The conservation of water power means using it, for all the water power that is not used is forever lost."

The first eight words of the statement could be used by anti-conservationists in opposing conservation activities on the grounds that the latter require the present generation to suffer for the benefit of future generations. Regardless of the moral status of such a requirement, it is practically certain that no "present generation" would submit to it.

For fifteen or twenty years, America's most effective conservationist, Mr. Gifford Pinchot, has found it necessary to disabuse people's minds of the misconception that conservation means disuse. As recently as May 17, 1924, in an article in the *Saturday Evening Post,* Mr. Pinchot said:

> Let no man persuade you that conservation and stagnation are the same. From the beginning conservation has meant wise use in the public interest, and it means wise use to-day. This generation has a right to all it needs, but no right whatever to waste what it does not need. Our children have their rights as well as we. If there was ever a policy since this world began that was simple, sound and filled with common sense, it is the policy of conservation.

Mr. Pinchot explains in the same article that the oil deposits *in the national reserves* need not be exploited *now*. The reason obviously is that the oil in them is not now needed. But conservation should include privately owned as well as publicly owned oil deposits, just as it should include privately owned forests. Private oil properties are sufficient for present needs and as Pinchot says, "This generation has a right to all it needs, but no right whatever to waste what it does not need."

As a definition of conservation, Dr. Slosson quotes from Acheson: "Conservation consists in the utilization of the inexhaustible for the preservation of the exhaustible." This sounds attractive and it perhaps describes a laudable ultimate ideal. But for economic, physical or other reasons, its practical application is impossible in meeting many of our greatest and most urgent needs, with the knowledge now available. In my opinion a more workable though rougher definition which is readily inferred from the writings of Roosevelt, Pinchot and other great conservationists is, "Use without waste and, wherever possible, with replacement."

The great problem in the conservation of exhaustible resources is to find and to apply feasible methods of increasing the efficiency of utilization, which is about the same as saying to find and to apply feasible methods of reducing waste.

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THE eight words of mine that Dean Farrell criticizes, "The conservation of oil means not using it," are literally true, yet I did not intend them to be taken literally. To keep the oil in the earth would indeed conserve it—if nobody tapped the pool—but it might better have been used up than to remain forever unused.

I am reminded of the poor woman whom a philanthropic visitor found in the slums. She had five small children and one at the breast; her husband had broken his leg; she was out of food and fuel and was about to be evicted from the flat for non-payment of rent. Yet she boasted of having five hundred dollars in the savings bank and when the visitor asked why she did not draw out some of it she replied that she was "saving it for a rainy day."

I really did not anticipate that any reader of *The Scientific Monthly* would suspect me of advocating such an extreme form of conservation. And I hasten to add—lest I be called before the Senate Investigating Committee—that I was not talking about oil especially, but discussing the general principle of conservation applicable to coal, certain metals and minerals, and any other natural resources that are limited and irreplaceable.

Yet I may confess that I believe the day is coming —and I hope to live long enough to see it—when it will be wise to prohibit the burning of petroleum and natural gas because they will be found indispensable as material for the manufacture of organic compounds, possibly even food since edible fats have been made from petroleum. If that be treason, make the most of it.

EDWIN E. SLOSSON

SCIENCE SERVICE
WASHINGTON

MR. W. E. MYER'S ARCHEOLOGICAL COLLECTION

THE late W. E. Myer, of Tennessee, served as volunteer assistant in the Bureau of Ethnology for several years. For about forty years he had made studies of the archeology of the Tennessee and Cumberland river valleys. Dr. J. Walter Fewkes, head of the bureau, told me last May that the bureau had lost a most efficient and valuable worker. Myer was one of the few men in the United States who was familiar with prehistoric cultures throughout the main Mississippi valley. He has left an important work in manuscript form embodying detailed studies in Tennessee archeology.

Up to the time of Mr. Myer's connection with the bureau, he carried on extensive researches at his own expense. He very carefully recorded all specimens

found. He left his heirs some 15,000 or more stone, bone, shell, clay and copper artifacts of aboriginal workmanship. These include many interesting engraved shells, decorated copper plates, effigy pipes, etc. It is doubtful whether Myer's collection could be duplicated in the state of Tennessee, since most of the monuments and graves have been explored.

