per cent., mathematics 10.37 per cent., history 4.23 per cent., English 1.96 per cent. These changes are graphically presented in Fig. 1 and at the same time compared with the changes of the two preceding decades.

In general the interpretation put upon the data in the previous article seems still to maintain, namely (1) that the decline in the percentage of students in the old-line subjects is largely due to the introduction of many new subjects like manual training, domestic science, biology, agriculture, drawing, etc., most of which appear in the tabulation for the first time in the 1916 Report; and (2) that the science group is holding its own reasonably well. This is especially true of physics and chemistry which are usually offered in the third and fourth years of the course. Since the high-school enrollment is increasing very rapidly, 45.1 per cent. 1909–1914, while the percentage of pupils in the upper grades increases slowly (.49 per cent. for the third grade, 1.8 per cent. for fourth grade in the same five years), there is an increasingly large number of students that get no chance at physics and chemistry.

The data given for botany and zoology are indicative that another decade will see these biological subjects eliminated from the high-school curriculum. I am not sure that such a conclusion is justified, however; they may merely appear under a new caption. The data given for the whole United States may obscure what is going on locally and progress is usually local at first. Changes of opposite character may quite effectually obliterate each other when the data are massed. Thus the interest in French is largely concentrated in the New England States. More than 43 per cent. of the high-school pupils of Maine and New Hampshire are enrolled in French. The average for the New England States is 37.7 per cent.; for the North Central States, 3.07 per cent. The percentage enrollment in French has declined, though the enrollment in the modern languages has increased, largely due to the increase in Spanish in the Western States, the percentage of enrollment in it being 10.45 per cent. there, as compared with 0.76 per cent. in the North Central States.

The largest decline in botany and zoology has been in the North Atlantic States, where the percentage of enrollment has dropped in the five-year period from 16.28 per cent. to 6.46 per cent. in the former subject and in the latter from 9.64 per cent. to 3.18 per cent. But simultaneously the enrollment in biology has risen from 2.35 per cent. to 14.38 per cent. The percentage of enrollment in botany has changed in the North Central States from 17.72 per cent. to 12.79 per cent. and in zoology from 5.57 per cent. to 3.49 per cent.; but at the same time the enrollment in biology has risen from 0.13 per cent. to 1.64 per cent. and in agriculture from 4.97 per cent. to 9.78 per cent.

Botany and zoology are apparently giving way to related subjects that either appeal to school authorities as more effective educationally or to the public as more closely allied to everyday affairs. In view of the fact, now generally recognized, that knowledge and principles gained in one field of study do not carry over even into an adjacent field readily, it must be considered good policy in science instruction to deal with subject matter that is as nearly identical as possible with that which pupils will handle in their major life interests.

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SCIENTIFIC EVENTS

PROFESSOR ROBERTSON'S GIFT TO THE UNIVERSITY OF CALIFORNIA

Dr. T. Brailsford Robertson, professor of biochemistry and pharmacology in the University of California, has executed a deed donating to the University of California all his patent rights in the growth-controlling substance, "Tethelin," which he has succeeded in isolating from the anterior lobe of the pituitary body, and which has been employed to accelerate repair in slowly healing wounds. All profits resulting from this discovery are to constitute an endowment, the income to be applied to medical research.

Tests of this new chemical substance made in army hospitals in Europe and in civil hospitals in America have shown that it is of value in curing wounds and in causing wounds to heal promptly which for months or even years had refused to yield to treatment. While several new substances and new methods found by medical investigators since the war began have proved extremely useful in combating infections in wounds, "Tethelin" has a field of usefulness all its own—after other methods have rendered the tissues aseptic and wounds sometimes refuse to heal, especially where frostbite, burns, or varicose veins have injured the vitality of the tissues. There are thousands of such cases in Europe to-day and they occupy the hospitals for an exceptionally long time, consuming drugs, time, space, and food, and frequently such cases have to be discharged unhealed. It is precisely these cases—the most expensive and most disabling type of wounds—which "Tethelin" aids, since it stimulates the sluggish tissues and enables nature to work its own repair.

Professor Robertson has relinquished all personal profit from his discovery of this growth-promoting substance. In the agreement by which the regents of the University of California have accepted the trusteeship of this endowment for medical research it is provided that in case Professor Robertson should become physically disabled his present university salary would be continued throughout his lifetime, from the proceeds of the trust, or in case of his death, to his wife for her life time. All income above this contingent charge will go to endow an institute of medical research, devoted to research in medicine, and especially to research in the physiology, chemistry and pathology of growth.

Under the supervisory control of the regents of the university, the researches thus provided for are to be directed by a board of directors, of which the charter members are to be five members of the faculty of the University of California: Dr. F. P. Gay, professor of pathology; Dr. Herbert M. Evans, professor of anatomy; Dr. George H. Whipple, professor of research medicine and director of the George Williams Hooper Foundation for Medical Research; Dr. C. L. A. Schmitt, research assistant in pathology; and Professor Robertson himself. Vacancies on this board must be filled from men engaged directly and primarily in research work of the character mentioned or of some kindred character. No man who ceases to be so engaged may continue to serve as a director, and no director is to contine in service on the board after he arrives at the age of sixty. It is felt by the University of California that one especial value of the establishment of this foundation is the pattern which it sets for a procedure by which other scientific discoverers may dedicate the results of their scientific discoveries to the benefit of mankind as a whole.

THE HEALTH OF MUNITION WORKERS IN ENGLAND

THE report to the British government Committee on the Health of Munition Workers is summarized in the *Journal* of the American Medical Association. Dr. H. M. Vernon has conducted an elaborate investigation for the committee, the members of which realize that the data at their disposal are not yet ample enough to permit them to express a final judgment on the whole question of hours of labor in relation to output, on the one hand, and the well-being of the employees, on the other. But they are strongly of opinion that the evidence collected by Dr. Vernon and his conclusions merit the immediate and earnest consideration of all concerned in industrial organization at the present time. (*a*) Observations extending over a period of thirteen and one half months on the output of workers employed in making fuses showed that a reduction of working hours was associated with an increase of production both relative and absolute. The rate of production changed gradually, and did not reach an equilibrium value before the expiration of four months. Thereafter it remained steady during the period of from three and one half to five months during which it was observed. The gradual change negatives the suggestion that the effect was a mere con-