

effect of replacing nitrogen by other gases. The effect of varying the initial pressure, and of the addition of either hydrogen or steam, on explosions of carbon monoxide and air is also described. The significance of the formation of nitric oxide during such explosions is discussed. It is made clear that nitrogen is far from being an 'inert' diluent, for "it seems probable that in carbonic oxide — air explosions, nitrogen and carbonic oxide can act 'in resonance', the nitrogen intercepting and absorbing the characteristic radiation emitted by the burning carbonic oxide, thereby acquiring increased internal (vibrational) energy and under such 'excitation' becoming chemically more active than normal nitrogen molecules of the same mean kinetic energy" (p. 140).

Explosion experiments are also used to study the effect of initial pressure on the limits of inflammability of gases and to obtain information as to the specific heats and degree of dissociation of gases at high temperatures.

It would be idle to attempt to discuss the several controversial matters to which the authors' interpretation of their results is directed; for, as already stated, there is no basis for comparison of the results themselves. If it were permissible (and it may be) to argue from the innumerable results of explosions at low pressures, it might be suggested that, since the relationship between time and pressure, given by a time-pressure manometer chart, is, unfortunately, influenced by such externals as the characteristics of the pressure-gauge, the shape of the explosion-vessel and the position of the point of ignition, the interpretation of time-pressure records of low-pressure gaseous explosions, and it may be of these high-pressure explosions also, is rendered somewhat uncertain.

The book is remarkable as a record of achievement and of triumph over difficulties. As such, it should make a wide appeal.

R. V. WHEELER.

Our Bookshelf.

Repetitorium der allgemeinen Zoologie (Morphologie, Physiologie, Ökologie, Abstammungslehre). Von Prof. Dr. Walter Stempell. Pp. vi + 268. (Berlin: Gebrüder Borntraeger, 1929.) 7-60 gold marks.

"REPETITORIUM" inevitably suggests a cram-book, and in his preface the author humorously describes how he was brought to write this work especially to help the young student of medicine or of agriculture who wants to 'get up' zoology for his examination in the least possible time. But if the published outcome of Prof. Stempell's difficult undertaking is any true index of the

extent and diversity of the zoological knowledge required from the German student at this stage in his education, then indeed the English universities should look to some revision of their teaching in the elementary grades.

The first section deals mainly with morphology, and in spirit it is as far removed from the old-fashioned 'type-teaching' still favoured by many of our schools as it is from the specialised 'zoology for medical men' in vogue elsewhere. There follow admirable sections on physiology, embryology, ecology, and evolutionary theories.

The author apologises for the 'mere extract' that is all he can furnish within the limits he has set himself, and he especially directs that it be used as an accompaniment to more detailed works. "An extract", he says, "can never be a really well-flavoured and meaty soup." But the extract he has so skilfully prepared is far from flavourless, and one must only regret that incapacity to read foreign languages with any ease must debar so many English students from tasting this really sound decoction. D. L. M.

Die Tierwelt der Nord- und Ostsee. Begründet von G. Grimpe und E. Wagler. Lieferung 14, Teil 10f: *Amphipoda*. Von K. Stephensen. Pp. 188. (Leipzig: Akademische Verlagsgesellschaft m.b.H., 1929.) 15-60 gold marks.

DR. K. STEPHENSEN'S account of the Amphipoda takes an important place in this most useful work. Such a specialist in the subject of course understands how to treat it simply and yet fully, and those who use this monograph will find their work made easy for them in many ways. With this large group it is impossible to figure every species, but every genus is figured, and usually a part or parts of every species. These illustrations are clear and good, and one should be able to identify from them any species in the area. Useful keys are supplied beginning with the sub-orders and tribes, through families and genera, to species. More work than usual is involved in these keys, for in some cases the males and females are so different that they have to be specially separated.

The systematic part of the work occupies 148 pages out of the whole 188. The introduction, besides describing the anatomy clearly, gives a very good account of the bionomics of the Amphipoda. This is specially interesting, for it touches upon such subjects as intersexes, sexual dimorphism, breeding habits, development, life-histories, food and parasites. A large amount of space is given to biogeography and the detailed notes on distribution are of great value. All students of the group will be grateful for this work.

A New School Chemistry. By F. Sherwood Taylor. (Dent's Modern Science Series.) Pp. viii + 508. (London and Toronto: J. M. Dent and Sons, Ltd., 1929.) 5s.

ALTHOUGH the subject matter of this elementary text-book is not new, the author's presentation of it is clear and attractive, the chapters being divided into descriptive text, practical exercises,