ing." The discussion includes a brief review of the apparatus that is used in each operation. The Appendix (4 pp.) includes the methods of preparing the various indicators, reagents and solvents used throughout the manual.

The reviewer feels that the manual is a worthy companion to the text "Organic Chemistry" by Porter and Stewart (Ginn and Company, 1943) and that it should be very useful in an elementary organic course of the type for which it has been designed. The diagrams throughout the manual are entirely adequate, and the paper, press work and binding are very good.

CHARLES R. DAWSON

COLUMBIA UNIVERSITY

Second Year College Chemistry. By W. H. CHAPIN and L. E. STEINER. New York: John Wiley and Sons, Inc. Fifth edition. 575 pages. 1943. $3.75.

SCHOLARLY additions by the junior author give this text better balance of subject-matter than its predecessors. Although sequence of topics remains the same, much material appears for the first time. This includes a more rigorous correlation between the physics and chemistry of liquids and of solids; new mathematical derivations inserted in smaller type for the abler student; 165 miscellaneous problems in the appendix; crystal structure with splendid diagrams and an excellent discussion of ionic and covalent radii; mathematical derivation of the law of radioactive decay; descriptive material on tracer isotopes; and a detailed treatment of the Brønsted system of acids and bases.

The preface states that "the kinetic point of view is maintained throughout." For this reason it might have been advisable to include such subjects as reaction rates and the simpler aspects of quantum and statistical mechanics and the use of potential energy curves in this otherwise well-rounded, valuable text.

HUBERT N. ALYEA

PRINCETON, N. J.

General Chemistry. By HORACE G. DEMING. New York: John Wiley and Sons, Inc. Fifth edition. 706 pages. 1943. $3.75.

COMPLETELY rewritten, the new edition still emphasizes physical chemistry aspects, an approach for which Professor Deming has gained a worthy reputation. As such the treatment should appeal particularly to students in engineering. Rearrangement in order of topics has been extensive, with chapters on the atmosphere, the periodic table, atomic structure and pH appearing much earlier than in the fourth edition. Discussion of principles is curtailed somewhat to provide room for approximately a hundred pages of new material on industrial chemistry in the war effort: plastics, elastomers, ceramics, hydrogenations, light metals, detergents, and so forth. Once again the author has given us a top-notch, up-to-the-minute text.

HUBERT N. ALYEA

PRINCETON, N. J.

AUDIOMETRY

Clinical Audiometry. By C. C. BUNCH. Pp. 186. Illustrated. St. Louis: The C. V. Mosby Company. 1943. $4.00.

This is an intensely personal account of the author's life work—the development and use of the audiometer and the obtaining of countless audiograms. The sudden and untimely death of the author, just after completion of the manuscript, probably accounts for the frequent repetitions, quick digressions and returns that might have been eliminated in a final "polishing off."

The point of view of the book is highly specialized and does not extend far into any of the related fields of physics, physiology, psychology or clinical otology. For example, the author does not accurately explain or define the decibel, although it is now the accepted unit of measurement of hearing loss.

It is surprising, also, that no mention is made of the calibration of an audiometer, or of the range of variation of "normal" thresholds, or of possible differences in calibration of different commercial instruments.

In spite of its shortcomings, however, the book will remain a valuable record of the development of audiometry and of Dr. Bunch's extensive acquaintance with human auditory function.

HALLOWELL DAVIS

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REPORTS

DOCTORATES IN SCIENCE[1]

BOTH the total number of doctorates granted in all fields of knowledge, including the sciences, and the total granted in the sciences alone reached an all-time high in the 1940–41 academic year. In all fields together the decline was about 9 per cent. from 1941 to 1942 and 17 per cent. from 1942 to 1943. In the group of the sciences alone, the decline was about 10 per cent. from 1941 to 1942 and 16 per cent. from 1942 to 1943. These figures are surprisingly uniform. They reflect an interestingly stable relation between the sciences as a group on the one hand and the social sciences and humanities as a group on the other. For

[1] Based upon "Doctoral Dissertations Accepted by American Universities, No. 10, 1942/43." New York: H. W. Wilson Company. 1943.

all doctorates granted in the last ten years, the median has been 56.6 per cent. in the sciences and 43.4 per cent. in the social sciences and humanities. The maximum variation either way in any one year was less than 2 per cent.

