CLARASE INACTIVATION OF PENICILLIN

DR. C. A. LAWRENCE reported in SCIENCE (98, 413, 1943) that penicillin could be inactivated by clarase (standardized) as a preliminary step toward the sterility test for penicillin. The writer had been unsuccessfully attempting to do the same thing with a sample of clarase (standardized), when the above-mentioned report was published. Two samples of clarase (regular) and one of clarase (standardized) were secured and, together with some regular clarase already in the laboratory, comparative tests were made.

The 4 per cent. solution of clarase was made in a buffer of pH 5.2 and passed through Seitz filters to sterilize it. This was then tubed aseptically and stored in the refrigerator. The sodium salt of penicillin was dissolved in sterile distilled water to give approximately 20,000 units per milliliter. Two milliliters of this penicillin solution were then mixed with 2 ml of the 4 per cent. clarase solution being tested and placed in a waterbath at 40° C.

This experiment was repeated three times with different lots of penicillin, and the same results were obtained each time. Out of five samples tested, only one (regular clarase No. 1351) completely inactivated 9,000 units of penicillin in six hours but not in four. A sample of the same batch (No. 1351) subsequently received reduced the titer from 10,000 units to approximately 200 units in six hours. The other samples (regular clarase No. 1466, standardized clarase No. 1339, standardized clarase No. 1104 and an unnumbered batch of regular clarase) were essentially inactive, giving no appreciable inactivation of penicillin in 24 hours. All samples of clarase were secured from Takamine Laboratory, Inc., Clifton, N. J.

If clarase is to be used for the inactivation of penicillin prior to the sterility test, each lot must be tested and certified for this particular activity.

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CENTRALIZATION OF PERSONAL RECORDS

ALTHOUGH the nation periodically surveys its industry, commerce and agriculture, and once each decade tabulates its population, it is only in time of war that an exhaustive inquiry is made into its human resources. Even in time of war, the group examined constitutes only a small percentage of the total population.

Many physicians, psychologists, biometricians and physiologists long have felt the need for the centralization of medical and other personal records. Such records would be held in strictest confidence, and would be available only to licensed physicians, authorized public agencies and those qualified in scientific research.

Special forms might be designed for the recording of data. The analysis of such forms would bring under scientific scrutiny the life careers of 135,000,000 human guinea pigs. The data collected would include the complete medical history of the individual from birth to date. His medical record would follow him wherever he went, and would be made available to the physician of his choice. Every physician would be asked or required to file periodic reports on his patients. The assembled records might also include fingerprints, intelligence ratings, family history, education, work history, special skills, hobbies and other pertinent information. Such a project would provide us with invaluable material concerning the nation's most precious resource, namely, human beings.

Material gathered in the course of the war well might serve as a nucleus for such a collection of data. The records would be retained permanently, perhaps for generations, and would be assembled at strategic locations throughout the country. Such records should exist for the entire population.

At the present time, although a tremendous fund of health and other personal data exists, it is not being fully utilized. Much of it is being destroyed by schools, physicians and by the individual himself. The material which survives is often so scattered and so deeply buried that it is of no practical value. Some of the benefits which would derive from the adoption of the proposed plan include:

(1) It would improve medical treatment and facilitate diagnosis. Individuals often change their physicians, either because of choice or necessity, and hence there is no continuity in the medical history. It is well known that patients frequently are unable to provide their doctors with accurate case histories. This is an important handicap in medical practice.

Knowledge of the course of a disease has much to do with its proper management. Complete records would eliminate unnecessary duplication and would bring to light conditions which the busy physician could not determine without a great deal of work. Such records would definitely improve the quality of medical practice and would save time and money.

(2) It would make available to public health agencies a source of important leads with regard to public health work. It would improve our control of communicable disease. It would give us the most accurate picture of the public health and of public health needs that we ever have had.

