SCIENCE EDUCATION

OEEC physics curriculum

Physics courses in European secondary schools fail their primary purpose by concentrating on the physics major rather than the general student, according to the Organization for European Economic Cooperation in a report that is sharply critical of physics curricula in its member countries (*A Modern Approach to School Physics*, OECD, Scientific Directorate, 2 rue André Pascal, Paris 16).

In most European countries, the report says, a typical child's scientific education begins when he is twelve or thirteen years old and ends when he leaves school at the age of sixteen or seventeen. Except for a small number who have superior mathematical ability or who can appreciate abstract concepts for their own sake, the logical development of the subject from a few simple physical principles, or "laws," that characterizes most of the existing syllabi is too divorced from modern physics to be interesting. Study of the physics developments of the last few decades is reserved for those students who continue their education beyond the secondary-school level. Too much emphasis is placed on elementary mechanics, for example, and not enough on such recent developments as the discoveries made with accelerators and radio telescopes. The authors of the study feel that "nothing less than a radical change will suffice" if physics is to be made meaningful and stimulating to the majority of students.

The physics course visualized in the study would extend over four years, with an average of three or four periods per week, beginning at ages 12 to 14. The proposed course breaks down as follows:

(a) the particle nature of matter; differences between atoms, molecules, and electrons.

(b) basic concepts and laws of mechanics, with an emphasis on their physical significance.

(c) simple properties of gases and vapors; temperature and pressure as phenomena of particles in motion; states of matter and change of state in terms of aggregations of atoms and molecules; chemical bonds.

(d) measurement of temperature and the transfer of heat; the laws of thermodynamics; the energy supply available in nature.

(e) structure of atoms; electrons as carriers of electricity; electrostatics; thermionics; electromagnetism; magnetism.

(f) mechanical, acoustical, and electromagnetic vibrations.

(g) light as electromagnetic radiation; geometrical optics; diffraction; interference; emission and absorption of light, simple ideas of quantum theory; emission of x rays.

(h) radioactivity; structure of the nucleus; nuclear reactions; equivalence of mass and energy; elementary introduction to relativity.

New physics facilities

A $2.5-million gift from a New York investment banker will provide for the construction of a new physics building at New York University's Washington Square Center. The André and Bella Meyer Hall of Physics will be an eleven-storey structure occupying a block-long site. Preliminary plans call for 120 000 square feet of lecture and seminar rooms, laboratories, and faculty offices. When completed, the building will form part of a science complex being developed near the University.

A five-story metallurgical and chemical engineering laboratory at Lehigh University has been named in honor of Martin D. Whitaker, former Lehigh president and director of the Clinton Laboratories. Intended for both undergraduate and graduate training, the $2.75 million building will include areas for metallography, specimen preparation, electron and ion microscopy, physical ceramics, and physical-properties measurement. A glass-enclosed bridge will join the laboratory to a two-story classroom struc-