

larly disastrous if he wanders away from the microphone.

Number 2, the Slide Crowder, wishes to show just as much of his data as possible and thus demonstrate his industry. He prepares many slides from typewritten sheets, because this is the easiest method. He ignores the fact that the typewriter has the worst possible type for display at a distance. Has any one ever seen such type used on advertising bill-boards? If he would only have his slides drawn with india ink the very labor involved would cause him to limit his material to the essentials, and these would be legible. It is a simple matter to calculate for a ten-minute paper just how many seconds each slide will be exposed on the screen and how much can be read and understood while thus exposed. Every nonessential word or figure distracts the eye from the small fraction that is essential. A good slide needs no pointer or verbal explanation.

The ideal method of competing with a slide is to employ one of the modern flashlights with a bright arrow that dances all over the screen and ceiling. There is nothing in black and white that has a chance of holding the eye when a bright arrow swoops and darts like a hornet.

Number 3, the Time Ignorer, who exceeds the limit set by the program is purely selfish or else overimpressed with the idea that his paper is much more important than the program committee had imagined. He may have planned deliberately to go overtime but more probably did not take the trouble to rehearse his paper with a watch. If he did use a watch he forgot that it always takes several minutes longer to deliver a paper from a platform than to read it in an empty room.

Number 4, the Sloppy Arranger, selects the method of presentation best calculated to confuse the audience. He may have in the back of his head the idea that he can lead up to a climax and hold the audience in breathless suspense until in the very last sentence he can prove that the venous blood of the wimpus contains only 3 milligrams of gadgetyl chloride instead of 4 milligrams. Would it not be kinder to the audience if he followed newspaper technic and gave in a headline, early in the talk, some idea as to what and wherefore?

Number 5, the Lean Producer, is only relatively lean. If he has one fact to exhibit and does it modestly he has made a contribution. If he does not recognize his paucity of material he does more harm than good. The real audience enemy is the man whose paper consists of trivia, errata, omissia, et cetera; mostly et cetera.

Number 6, the Grasping Discussor, can spoil almost any meeting. If he has been invited to open the dis-

cussion he has probably prepared a nice little paper of his own with scant reference to the paper of the evening. There is another type of discussor who happens to have in his pocket some lantern slides that he would just like to show for two minutes.

In the face of all these enemies the audience itself can do but little. The chairman, however, can do a great deal. Perhaps instead of chairman he should have the title of "Sole Protector of the Audience." If he has established a reputation for keeping people within their time limits they will take the trouble to arrange their material and lantern slides and bring out their main points in a decent manner. The faults of poor delivery, poor slides and poor material are the responsibility of the head of the department. He should guard the reputation of his institution. Unfortunately, some heads of departments exhibit in their own deliveries many of the faults enumerated.

The time to start training is when a man is young. In one medical school this has been tried successfully with the fourth-year students taking their clerkship in the medical dispensary. Every Saturday morning a group of clinical clerks have gathered to hear four fifteen-minute papers delivered by members of their class. The students have been warned that the papers are limited strictly to fifteen minutes and that in rehearsal they must not take more than twelve minutes. They are advised to talk to the men in the back of the room, since these are the most difficult to keep interested. They are taught that time spent in listening to a dull lecture, poorly delivered, is not wasted if they study the faults of the speaker and consider the methods by which they may be avoided. In a few sessions they develop a technic of delivery that is much better than the average found at scientific meetings. This allows the speakers and the audience to forget the delivery and concentrate on the subject-matter.

The man who goes overtime, uses crowded slides and mumbles his words is seldom more than 50 per cent. audience enemy. If his paper comes in the middle of the session it does not affect the first half of the program, even though he talks far beyond his limit. If his slides are crowded, half of the material can be read by the front half of the room. The same front half can usually hear him, even though he mumbles his words. He would not dream of saying, "The public be damned." He just damns the rear half.

