coastal plains known to have been built by recent sedimentation from the hills; (4) the existence of indigenous floristic elements which could develop a more mesic soil-holding vegetation; (5) the inability of such species to maintain a vegetation in the face of grazing and fire.

Reparation of a region in which soil erosion has been carried to its ultimate conclusion may demand the application of methods quite different from those where it is desired merely to reduce accelerated erosion to normal erosion. Present techniques of reforestation in this zone have not been successful and an intimate knowledge of the requirements of soil-binding species and of a complex plant succession are necessary. The problem commands the ingenuity of conservationists, and upon it hinges the greatly increased productiveness of large acreages in a country where productiveness is becoming more critical.

This consideration of soil erosion in arid Hawaii is based upon field investigations on Oahu during 1936–37 while the author was research fellow of Yale University and the Bishop Museum (Honolulu). The interpretation has been strengthened by subsequent work of the author in this and other countries. The vegetational aspects of the problem are being discussed in a manuscript now in preparation.

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CONCERNING GASTROPODS ADHERING TO FOREIGN OBJECTS

IN the discussion of *Potadoma agglutinans,* a melaniid snail from the Congo Estuary which cements itself to rocks, we stated that we knew of no other comparable case among fresh-water Gastropoda.[1] In a recent conversation, Dr. Teng-Chien Yen called our attention to the small Chinese "enigmatic shells" described by E. Lamy as *Helicostoa sinensis.*[2] It is interesting to compare this mollusk with our *P. agglutinans.* The flattened, disk-like snail of *H. sinensis* adheres by one of its faces to the free surface of immersed rocks, apparently soon after hatching. At first it is normally coiled, but the spiral eventually spreads out and becomes irregular, much as in certain species of the marine genus *Vermetus.* The mode of adherence is therefore different from that of *Potadoma agglutinans,* which remains turreted, although much deformed, and adheres only where it presses against foreign objects as growth progresses. The smaller, young snails of *Helicostoa* appear to be of two types and the largest, presumably adult snails, reach 10 to 12 mm in diameter. Lamy recognized that *Helicostoa* was operculated, but did not attempt to place it in any of the known families. More recently, Mrs. A. Pruvot-Fol described the operculum, tentacles and radula from the original material.[3] She proposed for *Helicostoa* a special family Helicostoidae, of the *Prosobranchiata taenioglossa.* She also suggested that the two forms of the young snails were the two sexes, the tentacles and radula being present only in one of them, presumably the male. It would seem to us that the soft parts and radula of *Helicostoa* agree sufficiently with those of either Valvatidae or Bulimidae (Hydrobiidae), the radula being insufficiently known to decide between the two. It is unfortunate that the precise habitat and ecology of this snail are unknown. It was described from specimens attached to a limestone rock labeled merely "Kouei-Tcheou," a city on the upper Yangtse Kiang, more than 1,200 kilometers from Shanghai. It may be surmised that the rock was immersed in swiftly running water, either on the banks of the Yangtse Kiang itself or in the rapids of one of its smaller affluents. The present note is written for the purpose of interesting Chinese naturalists in this remarkable snail. Moreover, a thorough investigation of its habitat may well lead to the discovery of other equally interesting types of rheophilous mollusks, similar to those known from the swift waters of the Congo Estuary.

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[1] *Bull. Mus. Comp. Zool.,* 88: 3, 1941.
[2] *Jour. de Conchyl.,* 70: 51–56, 1926.
[3] *Bull. Soc. Zool. France,* 62: 250–257, 1937.

ANOPHELES MACULIPENNIS MEIGEN AND ANOPHELES PUNCTIPENNIS SAY FROM NORTH DAKOTA

TWO species of malaria-carrying mosquitoes have been found in North Dakota. Specimens of *Anopheles maculipennis* were taken by the authors in fairly large numbers under a concrete bridge over a swampy marsh near Grand Forks on September 20, 1941. Additional specimens of *Anopheles maculipennis* and three specimens of *Anopheles punctipennis* were collected from the ceilings and walls of outhouses in a park near Hillsboro on the same day. The presence of these mosquitoes in the state is not surprising in view of the fact that these species are known to occur in Manitoba and the states surrounding North Dakota.

