

second paper contains a description of similar experiments upon the earths and alkaline earths, only that part which deals with the successful experiments being reprinted. W. R. O.

THE DISCOVERY OF OXYGEN. By Joseph Priestley, 1775, and Carl Wilhelm Scheele, 1777. Being Nos. 7 and 8 of Alembic Club Reprints. Edinburgh: William F. Clay. 1894.

Among the first things learned by students in chemistry, is that "oxygen was discovered almost simultaneously by Priestley in England, in 1774, and Scheele, in Sweden, in 1775." That the work of these men was independent of each other is also well known. Many have become acquainted with their work in a general way, but few have had the opportunity of following the original experiments as described by the experimenters. This opportunity is offered now by the publishers of the Alembic Club Reprints. Nos. 7 and 8 of this series are the Discovery of Oxygen. Part I (No. 7) by Joseph Priestley, and Part II (No. 8) by Carl Wilhelm Scheele, the latter a translation. They consist of sections taken from larger works of these authors, and, save for a short preface by the publisher, are without note or comment. Both Priestley and Scheele are minute in the description of the numerous experiments carried out in this work.

They began experimenting at different ends of the subject. Priestley was of the "try something" type of worker, and in his different experiments the peculiarities of "dephlogisticated air," as he afterwards called it, "obtruded themselves upon him." He first obtained the "air" then studied its properties. He tried to obtain this "air" from every available substance. The bulk of it was obtained from mercuric oxide and red lead and nitric acid. Scheele, on the other hand, found that air was not a simple substance, but contained a gas, which he called "fire air." The experiments which were performed when this truth was discovered are well described. They consisted in placing oxidizable substances in bottles which were well corked, and allowing the air in them to act for different periods of time, then opening the bottles under water and noting the diminution in the volume of air by the water entering the bottles. Then the work of producing "fire air" was undertaken, numerous experiments were carried out, the results of which are well known.

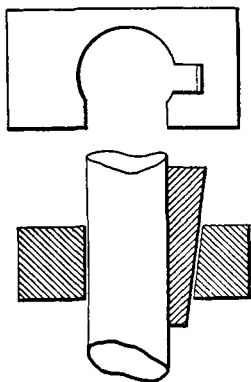
These two men had the theory of combustion in their grasp, and almost explain it in their writings, that they were unconscious of this fact is surprising.

The publishers of these Reprints are to be thanked for placing before the chemical world the work of these two men in such a handy and attractive form. A digest of a work is good, but the original furnishes the only true satisfaction. So these little books should be extremely valuable to the student, by enabling him to see the discovery of oxygen in its original shape.

OWEN L. SHINN.

### NOTES.

*Convenient Burette Clamp.*—A convenient form of burette



holder may be made from the appended sketch. A simple wedge being employed in place of the screw clamp to hold the tube in position. The surface of the wedge bearing on the tube should be slightly curved to ensure accurate contact. Cork is not necessary on bearing parts, as very slight pressure on upper end of wedge causes the tube to be held with great rigidity. Holder should be made of maple, wedge of hickory or other hard wood.—*Clarence Quinan.*

*A New Atmospheric Element.*—Lord Rayleigh and Professor Ramsay announce the discovery of a supposed new element contained in the atmosphere to the extent of about one per cent. Two methods of separation have been used. The first method consists in passing high tension electrical sparks through a mixture of equal bulks of air and oxygen confined over potash solution until no further diminution in volume ensues. The excess of oxygen is then absorbed by alkaline pyrogallate. The second method consists in removing the oxygen from air by red hot copper and the nitrogen by heated magnesium. The remaining gas has a sp. gr. of 18.9 and is more inert than nitrogen.

Wm. Crookes has examined the spectrum of the gas when the