

"How Not to Be Sick," by Dr. John N. Hurty, secretary of the Indiana Board of Health. "Bovine Tuberculosis and Its Relation to Public Health," by Dr. Mazyck Porcher Ravennel, professor of bacteriology at the University of Wisconsin; "The Influence of Disease on Civilization," by Dr. Victor C. Vaughan, dean of the department of medicine, University of Michigan; "Ventilation of Schoolrooms and Bedrooms," by Dr. William A. Evans, of the *Chicago Tribune*; "Milk," also by Dr. William A. Evans.

ABOUT forty students of the University of Illinois, pursuing courses in Railway Engineering or Railway Administration, have joined in forming the Railway Club of the University of Illinois. The object of the club is to provide for informal meetings for a discussion of railway problems and to promote good fellowship among its members. The officers for the present semester are: H. E. Marquette, president; A. C. Van Zandt, vice-president; W. C. Sadler, secretary; A. S. Nevins, treasurer; E. L. Tinzmann, sergeant-at-arms.

A NEW map of the state of Illinois on a scale of approximately eight miles to the inch is ready for distribution by the State Geological Survey. It is prepared in three colors so as to represent drainage features in blue; railroads, land lines, towns, etc., in black, and county boundaries and figures showing altitudes above sea level for various towns in red. This map eliminates the errors of early land surveys, so that places are now shown with correct latitude and longitude. Railroad alignments are all highly accurate.

UNIVERSITY AND EDUCATIONAL NEWS

THE Massachusetts Institute of Technology has received from a donor whose name for the present is anonymous, a gift of two and a half million dollars for the erection of the buildings on its new site.

ACCORDING to the *Boston Transcript*, Harvard University has received subscriptions amounting to \$1,200,000 for the erection of freshmen dormitories.

MT. HOLYOKE College has received an anonymous gift of \$50,000 for the endowment fund which now amounts to about \$370,000.

THE University of Toronto has received from Mrs. William Freeland the gift of an endowment for a fellowship in anatomy in memory of her father, the late Dr. James H. Richardson, who for many years was professor of anatomy in the Toronto School of Medicine and the University of Toronto. The fellowship is to be known as the James H. Richardson research fellowship in anatomy, and is of the value of \$500. It is open to graduates of recognized universities and medical colleges, and to students of the University of Toronto who have completed the third year of the medical course in that institution. The holder of the fellowship will be required to devote his entire time during the tenure of the fellowship to investigation in anatomy under the direction of the professor of anatomy in the University of Toronto.

THE New York School of Applied Design for Women has received a bequest of ten thousand dollars by the will of Miss Cora F. Barnes. Also a Scholarship in Perpetuity, of one thousand dollars from Miss Catherine A. Bliss.

It should have been stated in *SCIENCE* last week that Dr. Horace David Arnold had been appointed dean of the Graduate School of Medicine of Harvard University, not of the Harvard Medical School. The graduate school of medicine is a new department of the university, being a part of the faculty of medicine. It should also have been stated that Dr. Edward Hickling Bradford would retire from the chair of orthopedic surgery and become professor emeritus.

THE Bryn Mawr European fellowship awarded to the student receiving the highest grade has been given this year to Miss Nora Cam, who has specialized in mathematics and physics. The president's European fellowship has been awarded to Miss Bernette Lois Gibbons, a student of chemistry.

CHAS. H. TAYLOR, professor of mineralogy at the University of Oklahoma, has been pro-

moted to the head of the department of geology. At the same meeting Mr. Irving Perrine, instructor in geology at Cornell University, was appointed associate professor of geology.

DR. PERCY E. RAYMOND, formerly of the Carnegie Museum, Pittsburgh, and more recently paleontologist to the Geological Survey of Canada, has been appointed assistant professor of paleontology at Harvard University, and curator of invertebrate paleontology in the Museum of Comparative Zoology.

DISCUSSION AND CORRESPONDENCE

NUMBER OF STUDENTS PER TEACHER

TO THE EDITOR OF SCIENCE: In the January 26 number of SCIENCE is a note on the "Number of Students per Teacher," by Professor A. S. Hathaway, in which he says:

It appears to me that the only correct way to determine the average number of students handled per teacher in any school is to divide the number of student hours per week by the number of teacher hours per week.

This formula might simplify the *mere* mathematics of the situation, but it would most certainly fail to give just the information desired—the strength of the teaching force in an institution, or, in the words of Professor Hathaway, "the average number of students handled per teacher." It is then far from being *a* correct way, to say nothing of *the only* correct way.

The following illustration will show how the method suggested would miss the very purpose of our calculations. Suppose that a college of 300 students, averaging 15 hours recitation per week each, has 5 instructors, each teaching 20 hours per week; then the result would be, according to the formula suggested,

$$300 \times 15 \div 5 \times 20 = 45 \text{ "students handled per teacher."}$$

Now, another college with the same number of students, each reciting also on the average 15 hours per week, but with 10 teachers, each meeting classes 10 hours per week, would

show the same result; or a college of 225 students, averaging 20 recitations per week, with 10 teachers, each having 10 classes per week, would show 45 "students handled per teacher." Certainly the teaching forces of these schools would not be equally strong.

It is not particularly the average number of students per class, or recitation, that we are after. Even if this were our object we should find the matter more complicated than Professor Hathaway has supposed. Some "courses" require a proportionately larger number of recitations per hour's credit than others. And how should we treat laboratory work, which can not with fairness be classed with recitations? Some laboratory courses require very little outside work, but more work in the laboratory, while others require a considerable amount. What complicates the matter still more, is the fact that in many cases student assistants direct such courses in large part while in others professors attend to the work themselves. These are only a few of the complications one actually finds.

The class work does not afford the only opportunity for the teacher to assist and stimulate the student; and any scheme based upon class work alone would not only do an injustice to some of the very best of our educational institutions, but would also tend to emphasize unduly a practise that is doubtless already carried too far.

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ARE TEACHERS ENTITLED TO COMPLIMENTARY DESK COPIES OF TECHNICAL BOOKS?

HERE is the teacher's point of view:

The texts which I am using are of no personal benefit to me. I am supposed to use the latest edition, and to change the text once in a while. I do not see how I can well afford to buy them. The publishers get big profits out of the students and can well afford to give a copy to the teacher, while, on the other hand, the teachers' salaries are meager. And as to new reference books and practical engineering books, I can not always order them