the article is to be accepted, which are judged highly desirable, which are minor suggestions. (All this is also applicable to content of an article, although this is less often altered.) And then, if any question of the acceptability of the changes to the author be possible, *insist that the edited manuscript, not proof, be returned early to the author for his consideration.* (R. W. GERARD, *Department of Physiology, University of Chicago.*)

By the regulated action of sulfuric acid paper is converted into vegetable parchment. Under similar conditions (occasionally in the presence of formaldehyde), cotton is transformed into a variety of Heberlein fabrics. Such treatment of other cellulose fibers, e.g. esparto, flax, jute, sisal, plywood (prior to folding), etc., would lead to a wide range of new materials possessing useful and attractive properties. Increased tensile strength, waterproofing, and general durability should add to the value of thread and plywood and result in a further development of textile and constructional material. In the case of wood, owing to its lignified condition, some preliminary treatment may be necessary, although not so drastic as that employed in the purification of wood pulp. The single fine layers of plywood should respond readily to such processing without impairing its original mechanical structure. (MAURICE COPISAROW, *1 Gildridge Road, Manchester, England.*)

Recent reports on the results of glucose tolerance tests in vitamin-deficient animals (O. H. Gaebler and W. E. Ciszewski. *Endocrinol.*, 1945, **36,** 227; A. Chesler, E. Homburger, and H. E. Himwich. *J. biol. Chem.*, 1944, **153,** 219; S. Banerjee and N. C. Ghosh. *J. biol. Chem.*, 1947, **168,** 207) do not refer to a series of papers published by McCay (D. McCay, *et al. Indian J. med. Res.*, 1916, **4,** 1–27; 1918–19, **6,** 485–549; 1919–20, **7,** 22–80, 81–147). I came across McCay's papers fortuitously, and it seems probable that the later authors were not aware of the vast amount of work that had been done on human subjects at an earlier date. Nor have I been able to find any reference to these studies in books, reviews, or textbooks that might be expected to mention the work. Since the studies were carried out with large numbers of patients and occupy several hundred pages of journal space, with many fully charted case reports, it is obviously desirable that they be called to the attention of modern nutritionists and physiologists.

McCay reported many cases in which patients who were losing *50 to 150 grams of glucose* daily in their urine were made aglycosuric within 2 or 3 days. The patients were first restricted to a diet of milk, vegetables, and butter for a few days: "One to two pints of milk, 12–16 oz. of green vegetables, and 2 oz. of butter for 3 days will clear the urine of sugar and the blood of hyperglycemia in 99 per cent of all cases" (*Indian J. med. Res.*, 1919–20, **7,** 81–147). The diet was then slowly built up until the caloric content was adequate, and eventually the patients were allowed to increase the rice in the diet. However, it was also stated that "in the treatment of diabetes in India the value of green vegetables cannot be too highly appraised."

One might surmise that the patients McCay studied were deficient in one or more vitamins. Certainly his findings should be confirmed or denied in terms of modern nutritional knowledge. If any assessment has, in fact, been made, no doubt others would like to hear of it. (VAN R. POTTER, *University of Wisconsin Medical School.*)

Egg number is a matter of interest in fishery biology, especially through its relation to mortality rates. The maximum usual number of ripe eggs in an individual of *Ostrea virginica,* estimated at 50,000,000–60,000,000 by W. K. Brooks (*Rep. Comm. Fish. Md.*, 1880, p. 14) and T. C. Nelson (*Bull. N. J. agric. exp. Sta.*, 1921, **351,** 8), has more recently been placed at 500,000,000 by P. S. Galtsoff (*Science,* 1930, **72,** 97–98). Computation of the volume represented by various numbers of eggs suggests that the order of magnitude of the later estimate may be too high.

Galtsoff's value was based on an estimate of 115,000,000 eggs discharged at a single spawning. The gonad of this medium-sized individual was still 7 mm. thick after this discharge and was considered to contain sufficient ripe ova for the spawning season's estimated four or five further periods of oviposition. However, 115,000,000 eggs 0.05 mm. in diameter (W. R. Coe. *Biol. Bull.*, 1932 **63,** 428) would amount to a solid mass of about 8 cc. and would presumably require an ovary of about double this volume. From the data of C. Grave (*Rep. Shellfish Comm. Md.*, 1912, **4,** 42) on cubic content of oysters, it would appear that Galtsoff's individual probably had a total body-volume of only about 15 cc. Therefore, it seems likely that the number of eggs discharged was miscalculated, perhaps by misplacing a decimal point.

A layer of gonad 7 mm. thick would be unusually great, since V. L. Loosanoff and J. B. Engle (*Bull. U. S. Bur. Fish.*, 1937, **33,** 230) report a maximal average thickness of 9 mm. for any 6-oyster sample on any date and an average of only 4 mm. for 19 samples on the best date. The volume of a gonad 7 mm. thick in an oyster 3.7 inches long seems unlikely to have been as much as 10 cc., and the volume of packed eggs which it could have accommodated would probably not be as much as 5 cc. Therefore, if (as he evidently believed) Galtsoff's oyster had discharged only about one-fifth of its ripe eggs, the absolute quantity discharged might well have been only 0.8 cc., or 11,500,000, instead of 115,000,000.

The solid volume of a half billion eggs would be about 2 cubic inches. About 110 such masses would fill a gallon. Allowing for looser packing in the ovary and for the nonovarian content of the animal, it seems probable that an oyster of size to contain 500,000,000 eggs would be one of some 40/gallon at smallest. The largest recognized commercial category of oyster ("extra large") is defined at 160/gallon. Galtsoff's oyster was evidently a "select" of about 270 count.

It is, of course, possible that, by continued gametogenesis after the inception of spawning, an oyster might during a single season produce eggs in excess of its own volume. However, available reports do not make clear to what extent this might occur in *Ostrea virginica,* and this possibility was evidently not the basis of Galtsoff's estimate. (MARTIN D. BURKENROAD, *Survey of Marine Fisheries of North Carolina.*)