like the young or become permanently green. Reversible colour changes occur in adults of both sexes : they become darker at lower and paler at higher temperatures, darker in bright daylight and paler at night, and the entire colour and pattern are much intensified (especially in the males) on meeting another chameleon (a similar change occurs when they are handled or when they are attacked by a predator).

We have no evidence of colour change in response to a change in background colour. Thus, in this population of chameleons adult males and females undergo reversible colour changes under a variety of stimuli ; the males, however, are all basically alike, while the females are polymorphic, with a green and a brown form. In a sample of adult females collected at Kampala in April, 1963, 134 were green and 44 brown. There is some (continuous) variation in both colour forms, but each individual can be positively classified as being either green or brown. We have no evidence of adult females changing from green to brown or from brown to green.

Polymorphism of the kind described here may be maintained in a population if the fitness of the heterozygotes is greater than that of the homozygotes or if the fitness of the genotypes varies with their frequency in the population. In view of the apparently cryptic coloration of the green and the brown forms, the latter possibility seems more likely in *C. bitaeniatus*. In addition to polymorphism, the ability to change colour under different environmental conditions, particularly under different light intensities and temperatures, results in considerable diversity in colour and pattern within the population at any one time, especially if (as is often the case) there are light and temperature differences in different parts of the same microhabitat. Such diversity may afford a considerable degree of protection from predators. The restriction of polymorphism to females is reminiscent of the situation in some other animals, including diurnal Lepidoptera[1], cercopid spittlebugs[2], and birds[3]. In *C. bitaeniatus* this may be because the females are more vulnerable to predators ; in particular, unlike most chameleons, the young are retained for a considerable period within the female and are born alive.

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[1] Ford, E. B., *Butterflies* (Collins and Co., London, 1946).
[2] Owen, D. F., and Wiegert, R. G., *Amer. Nat.*, **96**, 353 (1962).
[3] Owen, D. F. (unpublished results).

Potassium Tellurite as a Bacteriostatic Agent in isolating Algae

An essential prerequisite to obtaining predictable growth of algae under laboratory conditions is the establishment of axenic cultures, but this is often extremely difficult to achieve. The successful use of potassium tellurite as a bacteriostatic agent[1] in the pure isolation of representative aquatic fungi from the orders Blastocladiales, Chytridiales[4] and Saprolegniales, using material direct from Nature which was sometimes highly contaminated with bacteria, suggested that algae might also respond to this treatment ; and the promising results obtained are reported in this communication.

For marine algae 0·01 per cent (w/v) potassium tellurite was autoclaved with plain sea-water and 1 per cent (w/v) agar and the poured Petri dishes left to lose their moisture of condensation for 24 h. Using *Falkenbergia rufolanosa* (Harv.) Schm. the young tips of freshly collected filaments were carefully washed in sterile sea-water and cleaned further by dragging them through the agar[2]. The dishes were then sealed with 'Sellotape', reversed, and incubated at 16° C with illumination from above.

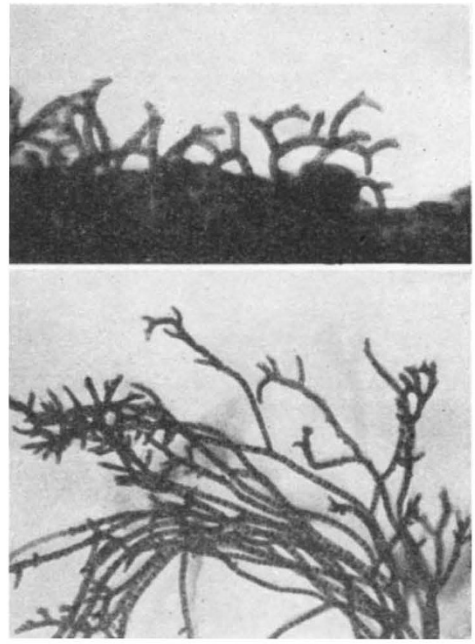

Fig. 1. Above, *Falkenbergia rufolanosa* after four-weeks' incubation in agar showing initial growth from the inoculum (below). Bacteria are present in the latter region only (× 40)

Below, *Falkenbergia rufolanosa* after six-weeks' incubation in agar showing coralloid habit (× *c.* 25)

Bacteria were not eliminated completely in the region of the inoculum, but were restricted to such an extent that the alga was able to outgrow them and produce fresh clean filaments in the thickness of the agar (Fig. 1, above). After six weeks under these conditions it was noted that the growth habit differed from that of plants grown in enriched sea-water and from that observed in Nature. The filaments branched much more profusely and often had a somewhat coralloid habit (Fig. 1, below). It is interesting to recall that a similar induced coralloid habit has been described by Stosch[3] for *Asparagopsis armata* (the gametophyte of *Falkenbergia rufolanosa*) and in this case it was ascribed to iodine deficiency when the alga was grown in liquid media. This suggests the possibility that there might be a local depletion of nutrients as our material grows in agar, and it has been noted that the 'iodine' cells are in fact less conspicuous than in collections from Nature. On the other hand, other artificial conditions of our cultures could account for the appearance observed. Other marine algae such as *Cladophora* and *Ectocarpus* species have been isolated from Nature on tellurite agar with little difficulty, the former growing best when a modified Schreiber base was used. Filaments of thalli of the Chordariales have also been grown successfully. For fresh-water algae a soil mineral tellurite agar has been used to re-isolate contaminated laboratory cultures of unicellular, colonial and filamentous members of the Chlorophyta, including *Chlamydomonas*, *Chlorella* and *Ulothrix* species ; and a species of *Gloocystis* was isolated from Nature. Success in growing both marine and fresh-water forms is dependent on the absence of free water in the dishes, a condition which we think is also responsible for the complete absence of troublesome diatoms.

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[1] *Difco Manual*, ninth ed. (Detroit, 1953).
[2] Lewin, F. A., *Rev. Alg. N.S.*, **4**, 181 (1959).
[3] Stosch, H. A. v., *Naturwiss.*, **49**, 42 (1962).
[4] Willoughby, L. G., *Ann. Bot.*, N.S., **26**, 13 (1962).