

metrical aggregation of the particles of the soluble form without the occurrence of unfolding. There is evidence that this is the case with actin and fibrin. This theory, which may be referred to as 'the linear aggregation theory', could also account for the existence of discrete fibrils and the large lateral spacings.

Since the formation of an unsymmetrical aggregate may prove the characteristic step in fibre building, the conditions of its formation and other aspects of the theory are being investigated. The initiation of such aggregation may rest with purely colloidal forces, as will be shown in future publications from this laboratory. Afterwards, in the linear aggregate, short-range forces could ensure the orientation of the component molecules (or complexes) and thus lead to a fibril oriented at the molecular level, as is required to account for the fibre-type X-ray pattern. The mechanical stresses set up during spinning probably merely orient the preformed fibrils. Further research is necessary to elucidate the nature of the modification in small-scale molecular structure which also seems to accompany fibril formation.

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Effect of Hosts on the Egg Coloration of the Parasite *Bracon gelechiæ* Ashmead (Braconidæ)

SALT¹ has reviewed the literature on the effect of hosts upon their insect parasites. Knight² found that a carotinoid pigment of the bug *Perillus* was obtained from its prey, the potato beetle (*Leptinotarsa decemlineata*). Toumanoff³ discovered that in *Dixippus morosus* the pigmentation may be transmitted by the female to the eggs and so to the offspring. I have not come across any record of the effect of hosts upon the pigmentation of the eggs of the parasite.

Bracon (*Microbracon*) *gelechiæ* Ashm. is an ectoparasite of the larva of the potato tuber moth, *Gnorimoschema operculella* Zell. In my laboratory experiments I found the Braconid to be polyphagous, parasitizing caterpillars of various moths, for example, the Pyralids *Scirpophaga nivella* F., *Argyria sticticraspis* Hamp. and *Chilo zonellus* S., and the Noctuids *Plusia orichalcea* F., *Sesamia inferens* W. and *Earias insulana* B. The parasite was reared on the caterpillars of each of these hosts up to the fifth generation. Except in the eggs of the parasite reared on *P. orichalcea* and *E. insulana*, no marked change in the pigmentation of the egg of the parasite was observed. The eggs laid by the females of the second generation reared on the above two species showed a slight tinge of yellow pigmentation; the pigmentation

of the eggs produced by the females of each subsequent generation gradually increases, and ultimately the eggs produced by the females of the fifth generation thus reared are distinctly yellow in colour. This coloration is more intense in the eggs of the females of the fifth generation reared on *Earias insulana*. It is interesting to note that the coloration of the cocoons of the parasites of the fifth generation is yellow. It is worth mention also that when the adult Braconids thus obtained from coloured eggs are again reared on the natural host, *G. operculella*, it is found that the yellow pigmentation is markedly present in the eggs laid by the females of the next generation; but the yellow pigmentation of the eggs laid by the females of each of the subsequent generation decreases in stages. Up to the fourth generation the pigmentation, though insignificant, still persists, and is at last lost in the eggs laid by the females of the fifth generation. The normal white colour of the eggs is thus restored.

In the present case, therefore, the coloration of the eggs of the parasite is clearly a character which is induced by the host, through an article of food, and hence an important factor is environment.

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Chromosome Numbers of *Cerastium* Species

SINCE my publication of chromosome counts of *Cerastium* species in 1950¹, five further counts have been made, two of British material, *C. arvense* L. and *C. viscosum* L., and three of Continental material, *C. dichotomum* L., *C. tomentosum* L., and *C. alpinum* L. The results for these species are shown in the accompanying table.

Species	2n	Original source of material
<i>C. arvense</i> L.	72	Isle of Man
<i>C. viscosum</i> L.	72	Malham Tarn, Yorkshire
<i>C. dichotomum</i> L.	38	Not known. Seed obtained from Botanika Zahrada University, Karlovy, Prague
<i>C. tomentosum</i> L.	72	Not known. Cultivated garden plant
<i>C. alpinum</i> L.	c. 144	Abisko, Sweden

The counts for the British material, *C. viscosum* L. and *C. arvense* L., both $2n = 72$, agree with counts made by Rohweder², who used Continental material, though I have also counted $2n = 38$ for *C. arvense* L. collected in the Alps¹.

Of the Continental material, *C. dichotomum* L., $2n = 38$ (Fig. 1), has not previously been counted. *C. tomentosum* L., $2n = 72$ (Fig. 2), has also been counted by Rohweder², who, however, obtained $2n = 38$. It would appear that this species, like *C. arvense* L., is a complex one containing plants with at least two different chromosome numbers, namely, $2n = 38$ and $2n = 72$. It is hoped that crossing experiments will help to elucidate these two species.