(3) It would contribute to the national security and to our military effort, by showing us the availability of our human resources for uniformed or indus-

trial duty or for other activities in the national interest. It would do for the nation what the National Roster of Scientific and Specialized Personnel has done for some of the professions. It would enable us to plan our educational program more intelligently, and to correct remediable health defects in those who must be the backbone of any military effort we may be called upon to make.

(4) It would provide an almost limitless source for research in genetics, longevity, disease, human behavior and a hundred other fields. From the systematic study of such data would come leads and discoveries of tremendous value to science, and, ultimately, of tremendous benefit to the individual. Such a reservoir of data would have a thousand and one uses, many of which we to-day can not even foresee.

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EDITORIAL CHANGES IN SCIENTIFIC PAPERS

DR. WILLIAM C. BOYD (SCIENCE, August 27, 1943) complains of editorial changes whereby a substantive modifying a noun (in his manuscript) becomes an adjective modifying a noun (on the printed page).

Probably the most important factor in the impairment of English speech to-day is the fallacy that parts of speech may be connected without the use of connectives. Without knowing what journals are under criticism, it may be safely conjectured that the editors have, as a safeguard, wisely established a style which will permit this malady (a noun modifying a noun) to be treated both in its early and in its acute stages, where (with apologies to Gert. Stein) a noun modifies a noun modifies a noun modifies a noun. More rigorous and more intelligent editing would have prevented the following expressions, all of which recently appeared in print: "rudder control mechanism sequence," "material control shortage group," and "instrument approach procedure summary."

The first cited instance of Dr. Boyd's displeasure is the editorial change of "horse serum" (which is ambiguous) to "equine serum" (which is unmistakably clear). "Horse serum" may mean serum *for* the horse, serum *from* the horse, or serum *of* the horse, just as the widely used expression "Consumer research" may mean research *by* the consumer, research *concerning* the consumer, or research *for* the consumer. The argument that the man who elects to read any material will understand which one is meant is not a valid one. How do we know? Surely one of the most important functions of language is to convey information to the uninformed, and the language of science should be written not only so that it can be understood, but so that it *can not be misunderstood.* In attaining this end, proper editing will continue to be of great value.

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SCIENTIFIC BOOKS

RADIO AND ELECTRONICS

Experimental Electronics. By RALPH H. MILLER, R. L. GARMAN and M. E. DROZ. New York: Prentice-Hall, 1942.

Principles of Radio. By KEITH HENNEY. 4th Edition. New York: John Wiley and Sons, 1942.

Principles of Electronics. By ROYCE G. KLOEFFLER. New York: John Wiley and Sons, 1942.

Elements of Radio. By ABRAHAM MARCUS and WILLIAM MARCUS under the editorship of RALPH E. HORTON. New York: Prentice-Hall, 1943. $4.00.

Fundamentals of Electricity. By LESTER R. WILLIARD. New York: Ginn and Company, 1943.

RADIO and electronics have permeated every branch of our war effort. The production of electronic equipment for the armed forces alone is several times the normal peace-time production. The dissemination of war information makes the maintenance of home radio receivers and the broadcast stations an industry essential to the prosecution of the war. In addition, war industries, from gasoline refineries to ordnance manufacturers, have found this new tool, electronics, so valuable in reducing man hours that the development and manufacture of such apparatus is being carried on under the highest priorities. The vacuum tube is no longer only the bulb in the parlor radio. It has gone to war. We find it by the guns and in the factory.

People from many walks of life are finding that they must learn of the electron tube and its applications. The chemical engineer finds it controlling his processes. The power plant engineer finds it increasing the efficiency of his boilers. The foreman of the manufacturing plant finds it used as a tool on his production line. The airplane manufacturer finds it molding his fuselage and wing parts. The shipbuilder finds it in his welding operations. The ordnance officer finds it throughout his equipment. The naval officer and the air force officer would be lost if it failed.

These applications of the electron tube have shown the need for personnel trained in the field of radio and electronics. The present scarcity of trained personnel is requiring the employment of many persons who are unfamiliar with even the basic principles