in the original medium for a longer period and then transfer it, a very definite series of repetitive events may be observed. The cells when first transferred to a new medium are small in size and exhibit certain quantitative physiological characteristics. Then for a certain period the cells become larger and physiologically far more active. The size may increase tenfold and the activity per cell fifty-fold. Later, both size and activity decrease again to their original figures. Under certain conditions, bizarre and coccoid and perhaps very minute or "filterable" forms may occur. On transfer to a fresh medium, the "cycle" repeats itself with perfect precision.

It must be freely granted that such a cycle is related to the effect of environment and not to any inevitable inherent tendency of a single cell; but I suspect that the same thing is true of all life cycles throughout the living world. The zoologist can cultivate protozoa, the botanist can cultivate molds, for an indefinite period by sufficiently rapid transfer to fresh substrates, without the appearance of cysts or spores or any other departure from the more usual morphological picture presented by the species. All that appears in such a case, if the medium be favorable, is the ordinary "life cycle" of binary fission. The phenomenon of endomixis does not present any real exception, since it does not alter the form or physiological properties of cells in any cyclical way. In the multicellular organism life cycles are apparently inherent simply because the organisms *are* multicellular and because the multicellular life produces a change in the environment of the individual cell more or less comparable to that produced in an old culture of bacteria. The germ cells exhibit no life cycles from generation to generation. It is true that in a metazoon there is a specialization of cell function associated with division and differentiation, but this is clearly degenerative rather than cyclical, since it is normally irreversible. Even specialized somatic cells when cultivated by Carrel *in vitro* show no life cycles after many years of observation.

May we not assume, then, that with all living cells, the "life cycle" so far as the individual cell is concerned—is a cycle of simple binary fission. Other phenomena involving change in cell morphology and physiology of a cyclical nature are responses to changing environmental conditions and not the result of any inherent time mechanism. If a unicellular organism shows a definite series of morphological and physiological alterations in response to certain changes in environment which are likely to occur with reasonable frequency in its natural life we may call it a "life cycle" if we wish or we may call it something else. In any case, this is the only kind of life cycle (other than binary fission) which can occur in unicellular and relatively simple multicellular forms. In this sense, the bacteria have life cycles. When we find a more complex and more regular life cycle in the higher plants and animals (relatively independent of external environment), it is because the interrelationships of the complex organism produce a cyclical change in the internal environment which is comparable with the change which takes place in a bacterial culture and which affects the individual body cell very much as the cultural environment affects the unicellular organism.

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THE PRESS SERVICE AT THE PITTSBURGH MEETING

THE baffling problem of handling the paper winning the $1,000 prize appears at last to have been successfully solved. At Pittsburgh the announcement of the prize-winning paper was made at a conference of press representatives called for 9 A. M. at which a carefully prepared, clear and thoroughly intelligible résumé of the paper, and a biographical sketch of the author, were handed each one present, and arrangements were made for answering any questions that might be asked. The complete paper was also available. The release was for morning papers on the following day. Ample time was thus afforded the press representatives for studying the paper and for securing interviews on the subject-matter.

The proportion of the total number of papers sent in advance to the Press Service was slightly less than at the preceding Boston meeting. There were 1,806 papers (including demonstrations, etc.) listed in the program, of which 396 (20.2 per cent.) were received in advance.

If the 66 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 109 mathematical papers, which can not be handled successfully in the usual routine, are subtracted, there were 1,697 papers presented, of which 462 (23.5 per cent.) were received.

The number of papers listed and received, arranged by groups, was as shown in Table I.

This year each paper as soon as it was received was carded by author. By the use of this card catalogue the press representatives were able to find out at once whether or not a copy of any given paper was available, and all the essential information regarding the papers at hand. This card index proved to be exceedingly useful, and constant reference was made to it throughout the meeting.

For press purposes it is essential that information regarding the proceedings day by day shall be avail-

TABLE I

Section or Group	Papers	
	Listed	Received
Exhibits and Demonstrations	87	1
General Sessions and Committees	25	10
Joint Sessions	.....	14
Mathematics (A)	109	0
Physics (B)	149	37
Chemistry (C)	20	3
Astronomy (D)	21	7
Geology and Geography (E)	32	24
Zoological Sciences (F)	466	63
Botanical Sciences (G)	292	154
Zoology and Botany (F and G)	118	18
Anthropology (H)	55	21
Psychology (I)	42	23
Social and Economic Sciences (K)	40	12
Historical and Philological Sciences (L)	6	1
Engineering (M)	3	1
Medical Sciences (N)	48	26
Agriculture (O)	246	29
Education (Q)	33	16
Science in general (X)	14	2
Totals	1,806	462[1]

[1] Compare with table in SCIENCE, 79: 141, 1934.

able at a glance. Beginning at the St. Louis meeting the pages from two programs will be cut and pasted together in such a way as to show the proceedings of the entire meeting chronologically, with the available papers checked, and these strips will be placed on a bulletin board.

During the meeting two typists were present in the press room for the purpose of making copies, in duplicate, of those papers for which there was a special demand. This plan has been adopted at previous meetings and has worked very well. The ideal procedure, of course, would be to have all the material mimeographed, or at least to have at hand mimeographed copies of from 50 to 100 of the papers most likely to be of interest to the press. But the expense involved is prohibitive.

At the Pittsburgh meeting there were in attendance no less than sixteen press representatives from other cities, ten of whom were members of the National Association of Science Writers, and ten from the Pittsburgh papers and local offices of press associations.

Such marked attention on the part of the press places upon the association a grave responsibility. The meetings of the association form the chief medium through which the general public learns of the advance of science as a whole. We must make every endeavor for our own good to increase largely the proportion of papers made available to the press, and to see to it that all vice-presidential addresses and general sessions papers are submitted as long in advance as possible.

We must all work together in order that the press may have an abundance of suitable material to present to the public. Let us do all we can to assist the press in its effort to give the people an adequate and accurate picture of the progress of science as it is brought out at our meetings.

AUSTIN H. CLARK,
Director

THE COST OF GERMAN SCIENTIFIC JOURNALS

PUBLISHED protests on the unreasonably high price of subscriptions to German technical periodicals are not effective. The present high price is not so much a matter of exchange conditions, although this is a factor, as it is the abnormally high initial price demanded by the publishers, amounting to extortion. Although after five years of depression, we are maintaining our library budget essentially unimpaired, I have directed that our subscriptions to sixteen German botanical periodicals be cancelled immediately. This has been done for the reason that subscriptions amounting to five to eight times as much as the rates charged for similar serials published elsewhere are not justified under any conditions. It is admitted that in a reference library broken sets of periodicals are regrettable, but when the cost per volume is so exorbitant, as in this case with those now discontinued, this is unavoidable. If other American institutions would do likewise, such action might be effective in reducing the present plethora of abnormally high-priced German periodicals.

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GAUSS AND THE FRENCH ACADEMY OF SCIENCE

IN his "A Short Account of the History of Mathematics," 5th edition, p. 448 (1912), Ball makes the statement that Gauss had submitted a part of his famous Disquisitiones Arithmeticae to the French Academy, which the latter rejected in a manner which must have been humiliating for Gauss.

A careful examination of the writings and biographical material of Gauss does not show a trace for such an occurrence. Professor Brendel, of the University of Freiburg, who is in charge of the Gauss archive, does not know of anything that might point to such a rejection.

Moreover, according to an official transcript sent to the writer by Professor Picard, permanent secretary of the French Academy of Science, there is not