

The Continuity of Knowledge

General Science

President A. LAWRENCE LOWELL of Harvard University in his annual report:

Within the memory of men still in middle life a marked change has taken place in the outlook of scholars, and especially of those who deal with the physical sciences. The prodigious extension of knowledge in the nineteenth century caused a restriction in the field of the individual, for no longer could anyone be familiar with all that was known in more than a single branch of learning, and often only in a subdivision of that branch. A Casaubon had become an impossibility, and in his place had come a number of specialists working in their distinct subjects. From time to time the propounding of new comprehensive laws or hypotheses that group many facts about general principles has opened the way for wider conceptions and further progress. The theories of conservation of matter and of energy did this for physics, the atomic theory did the same for chemistry, evolution for biology, and bacteriology for medicine. But the large number of scientific investigators amassing details by special researches under these laws raised such a cloud of facts as again to make vision difficult for more than a short distance. Limited specialization was on the whole particularly noticeable in America owing to the absence of the broader academic traditions of Europe; and it is, perhaps, natural that here also a change in attitude should be more pronounced.

The shift in the standpoint of scholars, and notably of the younger men of science, has been due to a still greater extension of knowledge. Dividing lines between the different subjects, which formed barriers about them, have been breaking down. No one knows today exactly where they fall between physics and chemistry, or between zoology and botany. The new problems are intimately related to both; and even fields formerly so far apart as physics and biology are learning how much light one can derive from the other. All this is eminently true of medicine, which is coming to be regarded much more than in the past as a single whole, no essential part of which can be fully understood without the aid of all the rest. Memory of details is less important in medical education than a thorough comprehension of the rela-

tion to one another of its component principles.

What is true of science is true of other subjects also. All of them are learning that they cannot live a full life alone, for they touch one another at many points where they need each other's help; and thus the rigid boundary walls that separated them are crumbling. The sharp severance is giving way, and we are perceiving that all subjects pass imperceptibly into others previously thought distinct. As yet it is at their peripheries, at their points of contact, that the various subjects are tending to fuse. The vesture of thought appears as an unbroken fabric extending from one portion to the next. Men are interested today not so much in the philosophic unity as in the continuity of knowledge.

Science News-Letter, March 3, 1928

All of the pictures in the famous Louvre gallery at Paris are being tested by X-rays to detect alterations and to expose fakes.

The oldest Chinese maps known to exist are cut on stone tablets dated 1137 A. D., but Chinese history refers to a map used as early as 227 B. C.

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Physiological Sectionalism

Physiology

WALTER C. ALVAREZ, in *The Mechanics of the Digestive Tract* (Hoerber):

A centipede is a colony of legs, each segment of which can walk and attend to its own affairs. Normally they all follow the lead of the head segment. If we cut the nerve cord we get, in effect, two independent centipedes, one of which may want to stand still while the other wants to walk off. The result is that the animal turns from time to time to bite savagely at its rear half which it seems to regard as a foreign body. The hind end of a planarian worm which has grown too long for efficient conduction fails to follow the lead of the front end; it takes firm hold of the aquarium wall, the front end crawls on unconcernedly, and the worm is pulled in two.

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The American beeswax crop is valued at four million dollars a year.

Spices are spicy because of the aromatic oils secreted in the plant.

Some birds have such keen vision that they can see a worm on a leaf three or four hundred feet away.

BINDER COVERS

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