Full tables of science dissertations for the nine years from 1934 to 1942 were printed in SCIENCE a year ago (97: 333–5). We will not repeat them. We show here only the figures for the past three years in which the decline has been taking place. Table 1 is arranged in order of the 1943 ranking of the various sciences.

TABLE 1

	1941	1942	1943
Chemistry	672	588	538
Biochemistry	116	138	129
Physics	191	146	124
Zoology	125	110	103
Psychology	117	125	95
Botany	102	120	89
Agriculture	78	55	61
Bacteriology and microbiology	71	69	56
Physiology	77	66	49
Mathematics	95	85	44
Geology	53	56	36
Entomology	46	44	32
Pharmacology	31	31	29
Genetics	31	23	29
Engineering	76	47	22
Horticulture	23	21	14
Astronomy	11	7	14
Metallurgy	17	11	13
Anthropology	19	14	12
Geography	16	16	10
Anatomy	18	16	10
Medicine and surgery	18	15	10
Public health	15	14	6
Mineralogy	3	6	4
Paleontology	11	6	3
Meteorology	1	3	2
Seismology	1	1	1
	2034	1833	1535

Chemistry and its near-twin biochemistry lead the group in 1943, biochemistry having for the first time taken the lead over physics, which has been in the second place for several years. Chemistry, however, is increasing steadily in relation to all other doctorates granted. In 1939 it was 16 per cent. of the total. In 1940 it was 17 per cent.; in 1941, 18 per cent.; in 1942, 19 per cent., and in 1943, a full 20 per cent. It now totals more than a third of all science doctorates granted in 1943. If biochemistry were to be added in, the percentage would be still higher.

It might be interesting to observe what universities gave 25 or more doctorates in the sciences as a group in 1943.

TABLE 2

1. Minnesota	91	12. Iowa State	47
2. Cornell	87	13. Massachusetts Institute of Technology	47
3. Wisconsin	84	14. Harvard	39
4. California	74	15. Pennsylvania	31
5. Columbia	71	16. Maryland	27
6. Chicago	58	17. New York	27
7. Illinois	57	18. Northwestern	25
8. Michigan	55	19. Purdue	25
9. Ohio	54	20. Texas	25
10. Iowa	49		
11. Pennsylvania State	48		

A comparison of Table 2 with Table 2 in last year's SCIENCE is interesting. Chicago has taken a big drop from 114 science dissertations to only 58. Minnesota, Cornell, Pennsylvania State and Texas gave more science doctorates in 1943 than in 1942. Every other institution gave fewer. When the 1943 totals are added to the nine-year totals given in last year's SCIENCE, the standings are:

1. Cornell	886
2. Wisconsin	879
3. Chicago	857
4. Columbia	755
5. Illinois	741
6. Michigan	740
7. California	723

There are no significant changes of order below the seventh place.

One fact of some interest is that in 1943 forty-three dissertations were reported as "Secret war research." Of these, twenty-two were in chemistry, sixteen in physics, two in psychology and one each in pharmacology, physiology and zoology.

This report makes it clear that the war emergency is seriously reducing the output of doctorates in American universities. Perhaps this is as it should be. However, it is a situation that will demand early attention when the emergency is over because most of our technical and industrial advance ultimately depends upon scientific research in our universities. We are, of course, quite aware that many industries have their own research laboratories, but these depend for manpower upon the output of doctors from the universities.

EDWARD A. HENRY

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SPECIAL ARTICLES

A FILTERABLE VIRUS ISOLATED FROM A CASE OF KAPOSI'S VARICELLIFORM ERUPTION

KAPOSI'S varicelliform eruption is a comparatively rare exanthem occurring in patients with atopic eczema. The condition is characterized by high fever for from 4 to 7 days, by leucopenia and by the presence of umbilicated vesicles, some of which may become pustular, involving only the eczematous portions of the skin. The disease is self-limited, and the prognosis is good.

A filterable[1] virus was isolated from the skin lesions of a 15-month-old child showing a clinical picture typical of Kaposi's varicelliform eruption. Fluid removed from cutaneous vesicles was inoculated on the

[1] Berkefeld fine, V–13.