

LABORATORY TECHNIQUE

By C.-E. A. WINSLOW.

It is of course the aim in Biology, as in other departments of the Institute, to teach principles rather than to attempt to discuss all the details of current practise. A certain amount of technical facility must, however, be imparted in order that graduates may be able to begin their practical work with intelligence. The attempt is made, however, throughout to keep the work along broad and fundamental lines so that its application may be as wide as possible.

The first course of this type, given to entering biologists and to sophomore chemists, is Industrial Microscopy. The aim of the work is two fold, first to acquaint the student quite fully with the practical workings of the microscope and second, to indicate in a general way the various fields in which the application of the microscope is likely to prove useful. Among the subjects first examined are the commoner starches, certain of the more frequently adulterated food products, the chief paper and textile fibres; and the latter part of the course introduce, the student to some special uses of the microscope in biology and geology.

In the third and fourth year two courses of two hours each are offered to biologists, chemists and engineers in the Microscopical Examination of Water and Sewage and in the Bacteriology of Water and Sewage. The first course deals with the microscopical plants and animals which multiply in reservoirs and produce unpleasant tastes and odors, the second course with the standard procedures in use for the sanitary examination of water supplies. In the development of current practice in both these fields Institute workers have played a predominant part and somewhat unusual opportunities are afforded for attaining technical skill and intelligence in the interpretation of results.

Finally the diagnostic methods of state and municipal laboratories are taken up in a three-hour course in the fourth year of Course VII. This work is under the general direction of Dr. F. H. Slack, director of the laboratory of the Boston Board of Health. The standard diagnostic procedures for diphtheria, tuberculosis, typhoid fever, malaria and rabies are studied in some detail, and although no one can be expert in this particular work without a long period of practical experience, the student is well qualified to go into any laboratory and begin work under the most favorable conditions.

GRADUATE LETTERS

Mr. S. Henry Ayers.

Dear Professor Sedgwick:—

Since my graduation from the Institute in 1905 my professional work has been entirely along the lines of bacteriology were of the greatest value during the past four years has been dependant entirely upon courses of study which I took in the Biological Department of the Institute. I have of course found that the courses in bacteriology were of the greatest value to me since they form the backbone of my work. In my present position as Bacteriologist in the Dairy Division, U. S. Dept. Agriculture, I am constantly engaged in research work along lines identical with courses given me in the Biological Department. In research work it is essential that the investigator be a careful observer and aside from the practical value of my courses the general training, the development of the power of observation which I received at the Institute is of the greatest value to me. Above all I cannot express the value of my association with the instructing staff of the Biological Department whose personal interest in the students seems to me to be one of the most valuable features of the Department.

Very sincerely yours,

S. HENRY AYERS.

Dairy Division U. S. Dept. Agric.

March 9, 1910.

Dear Prof. Sedgwick:—

Henry Ward Beecher was once asked, by an interested listener, how long it had taken him to prepare that day's

sermon. "A life time" was the unexpected reply. And I feel somewhat of the same mind when asked to express in short letter the value of our Biological course to me in my chosen profession,—a course, to my mind, more valuable, if you will pardon a personal reference, by your keen insight into the needs of and your personal influence upon each pupil.

I entered upon Course VII. with the plan of getting a broader foundation, especially of co-related subjects, for medical study.

Owing to the smaller attendance upon the Biological Course, the pupil derived immediate benefit from individual instruction and I shall never forget your quick discovery of my own weaknesses and I was soon made conscious of the fact that I had never before known how to study.

Among the essential qualifications for a skilled physician are to be included intelligent observation, delicate manipulation, interpretation, precision, quick perception and decision all of which are more or less conscious developments in your technical fitting for graduate medical study.

As a result of this preparation, I was able to take advantage of much practical work at an earlier stage of my medical studies than could have otherwise been possible.

I would not hesitate to advise a similar course of preparation to any aspirant to medical learning, feeling confident that the extra hours of hard work more than pay for the advantages thus obtained.

I am exceedingly glad to have had this opportunity of expressing myself on what I have learned to consider essential in medical training.

Always most cordially your grateful pupil, J. ARNOLD ROCKWELL, '96.

March 12, 1910.

APPLIED BIOLOGY.

It is a pleasure to acknowledge the admirable training my work in Course VII gave me for the position I now hold, with the Superior Water, Light & Power Company.

The courses in applied biology, such as the Bacteriology of Water and Sewage, Industrial Biology, Microscopy of Water, etc., as well as the work in Sanitary Chemistry, have all been of vital importance in my routine work. The Senior work in Sanitary Science, and particularly Professor Sedgwick's lectures to Course VII. on Municipal Sanitation, gave me an expert knowledge of health work which has been of great help to me in establishing my position as a water expert in this community.

I feel that every course in the regular work, excepting only that in comparative anatomy, has been of direct benefit in my professional work.

As I look back over the years spent at "Tech," it seems to me that Course VII is a course peculiarly adapted to fit one to take positions of responsibility and trust in various municipal lines and especially water works management.

Very respectfully,

WILLIAM C. LOUNSBURY,
(Course VII, '04).

Dear Professor Sedgwick:—

In my work as classifier of books in the John Crerar Library of Chicago and in the Library of Congress in Washington, I have been able to utilize practically everything I have ever learned and as I have gone more deeply into the biological sciences than any other they have been especially useful to me.

In the Library of Congress which is now nearing the completion of the work of reclassifying its enormous collection of more than 1,700,000 volumes, I began as classifier of Technology but I have since then gradually assumed charge of classification in Geography, Anthropology, Science, Medicine, Military and Naval Sciences and Fine Arts.

In biology, botany, zoology, bacteriology, anatomy, physiology, in sanitary science, and in medicine the technical knowledge was acquired in the course in Biology at the Institute has been extremely valuable to me as an educational influence affecting my whole life and I consider this course, both for its technical training and as a liberalizing education, as worthy of the highest respect and admiration.

Very sincerely yours,

CLARENCE W. PERLEY.

March 7, 1910.

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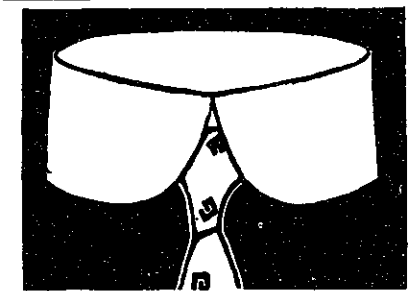
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