

## LITERATURE

## Ethiopian Bible Odd and Colorful, Scholars Are Told

**T**HE Bible of Ethiopia's Christian warriors, believed to date in translation from fourth or fifth century A.D., is written in colorful and sometimes expurgated language.

So the Society of Biblical Literature and Exegesis was told by Prof. Moses Bailey of Hartford Theological Seminary.

Citing oddities of the Ethiopian Bible, Prof. Moses said:

"The Garden of Eden, or Garden of Voluptuousness, as it is called in Greek as well as Hebrew, is nicely expurgated as the "Garden of Pleasantness."

In the creation story, where Hebrew and Greek versions state that God made a firmament or dome over the earth, the Ethiopian translator said God made a roof. Presumably this would mean a thatch roof, the common kind of the country, Prof. Bailey explained.

Prof. Bailey is teaching one student the Ethiopian language at the Hartford Seminary, and thus Columbia University is not the only institution offering

a course in Ethiopian, as has been stated.

Nomadic wanderings of Bible patriarchs and tribes are translated in Ethiopian by a word meaning either to journey or to be free. Wandering and freedom are one and the same, to the Ethiopian, Prof. Bailey explained. A common name for Ethiopia itself is the Land of Freedom, Bher Ge'ez, and the classical speech is the Language of Freedom.

Once, in the Ethiopian Bible, the word for freedom is used of insanity to describe David's feigning madness. To the Ethiopian it was a sort of mental wandering.

"Just as a French Bible is quite another book from an English Bible, so the Ethiopic presents its own picturesque world, even though it is a fairly literal translation of the familiar Greek," Prof. Bailey said.

The Ethiopic version is important to Bible scholars because it was translated early from the Greek, and helps to show what the early Greek text was like.

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## ARCHAEOLOGY

## Art Reveals Ancient Jews Used "Visual Education"

**F**ROM documents coming to light, and from paintings and mosaic floors unearthed in ruined synagogues, ancient Jews are revealed in a new light as artists.

"The Jews are credited with establishment of the Public School System, introduced by the High Priest Joshua ben Gamala in 64 A.D.," said Dr. Paul Romanoff of the Jewish Theological Seminary of America.

"The art in the synagogues, the murals and mosaics, will now credit the Jews with the introduction of one of the modern methods in education—visual instruction."

Dr. Romanoff addressed scholars attending the meeting of the Society of Biblical Literature and Exegesis.

The religious pictures, he finds rea-

son to believe, were used to illustrate subjects studied in schools in the synagogues or in adjacent buildings.

"The universal belief that Jewish Biblical and Rabbinic law prohibits the cultivation of art is erroneous and unfounded," declared Dr. Romanoff. "Art in ancient times having been a medium of pagan worship, the Jewish religion naturally evinced an aversion to it. It can be definitely established that in the third century of our era murals and mosaics with human figures were legally permitted in Palestine by the outstanding Rabbis and heads of Jewish Academies."

The date when murals and mosaics were legally permitted can be fixed, he said, by a recently discovered fragment of the Palestinian Talmud published by

Prof. Epstein of the Hebrew University of Jerusalem. Jews were allowed to portray human figures on synagogue walls in Palestine in the middle of the third century. Mosaics were permitted at the end of the third century. In private houses such adornments had been in use for some time before that. And in Babylon, Jewish artists had begun to paint Old Testament scenes on synagogue walls near the end of the second century. Ruins of a synagogue in Dura on the Euphrates have revealed some of these well preserved Bible scenes painted 244 A.D.

References in ancient writings indicate that Jews were permitted to own sculptural art as early as the second century.

"Statues worshipped by pagans could be used by deforming them a little, such as the breaking off of a finger tip or the tip of an ear," said Dr. Romanoff.

Jewish sculptors in Palestine even engaged in modelling figures of pagan deities, he added.

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## PHYSICS

## Detonator Caps Develop Enormous Energies

**E**XPLOSIONS of the detonator caps used to set off dynamite blasts develop unbelievable energies and do very strange things, Dr. R. W. Wood, professor of physics at the Johns Hopkins University, told fellow-researchers at the meeting of the American Association for the Advancement of Science. In experiments which he described, tiny pellets of copper no bigger than the head of a pin were driven through a couple of telephone directories, and one of them, fired downward into a crock of water, shattered it into a dozen pieces.

Prof. Wood was interested in the investigation of these violent explosives through the tragic death of a prominent Baltimorean's wife. She opened a furnace door to inspect the fire, when a blasting cap, accidentally left in the coal by a miner, exploded. It drove a pinhead-sized pellet of copper through her breastbone, severing a large artery and causing her death in a couple of minutes.

The tiny fatal missile, when recovered at the autopsy, had a peculiar shape. It was pear-shaped, with a flange or skirt of thin copper extending around it. Prof. Wood's subsequent experiments showed that this curious shape was caused partly by the deformation of the end of the cap's copper shell, partly

by the almost instantaneous melting of the copper and its rolling up into the rounded end of the pear-shaped bit.

