rel, bushel, peck, quart, etc., for apples, peaches, cherries, strawberries and berries of all kinds, potatoes, asparagus and, as far as I have been able to note, all vegetables and practically all fruits, except oranges (sold by count) are weighed out in kilos or grams. The man with the push-cart who peddles these things in the street always weighs them, and even the basket-man, whose entire stock in trade may often be bought for less than ten cents, carries his steelyard-like balance thrown over his shoulder. Indeed, I have never seen, as I have gone about the streets of Italian cities, in any of the many vegetable shops or other shops where food material is sold at retail, any other method of measuring quantity, barring a very few cases in which counting is used, as in dealing with eggs or oranges; even liquids are generally sold by weight and when a liter of anything is asked for it is usually weighed. This morning I happened to visit one of the largest grocery and food-supply houses in Florence. Among an almost infinite variety of products sold here there may be mentioned, peas, beans (dry), hominy, meal of various kinds, etc., alcohol, benzine, petroleum and very many other articles, all of which in the United States would ordinarily be sold by the quart, peck, gallon or other capacity measure.

The manager told me that all of these, even including wine in which he deals largely, are sold only by weight; that he had once had a single liter measure in his store which he had used for a time in measuring petroleum, but that he now has no capacity measure whatever in his entire establishment. In some shops petroleum is sold by volume, but in many others always by weight.

The use of weight instead of volume is a great benefit to the purchaser and is equally advantageous to the honest dealer, but it is only possible in a system in which the translation from mass to volume is quickly and easily made. Weighing can always be done with a much higher degree of accuracy than is possible with volume measuring, allowing the same time and care.

Cheating by means of false measures, or by correct measures loosely filled or 'topped,' is very common, and inspectors find it difficult to deal with. False balances and weights are much more easily detected. Then there is that large collection of most uncertain measures of extensive use but without the least legal standing, including the box, basket, crate, package, 'bunch' and the like, by means of which peaches, berries, etc., are retailed to a confiding public, the capacity of box or basket depending entirely on the disposition of the dealer and the scarcity of the commodity. It is worth a good deal to be protected from this sort of petty robbery.

T. C. M.

Florence, Italy,
June 17, 1904.

HONORARY DEGREES IN ENGINEERING.

To the Editor of Science: For several years our technical press has called attention after each commencement season to the disproportionately small number of engineers among those whose attainments receive the sanction of academic approval in the form of honorary degrees. The *Street Railway Journal,* the exponent in America of the most progressive branch of electrical engineering, calls attention to this unsatisfactory state of affairs in its issue of July 16.

The value of education is to a very great extent realized in service, and there is no better indication of true appreciation of the ends of education on the part of our institutions which are devoted mainly to the beginnings of it than the conferring of honorary degrees wisely.

Our universities, to the extent that they stand for research, have an end in themselves, and academic honors are promptly bestowed upon those who contribute to the advancement of learning. Our colleges and technical schools, on the other hand, are devoted almost exclusively to teaching and they have no end in themselves. No college teacher can draw much inspiration from the meager attainments of his untried graduates. The fruit of his labor is extra-academic, and the effectiveness of his labor depends upon his being sufficiently a man of the world to know these fruits and to draw his inspiration from them. If the

granting of honorary degrees by our colleges to men outside of academic life has any reason to be, and surely it has, it is because such academic recognition is an expression of appreciation on the part of the personnel of the college of the things in which alone the results of their labors take on the garb of reality. As an expression of this kind of appreciation the function of the college in the granting of honorary degrees contributes vastly more to the credit of the college when wisely performed than to the sum of honor that rests upon those who do the world's work and carry its heavy dignities.

Quite the most absurd notion respecting this conferring of honorary degrees is the more or less confused idea of many a circumscribed academician that it is the making rather than the marking of a distinction; and growing out of this pitifully foolish idea is the exaggerated dread of the prostitution of this really vital function of our academic institutions.

Let one read the words of President Van Hise (SCIENCE, July 15, p. 92) and consider whether anything could be more stimulating to a group of young graduates at a time when everything conspires to awake in them the most serious emotions. If the granting of honorary degrees is not a vital function it may easily be made such, and as such its greatest, perhaps its only benefit would accrue to the institution performing it.

It is a general impression, and perhaps it is true, that the number of engineers is disproportionately small among those who at each commencement season receive honorary degrees. If it is true, it is to be hoped that some of our larger schools of engineering may consider it. In any case it would be appropriate for our Society for the Promotion of Engineering Education to look into the matter. W.

'PTERIDOSPERMAPHYTA.'

TO THE EDITOR OF SCIENCE: In proposing the name 'Pteridospermaphyta' (SCIENCE for July 1, 1904, p. 25), Professor Lester F. Ward does not seem to have noticed that Oliver and Scott have published 'Pteridospermæ' as the name of the group, in a paper presented to the Royal Society, January 21, 1904, entitled 'On the Structure of the Paleozoic Seed *Lagenostoma Lomaxi*, with a Statement of the Evidence upon which it is Referred to *Lyginodendron*.' Abstract preprints of this paper were distributed early in the year, were published prominently in *Nature*, 69: 334, February 4, 1904, and reviewed in the *Botanical Gazette*, 37: 237, March, 1904. The name was further established by Oliver in a paper entitled 'A New Pteridosperm,' published in the *New Phytologist*, 4: 32, January, 1904, and also reviewed in the *Botanical Gazette* (*l. c.*).

It was proposed by Oliver and Scott to establish 'a distinct class,' under the name Pteridospermæ, to 'embrace those paleozoic plants with the habit and much of the internal organization of ferns, which were reproduced by means of seeds.' JOHN M. COULTER.

SPECIAL ARTICLES.

AUTOTOMY, REGENERATION AND NATURAL SELECTION.

HISTORY warns us that it is the customary fate of new truths to begin as heresies and to end as superstitions; and as matters now stand it is hardly rash to anticipate that in another twenty years the new generation, educated under the influences of the present day, will be in danger of accepting the main doctrines of the 'Origin of Species' with as little reflection and it may be with as little justification as so many of our contemporaries twenty years ago rejected them. —Huxley, 1880.

Huxley's prophecy has not been quite fulfilled, for the fate of natural selection as a scientific account of organic adaptations still depends on the testimony of witnesses. Nevertheless, the warning of 1880 is a wholesome stimulant to take before considering some recent objections that selection accounts neither for the process of self-mutilation, so common among the crustacea, nor for the ability of living things in general to repair injuries by the restoration of lost parts.

These two processes, autotomy and regeneration, have been studied by those who consider