6. The Kelvin double bridge (Wolff type) in calibrating a platinum resistance thermometer.

7. The MacLeod gauge, with double range, measuring the pressure produced by an oil and a mercury diffusion pump in the various stages of the discharge in an attached Geissler tube.

8. The triode amplifier. Its static characteristics and its amplifying factor were measured. Its application was discussed but not made.

The emphasis of the course has been upon the use and application of specific instruments and upon the principles governing measurements in general and not upon the physical theory involved in the experiments. It is debatable how far this distinction may be carried with profit, but our first experience seems to justify for such students this type of course. There is no doubt of the appeal which it has made to the men and of their conviction of its value in preparing them for their chosen fields. We feel that physicists owe it to their fellow-workers to make their instruments of precision more widely known and propose courses of this general nature as a step in that direction.

WINTHROP R. WRIGHT
SWARTHMORE COLLEGE

BIOLOGICAL RECORD CARDS

FOR a number of years there have been in use in the zoological laboratory of Harvard University small record cards of the standard library size (75 m.m. by 125 m.m.), similar to the first of the illustrations printed below. These were devised primarily for use in keeping permanent card records of the treatment of histological and embryological material, but are serviceable for recording any procedure or experiment with animals or plants in which a time record is important. The time-saving helpfulness of such cards has been recognized by persons in other laboratories and this has suggested the possibility that the cards might be useful in many laboratories if they were readily procurable.

The method of use is shown in the second of the accompanying illustrations. The serial numbers indicate successive steps in the treatment of the object. The *printed* numerals are the "units" only; the "tens" are to be *written* in front of each "0." By ignoring the last four lines, the steps in a series can be carried to any desired number, the second card beginning with step 21, the third with 41, etc.

In the column headed "Reagents," abbreviated names can be used and, if one desires, small rubber stamps may be procured for the more common reagents, as illustrated in parts of lines 3 and 16-19. Sometimes several methods may be indicated on a single stamp, all except the one employed being stricken out, as in 17, where the staining was in Ehrlich's haematoxylin.

The time record shows the instant at which the treatment begins, it being assumed that that treatment continues till the beginning of the next following one. The period during which any treatment lasts is *not* to be recorded; but can be determined at once by noting the difference in time between the beginning of the treatment and the beginning of the one next

	REAGENT	MO.	DA.	HR.	MIN.
1					
2					
3					
4					
5					
6					
7					
8					
9					
0					
1					
2					
3					
4					
5					
6					
7					
8					
9					
0					
1					
2					
3					
4					

E. L. M.

Fig. 1

5mm. cube. No. 27.

59.79: 14.36

Necturus maculatus Raf. Liver.

REAGENT 1921 MO.	DA.	HR.	MIN.
1 Zenker 9	20	9	15
2 H_2O, running	21	9	00
3 alch. 50 % iod.	22	8	15
4 " 70 % "	"	10	00
5 " 90 %	"	15	10
6 " 100 %	23	8	00
7 " " + xylol	"	9	50
8 xylol	"	10	30
9 " + paraf., soft 45°	"	11	15
10 paraf., soft 45°	"	11	45
1 " hard 52°	"	12	15
2 imbed, block	"	12	45
3 sectioned 8μ 10	3		
4 affixed, albumen	"		
5 xylol	4	8	05
6 alch. 90, 70, 35 %	"	8	10
7 haem. ~~Del.~~ Ehr. ~~Held.~~	"	8	25
8 ½ % eosin, alch. ~~80~~ 70 %	"	11	30
9 alch. 80 %	"	11	33
10 " 100 %	"	11	34
1 xylol	"	11	35
2 " - damar	"	12	00
3 Cover			
4			

E. L. M.

Fig. 2

following. It is important to avoid the use of A. M. and P. M., which may best be done by adding 12 to the afternoon hours, which thus become 13, 14, 15, etc., instead of 1 P. M., 2 P. M., etc.

The three blank spaces at the margins of the cards can be used to suit the needs of the individual. The suggestions offered by the accompanying sample imply filing the records as with bibliographic cards. The long margin carries the name of the animal[1] (or plant) and also that of the organ. If the Dewey decimal system, as expanded by the *Concilium Bibliographicum*, is used for the systematic arrangement of the cards, the space in the upper left-hand corner may receive the numerals, as in the sample, where "59.79" represents "tailed amphibia" and "14.36" stands for "anatomy of the liver." In the shorter margin "No. 27" indicates the number of the individual (or organ) treated in this manner and "5-m.m. cube" shows the size of the object so treated.

The printed cards are of heavy ledger paper and can be had by the hundred or thousand from the Harvard Cooperative Society, Inc., Harvard Square, Cambridge 38, Mass.

E. L. MARK

[1] For maculatus read maculosus.

AEROBIC

DR. KEEN'S rejoinder to my comments on his proposed spelling of the word aerobic (SCIENCE, May 11, p. 559) can hardly pass unnoticed. He states that I have misread his letter (SCIENCE, March 23, p. 360) and that he "urged the retention of the aer as a disyllable." Referring again to his first letter, I find that Dr. Keen used the diphthong four separate times in this connection and no reference whatever is made to a "disyllable." With regard to the spelling of dissylable to which Dr. Keen takes exception I find that Webster's New International Dictionary gives only the spelling with double s. If Dr. Keen will refer again to my letter he will fail to find the spelling "dipthong" to which he objects.

ARTHUR W. DOX

DETROIT, MICH.

QUOTATIONS

THE ZOOLOGICAL RECORD

THE decision of the Zoological Society's council to discontinue the publication of the *Zoological Record* on the grounds of expense suggests somewhat opposing thoughts. It is generally admitted, or even strongly urged, by most workers in every branch of science that some guide to the ever-increasing flood of literature is a necessity. If this was true in 1865, when the *Zoological Record* was started, it is no less true to-day. The need, in fact, must have increased in at least the same direct ratio as the number of publications. Yet in zoology, as in geology and other sciences, these guides, records and indexes have had a perpetual and severe struggle for life, in the course of which many have from time to time succumbed, been revived under another form and too often again collapsed.