whisperings and program-rustlings of those about me become sharply evident and very distracting.

What the true explanation for all this may be I can not presume to state, but it has seemed reasonable to me to believe that heavy vibrations occurring in force and in more or less regular succession or practical continuity tend to jar the stiffened transmission mechanism into a vibration or state of sensitivity of its own, when it is able to pick up and conduct those lesser vibrations of a higher pitch which alone would be quite incapable of activating it. Conversely, where the auditory receptor mechanism itself is involved in injury, such phenomena could hardly be expected to occur.

Doubtless pretty much all of what I record is commonplace enough in the appropriate literature and certainly in the experience of those similarly afflicted, but the flat statement by one of your correspondents that reports of this type are fallacious and the uncertainty evident in some of the replies thereto induce me to offer these few notes of a directly empirical nature with an apology for the unavoidable personal element.

B.

ON STUDENT MISINFORMATION

IN connection with the examples of student misinformation in SCIENCE for December 19, 1924, some experiences of my own may be of interest. The perpetrators in each case were college graduates.

In discussing an old case in which the report said, "Plea *son assault demesne,*" I asked a student, "What does that plea mean?" He looked at it and replied, "I did not look up that Latin phrase." When I asked, "Are you sure it is Latin," he answered, after another look, "I did not look up that Anglo-Saxon phrase."

A type of case often referred to considers how far one who stands in no relation to another may be bound legally in an emergency to act as a good Samaritan. After these cases had been discussed repeatedly, a student came to me with his note book and explained that in reviewing he found many references to the "good Sarmatian cases"—would I be good enough to tell him what these "good Sarmatian cases" were?

Another much discussed case involved an agreement to build a silo. As to this a student wrote: "I do not know what a silo is—but I will assume it is some kind of barn."

So long as "making acquaintances," and "contacts," and extra-curriculum "activities" are the realities of student life, and the work of lecture room and laboratory is a mere ritual—in the words of Terence Mulvaney "an impartinint and shuparfluous necissity"—we must continue to expect these things.

ROSCOE POUND

HARVARD UNIVERSITY

IN regard to the discussion in your recent issues on student "howlers," is it not well to remember that a course in science or any other subject is a game between the students and the instructor? It is an unfair game also, for the instructor makes the rules, plays on one side and then acts as referee, umpire and score-keeper. Naturally, students feel somewhat at a disadvantage, and we can hardly expect them to take a vital interest, nor should we expect that they will refrain from devious practices to beat a game rigged against them. These comments apply equally whether the lecture or laboratory system is used. To the student the excessive authority and arbitrary power of the teacher seems a bar to ordinary intercourse or common interest. If the teacher is interested in a subject, that subject is *ipso facto* abhorrent to the student. Successful teaching is a matter of personality by which the teacher overcomes with the force of his enthusiasm and mental energy the natural disadvantages of his position. Successful teachers tend to overemphasize the particular devices, stratagems and systems by which they have at various times stimulated real thought in reluctant minds. The unsuccessful also rely on some system or systems as if they were fetiches by which the spirit of scholarship might be invoked. Yet, if we will honestly review our recollections of our own teachers, we will realize that those who taught us most were those whose personalities were to us the most impressive. The great teachers need no system; the others should be eclectic, for they can make up for deficiencies in personality by the use of many devices and by an occasional change of pace.

KIRK BRYAN

U. S. GEOLOGICAL SURVEY,
WASHINGTON, D. C.

ANTHROPOLOGICAL STUDIES ON THE NATIVES OF THE YENISEI RIVER

PROFESSOR VASSILIJ IVANOVIČ ANUČIN, of the University of Kazan, Russia, writes as follows:

During my 1905–1909 expedition to the Yenisei Ostiaks I gathered immense scientific material, which so far I have not been able to publish or even fully prepare for publication, due to our financial conditions. The material is partly linguistic, partly ethnological. The people studied are disappearing. In 1907 they still numbered 900 individuals; in 1923 there remained less than 100. Moreover, I have recently learned that this remnant has now practically lost its special ethnic character. I am the only one who has thoroughly studied them and espe-

cially their language. I may not live very long, nor do I wish to do so; but I fear that unless these data can be properly elaborated and published there would be lost with me to science a good deal that could not be replaced. My monthly salary is 48 rubles. In order properly to work up my data I would need about 250 rubles (approximately $125) a month for one year. The result would be a book of about 500 pages on the Yenisei Ostiaks. For the illustrations I have more than 100 photographs and 10 drawings, besides 40 *aquarelles* made under my direction by a Russian artist. These *aquarelles* alone would be a valuable acquisition for any museum.

