Group	Riboflavin in diet (μgm./gm.)	Serum riboflavin (μgm./ml.) ± ε	Riboflavin in eggs (μgm./gm.) ± ε
1	1·56	0·285 ± 0·03	2·31 ± 0·13
2	3·60	0·778 ± 0·07	4·18 ± 0·22
3	5·55	0·880 ± 0·07	4·92 ± 0·22

Fluorimetric assays were carried out on the diets, blood sera and eggs by the method of Kodicek and Wang[5]. The accompanying table shows the results obtained.

It will be seen from these results that the serum riboflavin is substantially increased by supplementing the diet and that the blood-levels are directly related to egg content. An increase in the diet above 3·6 μgm./gm. did not result in a significant increase in serum level; this would appear to be in accordance with the observation of Petersen *et al.*[3] that further increase in hatchability from the inclusion of riboflavin in the diet is not attained beyond this dietary level for battery-kept birds.

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Production of Specific Group *N* Precipitating Sera for *Streptococcus cremoris* by 'Absorption' of Non-specific Antigens

Due in part to the difficulty of preparing a specific group *N* precipitating serum for *Streptococcus cremoris*, the boundaries and constituents of serological group *N* have been so far incompletely determined. Although, by means of serological methods using interfacial precipitin tests with hydrochloric acid extracts, *Str. cremoris* has been grouped with *Streptococcus lactis* by Shattock and Mattick[1], and with *Str. lactis* and with *Streptococcus diacetilactis* by Swartling[2], final confirmation of its serological identity with group *N* must depend on the preparation of a specific group serum for *Str. cremoris* itself.

Early attempts in this laboratory to produce such a serum in rabbits, using as vaccines living and variously heat- and chemically-treated bacterial cells, yielded only non-specific products, cross-reactions occurring most commonly and intensively with hydrochloric acid extracts of the streptococci of groups *K* and *L*. Absorption of these non-specific sera with suspensions of *K* and *L* streptococci completely removed the non-specific antibodies and only partially impaired the group *N* reactions. In order to produce a powerful serum specific in the first instance, it was clearly necessary to inactivate the non-specific antigens in the *cremoris* cells constituting the vaccine before the immunization process was begun. By 'absorbing' *Str. cremoris* cells with sera of groups *K* and *L*, these antigens were eliminated or rendered non-antigenic, and specific group *N* sera were obtained forthwith. Such sera have been prepared for both freeze-dried and freshly isolated strains of *Str. cremoris*.

The details of this work will be published elsewhere.

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Grana-like Structures of *Synechococcus cedorum*

During photosynthetic studies in this laboratory, the desire for an organism possessing a simple internal structure prompted us to investigate the blue-green algæ. It has occasionally been reported that these organisms contain grana or chloroplasts; but the most widely accepted opinion is that all their pigments are uniformly distributed throughout the cytoplasm[1].

A pure culture of a unicellular blue-green alga, *Synechococcus cedorum*, was grown in an inorganic medium, and one-day old cells were used for investigating the pigment distribution. After the cells were harvested by centrifuging and washed with water, they were broken by grinding with alumina[2]. The mixture was diluted with water and centrifuged at 2,000 *g* for 10 min. to remove unbroken cells, cell debris and alumina. A blue-green supernatant having a strong Tyndall effect and slight fluorescence was obtained. This supernatant was then centrifuged in a refrigerated Spinco ultracentrifuge for 30 min. at 36,000 *g*. A clear blue supernatant above a very minute green sediment was obtained. The absorption spectra of the intact cells and of the several fractions were determined from 3500 A. to 7500 A. with a Cary recording spectrophotometer. The curves of the aqueous solutions or suspensions are shown in Fig. 1.

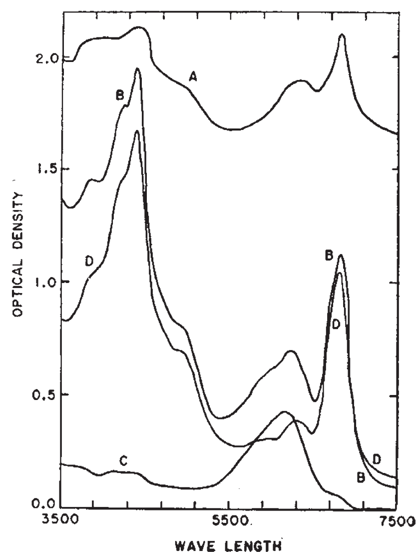

Fig. 1. Absorption spectra of *Synechococcus cedorum*. (*A*) Whole cells; (*B*) supernatant (2,000 *g*) from alumina-treated cells; (*C*), supernatant (36,000 *g*) after ultracentrifugation; (*D*) re-suspended particles obtained from ultracentrifugation

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