

School Physics In Trouble

WASHINGTON -- "You can't be literate and educated in this time and place unless you understand some physics," says Dr. F. James Rutherford, executive director of a project to reform high school physics teaching.

If he is right, America is turning out a lot of illiterate graduates. Half of American high school graduates do not go to college; if they are to understand anything of physics, they must do so in high school. But high school physics today is in serious trouble. There is a desperate lack of well-prepared teachers.

Two-thirds of all high school physics courses are taught by teachers with fewer than 18 semester-hours of physics in their background--a far worse score than any other high school science. (For biology the figure is 21 per cent; chemistry, 34 per cent; math, 23 per cent.)

THINGS MAY GET worse before they get better. In 1966 only 505 college seniors were expected to graduate certified to teach high school physics; 336 of these were expected actually to do it.

The estimated demand for beginning physics teachers in the same year was 572.

The figures include only people who spend more than half their time teaching physics. Including all those who have to teach some physics can raise the estimate as high as 1,700 new teachers for whom some knowledge of physics was necessary.

In spite of the need the incoming high school teacher is too often the forgotten man in college physics departments. University physics departments are traditionally led by people with strong interest in research.

THE BACHELOR'S degree programs have been conceived as entries to graduate school--and the ultimate production of a new generation of researchers. A survey by a panel of the Commission on College Physics discloses that high-prestige departments rarely have programs to prepare high school teachers. Typically these departments graduate two or three teachers every five years.

Thus the heaviest burden of teacher preparation falls upon the teachers colleges--the reverse of the situation in other sciences where a majority of teachers come from university or liberal arts college departments.

The commission, which was established in 1964 by the National Academy of Sciences to survey possible reforms in college physics, wants to change the situation.

It would have university physics departments take the same role in physics teacher preparation as their counterparts do in other science.

SOME MAY argue that the preparation of teachers is best left to teachers' colleges; university departments have many, many other justifications for their existence. But, the commission points out, the teachers' colleges cannot produce in sufficient numbers.

A new university curriculum designed for physics teachers should be instituted, the commission feels, and it is now trying to find a university that will set up a pilot program. It would have to be an institution large enough to maintain a sequence of courses entirely separate from the research-oriented bachelors degree.

The commission does not believe that joint classes between future teachers and future research physicists would be beneficial; the nature of their needs is too different.

What the prospective teachers would get is a course including large doses of history and philosophy of physics and its place in modern society--topics seldom if ever found in the traditional physics major curriculum.

Let the Profile Bread Plan help prolong your Slender Years.



CARL MISCH, a pre-med student at Wayne State University is co-captain of this year's Tarlar baseball team. A junior, Misch is playing in his third season of collegiate ball and was elected co-captain along with Mike Clark by his team mates. He was graduated from Farmington High School where he played baseball, football, and also wrestled.

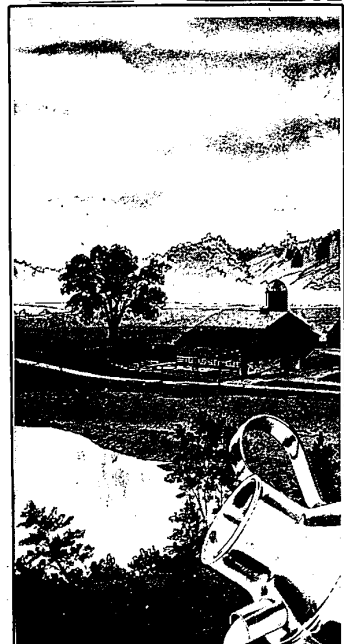
Fertilizer Know How Makes Greener Lawns

Why do some newly planted lawns literally jump off to a fast start, while turf grasses languish in the ground? Differences in the way fertilizer was used is a common answer, says R.C. Kuehner, manager of Oregon Fine Leaf Fescue Commission.

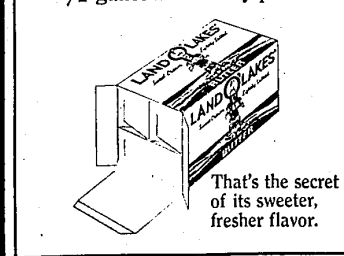
He advises you to be sure to put enough fertilizer in the ground early to give your lawn a good start. This means about twenty to thirty pounds of the usual commercial mixes per thousand square feet. The fertilizer should be applied on dry soil.

The lawn experts at Oregon Fine Leaf Fescue Commission emphasize that you should never put fertilizer on the surface of a new seeding. The fertilizer should be raked smooth before topsoil and seed are placed over.

After the first fertilization, treat your lawn to several dosages of high nitrogen fertilizer later in the year. This will keep the lawn strong enough to



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New Statistics School To Start At U-M

ANN ARBOR--Creation of a department of statistics within the College of Literature, Science, and the Arts at The University of Michigan has been approved by the Regents.

The new department will open with the fall term of 1969. Courses in statistics are now centered in the department of mathematics, which is recommending the creation of a separate department of statistics made these points:

1. Mathematical statistics, though rooted in traditional mathematics, has acquired a unique disciplinary character and an applied aspect distinguishing it clearly from other areas of mathematics.

2. Dispersal of statistics courses has occurred because of the need for statistical training geared to meet the specific needs of different research disciplines. Coordination of the various course offerings will be facilitated by the creation of a separate department of statistics.

3. Many major universities already have separate departments of statistics. The new department at Michigan should help in recruiting faculty members.

4. The University will be better equipped to help meet the "remarkable increase in the national demand for statisticians."

5. Statistics is important on the University campus, not only in the training of professional statisticians and the application of statistics to various com-

partment. The first, they said, will be the training of mathematical statisticians. "It is our view that the graduate program in mathematical statistics will be the core."

A second and extremely important function, the faculty members said, is the provision of service courses, primarily at the undergraduate level, for individuals working in other departments. Offerings of other departments may be coordinated with these service courses.

In addition, members of the

department of statistics will participate actively in consultation activities with other departments in such matters as the planning of research designs and the effective treatment of data.

"In time the scope of the department of statistics might well be expanded to include certain highly related disciplines," the report to the Regents suggested. "An example is the field of operations research where the techniques of statistics and applied probability are very much employed."



COMPUTER EDUCATORS MEET -- Data processing educators from six community colleges and two private schools in southeast Michigan met at Schoolcraft College recently to discuss means of upgrading college-level instruction to meet the requirements of employers in business and industry. Around the conference table above, reading clockwise from the top are: Miss Bessie Cobbins, education coordinator at Oakland County Community College; Oscar Paupart, data processing instructor at Schoolcraft and co-chairman with Miss Cobbins; Philip Hurford, Highland Park Junior College; Arthur J. Lamminen, director of business and industrial management, Washtenaw County Community College; Douglas R. Woolley, registrar at Washtenaw; Gerald Wideman, Washtenaw; William Maroney, Highland Park; Miss M. S. Sanborn, business education coordinator, Schoolcraft; Mrs. Ruth Hines, Northville Public Schools; Louis Caves, director of education, Institute of Computer Science, Dearborn; Paul R. Hunt, dean of occupational studies at Washtenaw; John Homeister, Oakland; Ed McNamara, Henry Ford Community College; and Steve Long, Henry Ford.

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