fibres of the serge in the form of fine sheaths of the waxy compound around the individual fibres. The pieces of serge were then fastened over the top of glass jars and belled inwards. The insects were introduced and prevented from straying by pieces of transparent cellulose fastened over the mouth of the jar. Lice came into contact with the insecticidal wax through the tarsal claws hooking around the sheathed fibres. When *n*-carbitol thiocyanate was used, the lice were dead in six minutes, whereas with D.D.T. the lice were not dead until the lapse of 120 minutes.

In these experiments, contact between the insects and the insecticides was almost entirely through the medium of the tarsi; and as, in these insects, the pulvillus is but little developed, it is unlikely that the relative size of the pulvillus has any special significance except as mentioned above.

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[1] *Nature*, **156**, 112 (1945).

Ergot on *Pennisetum Hohenackeri* Hochst.

Pennisetum Hohenackeri Hochst. (*P. alopecuros* Nees) is a densely tufted perennial grass thriving in the clayey moist situations. The occurrence of sphacelial and sclerotial stages of a *Claviceps* on this host was first recorded by Ajrekar[1] in the course of his studies on the sugary disease of jowar in India caused by *Sphacelia Sorghi* McRae. In their studies on the ergot in South India, Thomas *et al.*[2] have given measurements of the spores of the *Sphacelia* and of the sclerotia. The honey dew forms a brownish viscid crust on the infected spikelets, embedding numerous spores. The spores are hyaline, thin-walled, 17–24 × 3–7 μ.

The ergot and sphacelial stages on *Pennisetum Hohenackeri* were collected round about Bangalore during the months of February and March. The collection of the sclerotial stages is rendered difficult at later periods on account of their dispersal by wind in the same manner as normal seeds. The persistent bristly glumes help in the process of dispersal. The identity of the *Claviceps* species has so far remained obscure on account of the lack of germination stages.

For germination, well-developed mature sclerotia were taken after dissecting out the enveloping glumes. These were wrapped up in a wire gauze and buried in dry soil placed in a pot in the greenhouse. Care was taken to prevent any extraneous moisture from soaking into the pot. The sclerotia were taken out after a month, treated with 0·5 per cent solution of potassium permanganate, washed in water and placed buried in sterilized moist sand in petri dishes. The germination of sclerotia was noticed after 20–30 days, the first indication being the rupture of the cortex of the sclerotium and the extrusion of a white globose head. This ascigerous sphæridium enlarges in diameter and is pushed upwards by the developing stipe or stem. In mature stages the ascigerous head portion is maroon red with a pinkish tinge, the stipe being pure white in colour. The surface of the sphæridium is papillate on account of the protrusion of the apices of the ostioles, and measures about 1–1·5 mm. in diameter. The stipe measures about 20 mm. in length and shows a tendency to turn and twist as described by Whetzel and Reddick[3] and others.

The colour of the stroma, the size of the peritbecia and the ascospores indicate that the species comes nearest to, or is identical with, *Claviceps microcephala* (Wallr.) Tul. Petch[4], who made a detailed study of *C. purpurea* and *C. microcephala* on *Lolium perenne*, *Glyceria fluitans*, *Festuca arundinacea* and others, concluded that there were no morphological grounds for separating the two species, and reduced *C. microcephala* as a synonym of *C. purpurea*. Both these species of *Claviceps* were founded by Tulasne, of which *C. microcephala* is always distinguished by the smaller size of the sclerotia, which according to Hartwich (Tubeuf and Smith[5]) contain three times as much ergotin as those of *C. purpurea*. While further studies are yet needed to validate Petch's conclusions, it seems reasonable to place the *Claviceps* species on *Pennisetum Hohenackeri* under *C. microcephala*.

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Oct. 17.

[1] Ajrekar, S. L., *J. Ind. Bot. Soc.*, **5**, 55 (1926).
[2] Thomas, K. M., Ramakrishnan, T. S., and Srinivasan, K. V., *Proc. Ind. Acad. Sci.*, **21**, 93 (1945).
[3] Whetzel, H. H., and Reddick, D., *Phytopath.*, **1**, 50 (1911).
[4] Petch, T., *Naturalist*, London, 25 (1937).
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Classification and Nomenclature of Animal Behaviour

It was suggested in a recent communication[1] that kineses be designated as positive and negative, as is done with taxes. The arguments advanced against the use of 'high' and 'low' for kineses still stand, but after discussions with other workers and some experience of applying positive and negative to specific cases of kineses, these terms do not appear satisfactory. For the sake of clarity it seems desirable to apply to kineses terms different from those applied to taxes.

In what has been called a 'high' or 'positive' kinesis the situation is summed up by saying there is a direct relation between temperature and activity; in a 'low' or 'negative' kinesis there is an inverse relation between them. The straightforward course is, therefore, to call the former a '*direct* kinesis', and the latter an '*inverse* kinesis'. Thus, when a high stimulation intensity is associated with a high level of activity, or low stimulation with low activity, we are dealing with a direct kinesis; when a high stimulation intensity is associated with a low level of activity, or low stimulation with high activity, we are dealing with an inverse kinesis. Dr. D. L. Gunn, who was among those not entirely satisfied with the proposal to apply positive and negative to kineses[2], informs me that he considers the above new suggestions do meet the case.

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Salisbury, Wilts.

[1] Kennedy, J. S., *Nature*, **155**, 178 (1945).
[2] Gunn, D. L., *Nature*, **155**, 178 (1945).