It is to be hoped that Professor Anučin will find the help of which he is in need.

A. HRDLIČKA

U. S. NATIONAL MUSEUM

SCIENTIFIC BOOKS

A Handbook of Solar Eclipses. By ISABEL M. LEWIS. XI + 118 pp. Duffield & Co., New York. Price, $1.25.

THIS little book was undoubtedly one of the best sellers in New England and New York just before and after the eclipse of January 24.

It is intended to enable the layman to make the most of the few precious seconds of a total eclipse of the sun. It explains in non-technical language the cause of eclipses and describes clearly what to look for during an eclipse. There are chapters on the shadow bands, Baily's beads, the chromosphere, prominences and corona and general instructions for viewing a total eclipse. Herein are answers to most of the questions with which astronomers are bombarded before every eclipse.

There are also chapters of a somewhat more technical nature on the prediction of eclipses, the flash spectrum, the astronomer's eclipse program and the scientific importance of eclipses. A bit of history dealing with the noted eclipses of the past and a chapter on the total solar eclipses of the near future conclude the book. Special attention is given to the eclipses of January 24, 1925, January 14, 1926, and June 29, 1927. The path of the 1927 eclipse crosses northern England. It will be the first total eclipse of the sun to occur in the British Isles since 1724.

The book is well illustrated by reproductions of photographs of the eclipses of 1918, 1922 and 1923.

Mrs. Lewis has rendered a real service by putting this rather difficult subject into clear and simple language. A second edition with illustrations of the 1925 eclipse will undoubtedly be as popular in England in 1927 as the first edition has been here this year.

FREDERICK SLOCUM

WESLEYAN UNIVERSITY

LABORATORY APPARATUS AND METHODS

A METHOD OF DEMONSTRATING MESONEPHRIC TUBULES

IT is often of considerable advantage to the teacher of embryology or histology to be able to show the contour and extent of the structures being studied in sections. The method described here gives an excellent outline of mesonephric tubules and the preparation may be made in a very short time. A somewhat similar technique was employed in the study of the elimination of iron by the mesonephros of Necturus.[1] The essential feature of the method is the precipitation of the iron as Prussian blue in the lumina of the kidney tubules.

Chase[2] has shown that in the pelvic (secretory) portion of the mesonephros, there are two sets of tubules (primary and secondary) which have direct connections with the body cavity by way of outer segments (peritoneal canals) and nephrostomes. Substances placed in the body cavity accordingly find their way into the primary and secondary tubules by this route and are eventually eliminated, in part at least, through the Wolffian duct.

A balanced mixture of sodium ferrocyanide and ammonium ferric citrate, made by adding 10 parts by volume of a 3 per cent. solution of the former to 7 parts by volume of a 4 per cent. solution of the latter[3] was kept as a stock solution. A quantity of this was diluted 10 times and a sufficient amount injected into the body cavity to produce a mild distention. The animals were left from two to six hours and then killed by immersion in an aqueous solution of chloretone. Sufficient time should elapse before killing to allow the iron salts to at least reach the Wolffian duct. The time needed for this is variable. The mesonephroi are dissected free and fixed in a solution sufficiently acid to produce the Prussian blue reaction. Acid-formalin or Gilson's fluid is satisfactory. The kidneys may be kept in alcohol and studied as opaque objects or may be cleared. If cleared, benzol or toluol is preferred, as they remove some of the pigment present. Later the tissue may be transferred to some less volatile fluid as oil of wintergreen.

On the ventral surface of the preparation, the neck, distal to its junction with the peritoneal canal, the proximal convoluted portion, the narrow straight part and the distal convoluted portion of a tubule can be readily followed by means of the dense blue deposit in the lumen. On the dorsal surface, the short junctional portions, collecting tubules and the Wolffian

[1] Dawson, A. B., 1925, *Am. Jour. Physiol.*, in press.

[2] Chase, S. W., 1923, *Jour. Morphol.*, Vol. 37, p. 457.

[3] Collip, J. B., 1920, Univ. Toronto Studies, Physiol. Series, No. 35.