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ON A SYSTEM OF FILING REPRINTS

THE system of Professor McClung¹ for filing reprints seems to us rather interesting. We would like

¹ L. S. McClung, *SCIENCE*, 95: 122-123.

to suggest another one that is in use in the Division of Agronomy and Genetics at the University of Minnesota. This system originated with Professor H. K. Hayes. We found it extremely useful for our own work and for graduate students while teaching at the university during the fall quarter of 1941.

The system in use at Minnesota is very simple. Reprints are filed in reprint boxes that are large enough to take typed or mimeographed reports ($8\frac{1}{2} \times 11$). Each reprint is numbered (in consecutive order) and there is an index card for the subject-matter and also one for the author. These index cards are filed, one set for authors and another for subject-matter. As new reprints are received they are numbered and cross indexed on standard 3×5 library cards. Reprints are then filed in the boxes which are arranged on the shelves in numerical order. Since each box is full there is no trouble with reprints becoming doubled up as they do in partially filled boxes. There is never any problem of where to file reprints, and it is always easy to locate any reprint by subject or author.

We found this system much more practical than the system generally used where the reprints are filed alphabetically according to authors. Where graduate students are using the reprints it is important to have them well indexed both by subject and author.

Single unbound copies of several biological journals are also filed like reprints. Although there is a greater chance of losing some number of a journal the fact that the single issues are filed makes them available to a greater number of students at any one time. Any possible loss of single numbers is more than offset by the greater good derived by more students using the journals. Both reprints and single copies of the journals are signed out by students using them.

This way of handling reprints and journals seems to us very simple and practical. The important thing is that it works, and the reprints and journals are used extensively by the graduate students in the Division of Agronomy and Genetics.

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THE STATUS OF EXPERIMENTAL PSYCHOLOGY AT THE UNIVERSITY OF MISSOURI

In a recent report on "The Status of Experimental Psychology among the Laboratory Sciences,"¹ the University of Missouri was included in a list of institutions which require laboratory science for the A.B. degree in the college of Arts and Science, but which do not accept experimental psychology in fulfillment of this requirement. In 1937, when the data for this

report were obtained, this was true. In the academic year 1939-40, however, the Department of Psychology at the University of Missouri instituted a 5-semester-hour beginning course in general experimental psychology, which is now offered in addition to the usual 3-hour course in general psychology. Students may meet the biological science requirement for the A.B. degree in the College of Arts and Science by taking general botany, general experimental psychology or general zoology.

The catalogue describes the course in general experimental psychology as dealing with "the basic facts, principles, and methods of psychological science, with special reference to the human being," and as consisting of "lectures, classroom demonstrations, and laboratory experiments." There are three lectures and two 2-hour laboratory sessions each week. The course is taught from an experimental biological point of view with emphasis on experimental procedure and scientific attitude.

The course in general psychology, on the other hand, includes no laboratory work and emphasizes to a lesser degree the biological aspects of human behavior. It meets no specific requirements for graduation, but it may be substituted for general experimental psychology as satisfying the prerequisite for more advanced courses in the department.

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A NOTE ON "STOMATES"

MUCH as I sympathize with Dr. White's¹ protest against such unnecessary words as "stomates," it is only fair to point out that the word is not, as he seems to imply, etymologically badly formed. It is not comparable to "eggsses." The Greek word is *στοματ* (*stomat*); the final consonant was dropped in the nominative singular for euphony, but appears in other cases, such as the genitive singular (*stomatos*). The Anglicization "stomate" is correct. Nor is the word really unwieldy; "stomates" is just as easy to say as "stomas."

Many of the more ludicrous efforts of biologists to bestow names upon their mental progeny betray the results of unfamiliarity with languages. It behooves us all the more to invoke some philological accuracy in criticizing them.

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CEMENT AS A FIRE EXTINGUISHER

IN the January twenty-third issue of *SCIENCE* there is a short article on the use of pitch as the best incendiary extinguisher, by Dr. R. Sayres, director of the U. S. Bureau of Mines.

¹ J. E. Winter, *SCIENCE*, 95: 96-97, 1942.

¹ See *SCIENCE*, 95: 171, February 13, 1942.