the desiccated food and the mixture placed in a feeding ring. The portion that the fish failed to eat in a short time was removed.

Dr. Sidney Brown initiated the use of this food. In the absence of any controlled test I can only remark on the interest of this information.

J. I. SPIRA

CHICAGO, ILL.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

THE WORK OF THE PRESS

So far as the press is concerned, the meetings of the association are centered in the press room. The press representatives can find in the press room sufficient material available for their use so that there is no necessity for them to listen to the reading of any of the papers or addresses. Furthermore, a much better, more adequate and more accurate account of an address or paper can be prepared from the manuscript than from notes taken while it is being read. Therefore, unless a copy of a paper or address is in the press room, that paper or address in all probability will receive no notice in the press.

This year an unusually small proportion—scarcely more than one fifth—of the papers read were sent in advance to the Press Service. There were 1,540 papers (including exhibits, demonstrations, etc.) listed in the program, of which 325 (21 per cent.) by 303 different authors were received in advance.

If the 74 papers that were not received until after the meeting (partly because of having been mailed with insufficient postage) are added to the number sent in, and the 113 mathematical papers, which can not be handled successfully in the usual routine, be subtracted from the total number of papers listed, there were 1,427 papers presented, of which 399 (28 per cent.) were sent in.

The number of papers listed and received, arranged by groups, were as follows:

SECTION OR GROUP	PAPERS LISTED	PAPERS RECEIVED
Exhibits and Demonstrations	18	5
General Sessions and Committees		6
Joint Sessions	96	21
Mathematics (A)	113	0
Physics (B)	94	17
Chemistry (C)	7	3
Astronomy (D)	28	7
Geology and Geography (E)	16	12
Zoological Sciences (F)	436	60
Botanical Sciences (G)	227	82
Zoology and Botany (F and G)	100	19
Anthropology (H)	32	11
Psychology (I)	38	16
Social and Economic Sciences (K)	23	2
Historical and Philological Sciences (L)	15	6
Engineering (M)	21	5
Medical Sciences (N)	19	5
Agriculture (O)	195	23
Education (Q)	39	19
Science in general (X)	23	6
Totals	1,540	325

In addition to the typewritten manuscripts and abstracts listed above, many excellent printed abstracts were sent in. But for press use printed abstracts are by no means so good as typewritten abstracts. They convey the impression that the material has already been published, or may have received press notice; they can not be distributed with the others in the official blue covers, without which abstracts and manuscripts are regarded with more or less suspicion; and many of the press representatives, especially the representatives of the local papers, will not take the trouble to read them. If copies of the manuscripts of the printed abstracts were sent to the Press Service it would help greatly in securing adequate notice of the papers.

Abstracts are of much less value for press use than complete papers, because as a rule they do not provide sufficient background for a press story. Unless the press representative who reads the average abstract happens to be more or less familiar with the subject-matter the abstract is not of much interest to him. But abstracts are very useful in presenting briefly the main points of interest in a paper.

Unfortunately, only single copies of many of the papers and abstracts were received this year. Two copies of each are desired in order that up to the time of the meeting one may be retained in the press room at Washington and the other sent to the city in which the meeting is to be held. Press representatives in both cities therefore have an opportunity of studying the material in advance of the meeting. During the meeting both copies are in use in the press room.

It is, of course, impossible to notice in the press all the papers given during a meeting, or even any large proportion of them. After the meeting all the papers are gone over with great care, and news items prepared from them appear throughout the year under the date line of the city in which the work was done. Some of them are also used as material for feature articles.

Papers sent to the Press Service are for press use only. They are not returned after the meetings. Every effort is made to see that they are given due consideration by the press representatives. They are regarded as confidential, and no one other than the press representatives is allowed to see them.

The Press Service does not prepare abstracts or

transcripts of the papers sent in, but simply passes them on to the press writers for their inspection. These gentlemen do all the writing, and the selection of the material to be written up, as well as the method of presenting it, is left entirely in their hands. The Press Service regards them as competent experts in their line, just as the authors of the papers are in theirs.

The quality of the material received this year was excellent, so good, in fact, that this more than made up for the somewhat limited quantity. For some time there has been noticed each year an improvement over the year preceding in the form in which the manuscripts are prepared, and this year the improvement was especially noteworthy.

The Press Service is deeply appreciative of the cordial cooperation received from the secretaries of the sections and societies and the members of the association on the one hand, and the representatives of the press on the other. Any comments or suggestions made are not to be taken as implying any criticism or lack of appreciation. They are made with the object of bringing us ever nearer that elusive goal, perfection.

AUSTIN H. CLARK,
Director

SCIENTIFIC APPARATUS AND LABORATORY METHODS

PREPARING AND STENCILING TOPO-GEOLOGIC MODELS

FOR laboratory study in college courses in geology it is desirable to have at least one model for four students. In large classes this means a large expenditure for equipment and consequently the least possible cost for models. Economy may be effected by quantity production at the place of demand, especially if the institution has a museum staff especially trained to do the work. Geologic models equal in area to the size of quadrangle maps published by the United States Geological Survey are commonly useful and may be prepared in the following manner at minimum cost.

Beginning with the lowest, each contour on the map selected is traced onto a separate cardboard which is of suitable thickness to give the desired result of relief exaggeration. The pantograph may be used to vary the size of the model. The areas enclosed by contours are cut out with scissors, a jig saw or an appliqué machine. The pieces representing successively higher levels are nailed one on top of the other until the relief is shown in a series of irregular steps. Accurate vertical registration may be obtained by having each original cardboard squared up with the edges of the map; this may be used as a guide if the cut contour area is held in place on the card until it has been nailed onto the growing model. The waste may then be pulled away. Registration may also be insured by setting up dowels on the base to which the contour cards are nailed. On the map circles corresponding to the positions of the dowels allow one to trace their position and cut them out on each contour card, which is slipped onto the dowels and nailed in position.

When the construction of the topography is completed, plasteline is applied to smooth off the step-like structures caused by the cardboard. A frame to form a well is fitted around the model. Petrolatum is applied to the surface of the model and inside the frame. A mixture of plaster of Paris and water is poured into the frame and a soft brush is plunged into it and drawn back and forth on the surface of the model before the plaster sets; this releases air bubbles and eliminates patching of the negative or model. Jarring the model is also effective.

After the mold has become thoroughly dry, which sometimes takes several days, it must be given two or three coats of thin shellac. The mold may then be utilized to make as many casts as are desired in plaster, wax or papier-maché. Plaster casts are the most economical and may be reinforced with quarter-inch wire mesh, which is sunk into the plaster before it sets. The mold must be greased each time a cast is made. When dry the casts are shellacked.

In preparation for the stencil, which facilitates the painting of the geological pattern, an extra mold and cast are made, being careful to have the sides of the mold vertical to the edges of the map. Vertical registration of the sides will be automatically accomplished if a wooden frame is fitted to the original model and used for all casting.

The geological pattern is drawn on tracing paper, which is laid over the map. The tracing paper is then fastened to the bottom of the mold and with a sharp knife blade the pattern is cut through and scratched onto the smooth surface of the bottom of the mold. The pattern is then gone over with a lead pencil to make it distinct. During this and the following process the mold rests on the cast. All the casting must be done on a smooth level surface such as slate, in order to insure accurate vertical registration of the geological pattern when it is cut through the mold.

The mold and cast are then placed on the cutting table of a jig saw and the pattern is cut into pieces corresponding to a puzzle. The pieces of the cast are thrown away and a new cast is made to act as a support for the mold pieces when they are not being