The heirs wish to have Mr. Myer's collection preserved intact in some museum. It has been highly recommended by Dr. Neil M. Judd, of the Smithsonian, Dr. Fewkes and others. Mr. Myer's son, Mr. W. H. Myer, care of Frazer & Co., 30 Church Street, New York, N. Y., has the matter in charge and will be glad to correspond with any museum officials who are interested.

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SCIENTIFIC BOOKS

Illustrated Flora of the Pacific States, Washington, Oregon and California. By LEROY ABRAMS. Vol. 1. Stanford University, California, Stanford University Press, 1923. xii + 557 pp. $9.00, prepaid.

A DESCRIPTIVE flora is primarily for the purpose of enabling one to identify the plants of the region covered. But some go farther than this and aim to give also new information regarding the plants themselves. Professor Abrams' flora is distinctly a work of this latter sort and is to be classed as a valuable contribution to knowledge of the morphology, relationships and geographic distribution of the species growing spontaneously in the three Pacific Coast states. The flora of this region has been so little studied, as compared with that of other parts of the United States, that numerous readjustments in the classification are necessary if an author is to present anything more than a compilation of previously recorded facts, and in the present instance his intimate field acquaintance with the flora and his access to types in eastern and European herbaria have enabled him to prepare what is essentially a critical revision of each of the genera treated.

But this assembling of new material has not been permitted to interfere with the more immediately practical values of the book. The style and general make-up are frankly patterned after the well-known illustrated Flora of the Northern United States and Canada, by Britton and Brown. Consequently, each species is illustrated by a text figure as well as keyed and described and the distribution and principal synonyms are clearly given. It is confidently predicted that, as in the case of its prototype, the figures will greatly add to the popularity of the work and that many users who would otherwise prefer a more conservative treatment of genera and species will be led to adopt the accompanying names.

In the matter of generic and specific concepts, the author has not gone to the extreme in either direction, although there is a decided tendency towards the acceptance of generic segregates and "small species." The nomenclature follows the rules now under consideration by the American Botanical Society and recommended by its nomenclature committee (of which Professor Abrams is a member). There is here a splendid opportunity for comparing the results with those obtained when the International Code and a more conservative treatment of genera and species are followed, for Professor W. L. Jepson, who in the main follows the latter code and who is moderately conservative, has recently covered most of the same area and the same families in his "Flora of California." Since much of this first volume of the Abrams flora has been contributed by collaborators, some of whom also contributed to the Jepson flora, it is necessary to select for comparison some portion of each book prepared by the author himself. Consequently the Liliales and Orchidales have been chosen as furnishing a fair comparison, and all non-Californian forms have been excluded, since these are not covered by Professor Jepson's work. In the two orders named, Abrams gives 8 families, 57 genera and 255 species, whereas Jepson has 5 families, 45 genera and 225 species. Furthermore, there are 55 additional cases where the plant names differ, although the authors are in agreement as to specific limits. The final result is that if one were to use Abrams's flora and then turn to Jepson's, he would find that of the 255 plant names accepted in these orders by the former, only 170, or about 67 per cent., are given full recognition by the latter. The remaining 85 names, or 33 per cent., would need to be sought among the synonyms and a considerable number could not be found even there.

In attempting to discover the reasons for these differences, it develops that 29 per cent. of the cases of non-agreement are traceable to differences in the rules of nomenclature followed by the respective authors, while 71 per cent. are due to differences of opinion as to what constitutes genera and species. It seems, therefore, that an agreement among taxonomists as to rules of nomenclature, although much to be desired, is perhaps only secondary in importance as compared with the need of an agreement on generic and specific limits.

On analyzing the situation farther, it is found that, at least as between these two authorities, the shifting of generic lines is responsible for as many name changes as is the difference in species concept. What an enormous amount of confusion would be avoided if all systematists were to apply the principle