Prof. Wood fired many such detonators, loaded with two different fulminant compounds, and studied their effects. Spark photographs of the air-trails they left in their courses indicated that these end-pellets zip through the air with a velocity of six thousand feet a second, approximately three times the speed of a rifle bullet. The thin sides of the cap are torn into thousands of almost microscopic fragments, each able to make a tiny nick in a piece of plate glass. A

flake of one of the explosive compounds, laid on a glass plate and touched off with a hot wire, shattered the glass in fragments.

While not every accidental explosion of a fulminating cap ends as tragically as the one that "set off" Prof. Wood's research, there are plenty of them every year that result in lost fingers and blinded eyes. Children playing around quarries and similar places find them, pound them with a rock or a hammer "for fun," and are permanently injured.

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## PHYSICS

## Evidence For Existence Of Neutrino Presented

**E**XPERIMENTAL evidence for the existence of the "neutrino"—postulated but never-found new atomic particle—was presented by Dr. Kenneth T. Bainbridge of Harvard University to the American Physical Society.

For years scientists have known that the cores, or nuclei, of atoms contained the electrons, the negatively charged particles of small mass, and the protons which are positively charged particles of the same mass as the hydrogen.

In 1932 Prof. James Chadwick of Cavendish Laboratory, England, discovered that atom nuclei also contained the neutron which, as the name suggests, is neutrally charged in the electrical sense. Prof. Chadwick won the 1935 Nobel Prize in physics for this discovery.

More recently a number of theoretical scientists have postulated the existence of the neutrino, or little neutron, in order to explain certain products produced in artificial radioactive transmutation of the elements.

Working from known facts and with known theories it can be shown, for example, that certain isotopes can exist only if the neutrino is a fact instead of a mathematical abstraction. The search for such isotopes would, then, constitute a test for the existence of the neutrino.

Dr. Bainbridge's report concerned the discovery of what might be called the "neutrino" isotopes. Using his new mass spectrograph—which might be likened to a super scale for weighing individual atoms—the Harvard scientist detected isotopes of cadmium and indium of atomic weight 113, indium

and tin of atomic weight 115 and antimony and tellurium of atomic weight 123. These isotopes can exist only if the neutrino exists.

The experimental technique is an indirect one, naturally. It is about like saying that all living bodies must contain hearts and if you can find a living body you have evidence for a heart inside it, even though you may not be able to see the heart itself.

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## PLANT PATHOLOGY

## Artificial Wind of Fans To Banish Turf Disease

**F**ANS built like airplane propellers were used to abate a bad fungus disease of turf, known as brown spot, in experiments reported by Drs. John Monteith, Jr., and Mary E. Reed of the U. S. Department of Agriculture. The fungus thrives and spreads its death in grass when the air is hot and damp, and wind keeps it down, apparently simply by raising the evaporating power of the air to a point too high for the fungus to grow.

Whether golfers will presently see big fans set up alongside the greens on their favorite golf courses, where the brown-patch disease is most menacing, the report of the two Government researchers did not state. More practicable, probably, will be the cutting of air-drainage lanes through too-dense surrounding vegetation and other natural means of encouraging air circulation.

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## GENERAL SCIENCE

## Prof. E. G. Conklin Will Preside Over A.A.A.S.

See Front Cover

**P**ROF. Edwin Grant Conklin, one of America's leading biologists and long a professor at Princeton University, was elected president of the American Association for the Advancement of Science. Dr. Conklin in being elected to this high scientific office succeeds Dr. Karl T. Compton, president of the Massachusetts Institute of Technology, and he will preside during 1936 and deliver the principal address of the 1937 Christmas meeting.

Newspapers can be the greatest aid to science if they treat science less like magic and are concerned more with truth than with sensationalism in science. This, in essence, is the belief of Prof. Conklin.

In an exclusive statement to Science Service in response to the question, "What is the aim of science and how best may the newspapers of America said in attaining that aim?" Prof. Conklin said:

### Spirit of Science

"The highest value and promise of science in the present state of the world will be found in the spread of the spirit, the methods and the aims of science among men.

"The spirit of science is freedom to seek truth in any field and to proclaim any view for which there is verifiable evidence. The methods of science are the appeal to phenomena, the rigorous distinction of fact from fancy, of reason from emotion, of truth from error. The aim of science is to understand and as far as possible to control natural phenomena for the promotion of human welfare and progress.

"Science cannot make satisfactory progress nor can human welfare be promoted in a non-scientific society. Newspapers and radio are the schools of the people and they can best help science and promote human welfare by following the spirit, the methods and the aims of science itself.

"Within recent years great progress has been made in these respects by some of our leading newspapers, but there are still many who treat science as a kind of magic and are more concerned with sensationalism than with truth."

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Heart trouble has increased 61 per cent. in this country since 1900.