one queen. The ethanol solution was dispersed on cotton-wool in a cage (2 cm × 2 cm × 6 cm) the walls of which were made of two layers of wire-gauze separated by a gap too wide for the bees to reach across. A clean cage was used for each test material and was placed beside a dispersing cluster. Each substance was tested at least three times.

Only one of the synthetic substances tested, 9-hydroxydec-*trans*-2-enoic acid, caused the dispersing clusters to re-form and settle down again, and did so in 16 out of 18 tests. Four tests were continued for more than 16 h, during which time the clusters remained stable, but they soon began to break up after the acid was removed. We conclude that the odour of the 9-hydroxydecenoic acid produced by the queen is largely, perhaps completely, responsible for stabilizing the swarm cluster.

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Chemosterilization and its Permanency in Mosquitoes

The use of sexual sterilization as an instrument for insect control has received increasing attention in recent years. Perhaps the most significant aspect of the progress in this field is the effective evaluation in the laboratory of chemosterilants on a broad spectrum of insects. The mosquito can be affected by these compounds either in the larval or adult stages[1]. Although *Aedes aegypti* (L.) can be sterilized in the larval stage by 'Apholate', the competitiveness of the resulting males or the effectiveness of their sperm is sub-normal[2]. However, males sterilized by 'Apholate' as adults are highly competitive[3]. The possi-

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