back in place and sealed with tape. Three weeks after the crab had entered its fourth hidden period, the flap was opened and the crab was observed daily.

Ecdysis occurred on the 28th day of hiding. The freshly moulted crab was pale blue, fading to near white in proximal areas. The following day the colour had become much darker, approaching the colour of the exuviæ, and a portion of the carapace of the exuviæ had been consumed. Day by day the exuviæ were consumed, the last remaining part being a claw. The night following the 36th day the crab emerged from hiding and at the time of writing has continued in an active period.

In 463 days this young *B. latro* moulted four times, increased in cephalothorax length from 20·8 to 30·0 mm, and in weight from 6·8 to 20·2 g (Fig. 1).

If the assumptions are made that this rate of growth remains constant and approximates that found in Nature, then specimens of *B. latro* with cephalothorax lengths in excess of 100 mm, which are common, must be about five years old.

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Identification of Species of *Scenedesmus*

AMONG the organisms frequently encountered in investigations of freshwater habitats are members of the genus *Scenedesmus*. Species are delimited on the basis of the size and shape of the cells, as well as position and number of spines, if present. Although Smith[1] in his monograph of the genus shows some variation in these characters, one can, with some degree of confidence, identify species quite easily.

However, when one reviews other literature concerning identification of species, especially the monograph of Chodat[2], as well as earlier supporting work by Chodat and others, one finds that these investigators had pointed out the extreme variability found in many *Scenedesmus* species. The bulk of this earlier work centred on the ability of these organisms, while in culture, to fragment into unicellular forms which resemble *Chlorella*, *Raphidium* (*Ankistrodesmus*), *Oocystis*, etc., or to form a *Dactylococcus*-like stage. Chodat emphasized that one must culture these organisms in order to determine correctly their taxonomic position. The formation of 100 per cent unicells by *S. dimorphus* in a two-membered culture with a soil bacterium[3], as well as the occurrence of a *Dactylococcus*-like stage when the soil alga was cultured in yeast extract[4], were reported.

Recently we encountered another extremely variable *Scenedesmus* species, *S. longus*, and have examined it in unialgal, bacteria-free culture. All observations discussed are with this axenic culture. When grown in liquid medium of inorganic composition under the usual laboratory conditions, the organism does not appear to be a *Scenedesmus*. Almost all the cells of the culture are unicells bearing three or four spines at each pole. When the organism is in this condition, it could be confused easily with *Chodatella subsalsa*. In fact, the unicell fits the description of the latter exactly.

By altering the conditions of growth, for example, culture on firm agar, or by use of a thermal shock, the percentage of cœnobes was found to increase markedly, almost to the exclusion of unicells. A three-day-old culture grown on 2·5 per cent inorganic agar at 22° C produced 98·6 per cent cœnobia. Only then could the organism be recognized as *Scenedesmus longus*. Although there was some variability in spine number and location, the majority of the cœnobes had the typical six spines.

The organism was also grown in soil extract[5]. This medium has been used in the past not only to supply nutrients absent in basal inorganic media, but also in an attempt to simulate natural conditions. Apparently some organisms exhibit the form seen in field collections only when grown in soil extract or in soil-water bottles[5]. When the organism described here was grown in liquid culture in soil extract, the majority of the forms were unicellular, with the cœnobe present only in the bottom of the culture. In addition, numerous unicells were suspended in the liquid. Cell size, shape and spine condition did not vary from that described here.

Further experimentation with *S. dimorphus* demonstrated that one can stimulate the production of unicells in a number of complex media. The role of an organic carbon source in reducing *S. acutus* to the unicellular condition was first reported almost 75 years ago[6].

Although these investigations have been conducted in the laboratory and one can now only speculate as to the extent of variability in Nature, we believe that pleomorphism could exist in Nature. Growth of *S. longus* in soil extract indicates that in a body of water the unicellular form might be abundant in the plankton, whereas the cœnobe could be found in bottom sampling. Reports by Prescott[7] of the occurrence of both *S. longus* and *C. subsalsa* in the lakes of Wisconsin and Michigan give some support to this argument.

With *S. dimorphus* it also appears that the introduction of organic waste in a pond or stream might change the morphology of the organism. If sufficient numbers of bacteria were present, cœnobe formation would be affected[3].

Apparently there are many species of *Scenedesmus* in which cœnobe formation is quite stable. The fact that Smith made no mention of pleomorphism in pure culture studies connected with his monograph attests to this[1].

Even though we know little, if anything, of the extent to which pleomorphism in *Scenedesmus* exists in Nature, we re-emphasize the word of caution of Chodat concerning precise identification of species of *Scenedesmus*. For a better understanding of variability in this genus field identification of unicellular and cœnobial stages from the same site, followed by pure culture studies, appear essential.

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A Fungistatic Action of Coumarin

VAN SUMERE *et al.* showed that coumarin affects the germination of wheat stem rust uredospores[1], and Bellis showed[2] that *Penicillium jenseni* and *P. nigricans* are able to grow on a modified Czapek's nutrient medium containing coumarin as the only one carbon source. So far as I am aware, no other experiments have been done to examine the ability of coumarin to regulate the growth of moulds *, in spite of the fact that some fungi normally produce coumarin precursors and derivatives[3], and the