



#### SILURIAN EURYPTERID

*This strange creature was an inhabitant of the seas in which the cement beds at Buffalo were laid down, and Buffalo is practically the only locality where good Eurypterids are found. The photograph is of a painting in the Buffalo Museum of Science.*

#### ASTRONOMY

## Other Planets Tell About Earth's Past and Future

**W**OULD you like to know what the world was like a billion years ago and what it may be like a billion years hence? Just look at two of the earth's near neighbors—Mars and Venus. In Mars scientists see the earth as it may eventually become. And in Venus they see a world like the earth may have been before life evolved upon it.

Speaking as retiring president of the American Association for the Advancement of Science Henry Norris Russell, distinguished Princeton astronomer, recently told what science now knows about the atmospheres of the planets. Atmosphere is essential for any consideration of life as it exists on earth.

All planets lose the original vapors, Prof. Russell pointed out, which make up their atmosphere. How soon they lose them depends on how large they are; how well the pull of gravity will keep the gases from flying off into space and becoming lost.

At one end of the scale are the small planets, Mercury and Mars, which have almost no atmosphere. At the other are the giant planets, Jupiter, Neptune and Uranus, so large that they retain even the lightest gases, helium and hydrogen, in their atmosphere.

Intermediate are the middle-sized planets, earth and Venus, which have lost some of their original atmosphere but have kept plenty also.

On the earth at least, important gases, such as oxygen, can be lost in other ways than by merely flying off into space. The chemical process of oxidation goes on and oxygen is going into chemical compounds from which it can be liberated only with difficulty. The formation of iron oxide, or rust, is a familiar example.

Through one way or another, Prof. Russell pointed out, the earth has lost over half of its original oxygen in the last billion years. Plants continually supply oxygen, through their use of carbon dioxide, but gradually and irreplaceably the irons and other elements in the earth turn life-giving oxygen into compounds hard to use in any convenient form.

On Mars, Prof. Russell suggested, this process has gone much further. The actual reddish color of the planet, unique among all heavenly bodies, may be due to the presence of vast plains of reddish iron oxide, or rust, on its surface.

If man lives on Mars (Prof. Russell said only "if" and not "does")

he would have to dwell in great cities clustered about enormous oxygen-producing plants making the life-giving gas from rocks and iron oxide. Sealed rooms supplied with oxygen would be a necessity, and ordinary business outside buildings carried on with gas masks and the like.

All this is hardly a pleasant picture but life on the earth may some day be like that.

"Venus seems to be at the beginning of this oxygen shortage process," Prof. Russell said. "It is much as a lifeless earth might be. We do not know how life began here, but conditions may well have been much less favorable on Venus. The real puzzle is the apparent absence of water on Venus' surface. She is almost the twin of the earth in size, density, mass and so on and one might expect an ocean there of comparable volume."

*Science News Letter, January 12, 1935*

#### PSYCHOLOGY

## Proper Schooling Raises Intelligence of Children

**T**HE intelligence of your child may be raised to a higher level in a few years of schooling if the school to which he is sent is like the one that Prof. Beth L. Wellman of the Iowa Child Welfare Research Station reported to the American Association for the Advancement of Science.

Contrary to the general idea, the IQ does not seem to be fixed once and for all. Good teaching, strenuous competition and other advanced educational

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