ments and of administrative officers were reduced, no salaries of faculty members on regular academic appointments in the university were reduced. With some little measure in financial relief, immediate and strenuous measures were taken to repair any damage and to increase the effectiveness of the various departments. Within the last two years scores of men have been added to the faculties to strengthen all phases of university work, and science, rather than being neglected, has been tremendously stimulated by the addition to all ranks of the faculty from instructor to distinguished service professor (the science division being the one and only instance in which a man has been appointed from outside the university to a distinguished service professorship). The head of one science department, requesting of President Hutchins the appointment of one of three good men believed to be available, was told that if all three men were *good* to get the three of them. This was done, with their appointments having been made as of October 1, 1937.

With regard to support for scientific investigation there has been no evidence of a recession, and no case is known to the writer where research programs have been curtailed. It is well known that during the depression the most strenuous measures were taken to provide necessary equipment, personnel and other requirements. Investigation in all branches of science is on the upgrade rather than experiencing retrogression. Whatever impressions have been gained from outside the university, therefore, should be evaluated in terms of actual existing conditions. Science is going forward to a degree even greater than in previous periods, which precludes any immediate danger that it will be overthrown at the University of Chicago.

CARL R. MOORE

THE UNIVERSITY OF CHICAGO

EFFECTS OF FREEZES IN SOUTHERN CALIFORNIA ON SHADE AND ORNAMENTAL TREES

IN the August 22, 1913, issue of SCIENCE this writer presented some observations on the effects of a hard freeze in January of that year on certain shade and ornamental trees in Redlands and vicinity. In particular, mention was made of the effects upon the Pepper, the Acacias, the Grevilleas and several varieties of Eucalypti.

In January of 1937, Southern California was subjected to another period of freezing temperature, which, according to official weather reports, exceeded in severity any previous record. In Redlands, where these records were obtained, twenty-one days of the month of January experienced temperatures of freezing or below. Eleven days experienced a temperature of 26 degrees or below. The mean temperature of the month was recorded as 6 degrees lower than ever before experienced here.

The effect of the 1937 freeze upon the trees of this vicinity is, however, so very different from that of 1913 that a brief comparison may be of interest. The damage produced by the 1913 freeze was very great, both upon the ornamental and shade tree varieties mentioned above and upon the citrus trees as well. The damage produced by the 1937 freeze was negligible.

In 1913 hundreds of trees were killed outright. Due to injudicious haste in removal, hundreds of others that doubtless would have recovered if left alone, were sacrificed. As pointed out in the 1913 article the ability of many trees to recover, even though apparently every shred of live bark was killed and peeled off, was remarkable. In numerous instances the production of adventitious buds covering the trunk from ground to many feet above ground was one of the notable features of the recovery. Following the 1937 freeze very few trees showed a splitting of the bark. Entire defoliation in some varieties, especially the Peppers, did occur to a considerable extent. The defoliation was frequently attended with destruction of the tender twig growth and in some cases larger limbs were killed. In some varieties, especially the Eucalypti, the peculiar fuzzy growth due to the development of adventitious bud growth is evident, even though no bark peeled off. I have seen no exudation of gum such as was very common in 1913.

Any attempt to explain the difference in the effects of the two freezes is, of course, attended with a degree of uncertainty. It is to be noted, however, that in 1913 the cold came on suddenly, and was attended by a high, dry, north wind. The cold lasted about two days only, and was followed by warm, bright, sunshiny days. The mean temperature for 1913 was considerably above average. Very few of the citrus growers in 1913 were equipped with "smudge pots" or heating equipment, and no considerable smudge smoke accumulated. As soon as the sun rose, its heat began to have an effect, and increasingly so throughout the day.

In 1937 the cold increased gradually and was unaccompanied by wind. A very considerable portion of the citrus acreage in and around Redlands is now under heat, and "smudging" or heating is now much more general than in 1913. The smudge smoke accumulated like a dense pall over the entire area, and persisted pretty much during the entire daylight hours for a period of several days. At no time for a period of several days at a time did the temperature rise much above freezing. When it did warm up it did so gradually. Almost without exception the orange trees

came through undamaged, though some of the lemon orchards suffered considerably.

