there is, therefore, no reversal of phases. The work of the x-ray investigators, Sponsler,[5] Astbury,[6] *et al.*, should be sufficient to convince one that gels and jellies are not emulsions.

Much confusion and erroneous instruction will be avoided if the word "emulsoid" is discarded. It was based on a misconception and is no longer used by well-informed chemists in its original sense.

So with Lady Macbeth, I cry, "Out, damned *emulsoidal* spot! out, I say!"

WILLIAM SEIFRIZ

UNIVERSITY OF PENNSYLVANIA

THE EFFECT OF SPECTRAL REGIONS ON THE CHLOROPHYLL "A" TO "B" RATIO

IN an investigation of the photochemical responses of the wheat plant to spectral regions, Lease and Tottingham[1] found the chlorophyll content to be affected. This effect was in the direction of increased chlorophyll content and greener tissues when the blue-violet was added to the red-yellow region of the spectrum. The implications of these results and the related investigations of Guthrie[2] concerning the chlorophyll "a" to "b" ratio have been followed and somewhat confirmed. Substituting for their colorimetric methods, a spectrophotometric method, a small but consistent lowering of the proportion of chlorophyll "a" to "b" has been found in wheat plants grown under a filter which absorbs the blue end of the spectrum. In agreement with work of other investigators, the absorption curves of the pure components, isolated by the procedure of Zscheile,[3] show that the ratio of the absorption coefficients of chlorophyll "a" to "b" is higher in the red than in the blue region of the spectrum. It is to be expected that the higher activation of chlorophyll "a" in red light would lead to a lowering of the "a" to "b" ratio. Apparently the almost universal proportion of three to one in normal green plants may be dependent upon the relatively constant quality of sunlight.

The lowering of the "a" to "b" ratio is increased (if it is assumed that the absorption spectrum of a chlorophyll is a sufficient criterion of its presence and amount) by irradiating with monochromatic light of such wave-length as will be largely absorbed by chlorophyll "a". Subsequent comparison of the absorption curve of an acetone extract of the irradiated leaves with that of an unirradiated sample shows an increase in maxima corresponding to chlorophyll "b" and an attendant decrease in chlorophyll "a" maxima, in both the red and blue regions. The presence of carotenoids in this extract was found to offer no significant interference. In so far as the absorption curve may be considered indicative, there is no change in total chlorophyll. An attempt is now being made to determine if the process may be reversed and chlorophyll "b," or substances absorbing in that region, be reduced to chlorophyll "a" through selective activation with monochromatic light.

W. E. TOTTINGHAM
H. J. DUTTON

UNIVERSITY OF WISCONSIN

[5] *Jour. Gen. Physiol.*, 9: 221, 1925.
[6] "Fundamentals of Fibre Structure," Oxford, 1933.
[1] E. J. Lease and W. E. Tottingham, *Jour. Am. Chem. Soc.*, 57: 2613, 1935.
[2] John D. Guthrie, *Am. Jour. Bot.*, 16: 716, 1929.
[3] Paul F. Zscheile, *Bot. Gaz.*, 95: 529, 1934.

THE "DANA" AND THE "RESEARCH"

IN an article under the heading "The Danish Non-magnetic Research Ship," in SCIENCE (January 21, 1938, pp. 59–60) there was some confusion regarding the Danish vessel *Dana* and the *Research* of the British Admiralty. It is felt this matter should be set right in order that mistaken impressions may not persist.

The Danish Meteorological Institute advises that the *Dana* is an iron vessel, recently constructed in Denmark for oceanographical and fishery researches; it is unsuitable for magnetic observations at sea.

The *Research*, on the other hand—now under construction—is a non-magnetic vessel especially designed for magnetic observations at sea to continue the oceanic work of the *Carnegie* which was so unfortunately lost in 1929 at Apia, Western Samoa. The need of such a vessel is clear from a consideration of the lacunae in the magnetic data required for the construction of magnetic charts. These gaps would have been filled had the *Carnegie* completed her last cruise, but, taken in connection with the recent rapid changes in secular variation and shifts of isoporic foci—notably in the Indian Ocean—they make for considerable uncertainty and possibly serious errors in extrapolated values of the magnetic elements over large areas.

The Carnegie Institution of Washington cooperated with the British Admiralty in the design and equipment of the *Research* by supplying plans, specifications and descriptions of the *Carnegie* and of her equipment. W. J. Peters, the first commander of the *Carnegie* and designer of many of the special instruments required for increased precision of observations at sea, spent a year in England as a consultant to the Admiralty on the construction and instrumental outfit of the *Research*.

J. A. FLEMING

THE IDENTIFICATION OF VITAMIN C

PRIORITY questions are not of primary importance to science and should be left to posteriority. If, however, such problems are discussed it is desirable that statements made should be correct and complete.

The chronological list of events given by G. C. Cox[1]

[1] SCIENCE, December 10, 1937, p. 540.