

the Fresno region, where the ground water originally stood forty feet below the surface, while now it is at a few feet, and sometimes *at* and above the soil surface. It is historically certain that the rise of the ground water came about there, as at many other points, not from direct over-irrigation, but by the enormous leakage of water from ditches with porous, sandy bottoms and banks. From these I have frequently traced the water slope sideways until the auger reached a depth of ten or more feet; and the gradual rise of the water level in neighboring wells, whose sides remained dry save within reach of the capillary rise of the water, proved plainly that the water was ascending from the original level by hydrostatic adjustment, not by penetration from above; where as a matter of fact irrigation often had not even begun.

The extraordinary accumulation of alkali salts at the surface that has occurred in the Fresno and some other regions of the San Joaquin valley, are clearly due originally to the leaching upward of the entire mass of alkali in the sub-strata. The investigations of the California Station have shown that in the arid region few uplands normally contain less than from 2,000 to 2,500 pounds of soluble salts per acre in four feet depth; and much more has been found in the silty sub-strata of the Salton basin in southern California, even to 22 feet depth. When all the salts thus contained in 40 feet of material are leached to the surface in addition to the accumulation already existing there, the overwhelming invasion we find where these leaky ditches exist cannot surprise us.

E. W. HILGARD.

REPRINTS OF SCIENTIFIC PAPERS.

TO THE EDITOR OF SCIENCE: Will you allow me space for a word concerning a point of professional courtesy? It arose in connection with a personal experience. The incident is wholly trivial, namely, the failure of the publishers, or editor, of the *New York Teachers' Monographs* to furnish the reprints promised of an article which appeared in the October number.

It is the custom of writers on technical science to exchange copies of their published

monographs. The brochure is sent frequently with an explicit—and always with at least the implied—request for a similar courtesy in return, upon the appearance of anything of the receiver's own in print. The relation thus becomes one of simple duty, which may not be considered or 'disregarded at will. To each of his correspondents one owes a debt which is discharged only when copies of his own published work have been sent in exchange.

But the matter goes deeper. The contributor to technical scientific periodicals is rarely, if ever, paid for his writings. These publications, in many instances founded and supported by associations of scientific students, are not primarily commercial enterprises, but vehicles of communication among scholars having common interests and aims. They are means by which is made possible the publication of monographic literature, the printing of which, in the majority of cases, would be too heavy a burden for the individual writer. It is part of the meaning of these technical journals' existence that the process of thus communicating scientific thought shall be facilitated as greatly as possible.

This function has been very widely and generously recognized by the publishers of our reputable scientific periodicals in America. It is expressed in the custom of presenting to each substantial contributor a larger or smaller number of separately bound reprints of his article for distribution. Upon the free exchange of monographs which thus becomes possible the scholar depends in no small degree for the equipment of his working library; for this literature, which represents the points of immediate growth in special lines of thought, finds its way only slowly and incompletely into permanent print. It is, therefore, a matter of serious and general importance that these relations between contributor and publisher should be cordially maintained, and the flagrant infraction of them should not remain unknown.

ROBERT MACDOUGALL.

NEW YORK UNIVERSITY.

THE SACRAMENTO FORESTS OF NEW MEXICO.

TO THE EDITOR OF SCIENCE: In a communication to your paper dated November 8, 1901,