One lesson learned from the 1913 freeze and put into effect in 1937 was the danger of undue haste in removal of apparently seriously damaged trees. Give nature a chance and she will repair her own damage to a very remarkable degree. Very few trees of any variety have been sacrificed in 1937.

S. A. SKINNER

REDLANDS HIGH SCHOOL,
REDLANDS, CALIF.

"IDEST"

IN reading—rather belatedly, I must admit—your issue of November 5 last, I was interested by Mr. C. H. Briggs's letter on page 423, headed "Idest: A Word for avoiding Ambiguity."

While fully agreeing with the point Mr. Briggs raises as to the unfortunate ambiguity frequently inherent in the use of "or," I do feel that his proposal to add to our unfortunate and overburdened language yet another word can only be justified on the score of dire necessity.

In the present case, I do not think this necessity arises. There is already available an expedient which has, I think, been used for a long time past. This expedient is simply the use of parentheses where the second word is merely an alternative term for the first. For example, instead of writing, as Mr. Briggs suggests, "Turkish idest Aleppo galls," "tannin idest gallotannic acid," "muriatic idest hydrochloric acid," why not simply "Turkish (Aleppo) galls," "Tannin (gallotannic acid)" "muriatic (hydrochloric) acid"?

G. R. L. POTTER

OTTAWA, ONT., CAN.

THE MANUFACTURE OF KRAFT PULP AND PAPER

IN the account of the exercises in connection with the celebration at Fernandina of "Florida Industries Day" (SCIENCE, January 28, 1938, p. 82) it was stated: "Honor was paid to Dr. Charles H. Herty, by whose research in a small laboratory in Savannah the process of manufacture was discovered." This is an error which has frequently been made in recent weeks, particularly by correspondents of the daily newspapers not familiar with the history of the manufacture of pulp and paper.

In order that the situation may be clarified and justice done to all concerned, I hope that SCIENCE will reproduce the following extract from an address I made at a recent public gathering in Savannah, Georgia, which quotes textually and accurately my remarks bearing on this misunderstanding.

> Too much credit has been given me in an over abundance of good will on the part of many of the daily newspapers. For instance, in its account of the Fernandina celebration about a month ago, the *New York Times* correspondent stated I was the discoverer of the process for making kraft pulp and paper.
>
> This was so plainly an error it was not worth correcting to paper men, but in order that the record may be clear to all, let me say the kraft pulp and paper industry has been in existence in the South for the last twenty-seven years.
>
> The man who was responsible for that development is a man living and working here in Savannah, namely Ed Mayo, who was a pioneer in the field and who struggled with those same difficulties, prejudices and skepticism which we have been going through in trying to start the news-print industry from pine in the Southern States.

CHAS. H. HERTY

REPORTS

PROGRESS OF THE NEW YORK ZOOLOGICAL SOCIETY

THE New York Zoological Society during the year of 1937 made definite strides forward in connection with certain of the activities to which it is dedicated. Before commenting on this progress, it may be said that the collections at both the Zoological Park and the Aquarium are extremely extensive in regard to both interest and number. At the close of the year there were at the park a total of 2,607 specimens, representing 988 species, and at the aquarium a total of 10,804 specimens, representing 480 species.

Among the rare and interesting acquisitions in the park during the past year were the following: The only Okapi that has ever been seen in this country; a pair of Roi Rhebok antelope, Beisa and Saiga antelope; a pair of Muntjacs; a giant armadillo; scarce birds of paradise; a pair of quetzals, which are the first ever exhibited in any zoological collection, and many other unusual specimens.

Among the most interesting acquisitions at the aquarium were a Madeira scorpion fish; a sea-bat; whip-snake eel; Nile puffer; pink wrasse; Chinese river turtles, Chinese alligator; Coecilians from South America; locust lobsters from Madeira; black-banded butterfly fish; black-barred squirrelfish; panther fish; Chinese fresh-water crabs; and many others. For the first time we have been able to discover more successful methods of keeping octopi alive. The difficult technique of maintaining this delicate animal is gradually being acquired.

During the year 2,655,870 persons visited the zoological park and 2,626,893 persons visited the aquarium.

Improved methods of interpreting the many fascinating facts and principles of zoology are gradually being developed, so that the public may come to see