$$C = A'.T. \exp(-H'/kT) \cdot \sinh(q'\sigma/kT), \quad (4)$$

with $A' = 3{\cdot}2 \times 10^{-2}$; $H'/k = 12{\cdot}6 \times 10^{3}$; $q'/k = 15{\cdot}10$; and t is the time in seconds, measured from the instant of the application of the tensile stress σ.

The full curves in the diagrams were drawn from values obtained from equation (3); the dots represent experimental points, and the broken curve drawn in diagram III represents the quasi-viscous flow. It was obtained by subtracting the transient from the overall flow curve. During the period of pronounced transient creep, the stress-concentration factor q (equation 1) cannot be expected to have attained its final value. It will reach that value only as the metal 'hardens' in the course of the decay of the transient flow. The quasi-viscous creep curve will, therefore, be bent near the origin, as is shown in diagram III.

The effect of carbon content, alloying, and specimen size on the flow is being studied.

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Biological Control of the Mealybug Vectors of Swollen Shoot Virus of Cacao

IN view of the results obtained by Boyce and Fawcett[1], working with *Aspergillus parasiticus* Speare as a parasite of *Pseudococcus gahani* Green and *Phenacoccus gossypii* T. and C., it was considered worth while to initiate preliminary investigations designed to show whether this fungus would parasitize *Pseudococcus njalensis* Laing, the chief field vector of swollen shoot virus in the Gold Coast.

Two strains of *A. parasiticus* (*NRRL* 465 and 502, herein designated (1) and (2) respectively) were received through the courtesy of Dr. K. B. Raper, of the Northern Regional Research Laboratory of the U.S. Department of Agriculture, Peoria, Ill. Preliminary tests were made by rolling adult *P. njalensis* in sporulating cultures of the fungi. Untreated mealybugs acted as controls. From the results, it was evident that *A. parasiticus* was able effectively to attack and kill *P. njalensis* (88 per cent dead after 120 hr., compared with 11 per cent dead in controls).

A more carefully controlled experiment was then carried out under conditions more nearly those of field practicability. The spores were applied (at the suggestion of Dr. Edward A. Steinhaus, of the University of California Agricultural Experiment Station) diluted with talc dust in a dust tower. Two control treatments involving no fungus spores were employed, one in which talc dust alone was applied to the mealybugs, the other consisting of no dust application at all. As a further control, two species of *Aspergillus* other than *A. parasiticus* were applied in two treatments. These were *A. flavus* Link ex Fr. emend. Wilh., closely related to *A. parasiticus*, and *A. niger* van Tiegh. *sens. strict.* The remaining two of the six treatments were those using strains (1) and (2) of *A. parasiticus*.

Each treatment involved the application of 0·25 gm. of talc dust, containing (in treatments 1–4) approximately 12,000 fungus spores, to a hundred adult mealybugs divided into four batches of twenty-five, each batch being contained in a Petri dish of diameter 7·5 cm., to which had been added a filter paper moistened with sterile water. The four Petri dishes stood on the floor of the dust tower, of diameter 25 cm. The dust was blown upwards into the tower at a pressure of 20 lb. per sq. in. and allowed three minutes to settle.

The plates were examined daily under a binocular microscope. It was evident that under the conditions of the experiment, *A. parasiticus* could effectively parasitize *P. njalensis* within 96 hours. *A. flavus* and *A. niger* appeared to have a slightly deleterious action; most of the mealybugs which died under those treatments had fructifications of the respective fungus growing out of the corpses, usually dorsally or laterally in the thoracic region, as was also the case with the mealybugs killed by *A. parasiticus*.

The experiment was repeated ten weeks later, using the same dusts, which had been stored in corked tubes. The results were closely comparable with those of the first series. The corrected percentage deaths[2] after 96 hr. for the six treatments in the two experiments respectively are tabulated below:

	Fresh dust	Dust stored 10 weeks
1. *A. parasiticus* (1)	96	97
2. *A. parasiticus* (2)	90	97
3. *A. flavus*	7	20
4. *A. niger*	2	6
5. Control: talc alone	−1	0
6. Control: no treatment	0	0

Further work on this subject will be directed towards a study of the effect of *A. parasiticus* on mealybugs living in established colonies on cacao plants.

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Growth of Egyptian Lambs: Effect of Artificial Feeding and Breed Differences

ARTIFICIAL feeding of lambs is not practised in Egypt, owing to the breeders' belief that lambs do not survive unless they suckle their mothers for at least three to four months. The present study was undertaken to investigate the real effect of such practice with both Awsemy and Rahmany breeds.

Twenty lambs were taken at random and divided into two equal groups, one of which was naturally fed, while the other was bottle-fed on whole buffaloes' milk. Each of these groups consisted of six Awsemy and four Rahmany lambs with the same proportion of male and female. All individuals were weighed after birth and then at weekly intervals throughout the experiment (eighteen weeks suckling and ten weeks after). The fortnightly weights, however, are taken for discussion.

(*a*) *Artificial feeding.* The experiment started with approximately the same average birth-weight for