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COLLEGES AND THE CHANGING HIGH SCHOOLS

THE article entitled "Colleges and the Changing High Schools," by M. H. Trytten, under "Discussion"

in the issue of SCIENCE of October 24, 1941, quotes me so inaccurately.

It is stated (page 389) with a footnote reference to the *New York Times,* "Dr. S. R. Powers . . . describes the results of a five-year survey. . . ." I have never at any time written for this newspaper. The description referred to was done by a staff reporter of the newspaper and printed under the reporter's name. The statements that "conventional treatment of science will go by the board" and about "scrambled courses," although attributed to me in the newspaper article, were not made by me and do not represent my views even approximately. In general the statements are meaningless when subjected to scrutiny and are irrelevant to the work that is being done under my direction.

The work in progress is carried on under an organization known as the Bureau of Educational Research in Science, of Teachers College, Columbia University, with cooperation of well-trained critically minded high-school teachers and with advice and assistance from scientific men with impeccable reputations as teachers and research workers. Further information about the work of the bureau may be had from the *Teachers College Record,* January, 1939; *Report of the Dean of Teachers College,* 1940; *General Education Board Annual Report,* 1939 and 1940; and from the bureau's publications obtainable through the Bureau of Publications, Teachers College, Columbia University.

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THE COMPARATIVE COST OF LOAN SERVICE AND OF MICROFILM COPYING IN LIBRARIES

IN a discussion[1] of "The Place of Microfilm Copying in Library Organization," the view was expressed that this method of rendering library service might be organized in a manner that would permit its operation at no greater cost than that of lending books. An opportunity to examine this question more carefully has since been obtained and the expectation has been confirmed that the actual cost of these two methods of rendering library service is not very different.

In regard to the cost of making microfilms an analysis[2] of the operation of Medicofilm Service showed that in groups of 100 orders the total expenditure for materials and work at the wage rate of $1.00 per hour was $17.25 or 17¼ cents per microfilm. This included the time required to obtain the books from the shelves and to replace them after use, as well as that devoted to verifying the film copies and mailing them out, but did not include the time required for keeping the accounts and collecting for the work done.

Although the extent and practice in regard to lending books varies greatly in different libraries, the experience in the Army Medical Library of Washington is probably typical of many of the larger reference libraries. In this library one employee, devoting her entire time to this work, keeps the records of all books which go out on loan. Others obtain them from the shelves and replace them when returned. Furthermore, the wrapping and mailing is attended to by a library messenger. During the last five years the following number of books have been loaned annually:

Year	Number loaned
1936	12,919
1937	13,886
1938	14,104
1939	13,128
1940	14,000

Average, 13,607

Of these, about 20 per cent. go to local governmental institutions and are called for by messengers and the remainder are sent and returned by mail for which the postage is prepaid by the borrower.

The working schedule in governmental departments is 44 hours per week, which with deductions for holidays and annual leave corresponds to 2,068 hours per year. On the basis of wages at $1.00 per hour, the actual cost per book loaned is $2,068 ÷ 13,607 = $.15. If to this is added the 3 cents which is the cost of obtaining each book used for microfilming and replacing it on the shelf as well as the cost of wrapping supplies and messenger service for 80 per cent. of the books loaned, the total cost is appreciably higher than that of making and sending out microfilm copies.

There are, of course, advantages and disadvantages in both of these methods of rendering library service. From the standpoint of the borrower it is evident that those who have not yet become accustomed to using microfilms will object to receiving one in lieu of the loan of the book itself. Others, however, will appreciate the advantage of being able to keep the microfilm copy. From the standpoint of library operation there is little doubt that microfilm service has outstanding advantages in permitting the collections to remain intact for their more uninterrupted use as well as reducing wear and tear of the books.

The evidence here presented shows that libraries could substitute free microfilm service to the same extent that free lending service is now rendered without increasing the cost of operation. If the demand for microfilms increased sufficiently to tax the funds available for this purpose, a very small charge for the microfilms would probably be sufficient to keep expenses within the allotments for this feature of

[1] Seidell, SCIENCE, 94: 114–5, August 1, 1941.
[2] Seidell, *Jour. Documentary Reproduction,* 4: No. 3, September, 1941.