

## Earth Never Molten

The earth did not start as a sphere of superheated gases, slowly cooling down to a globe of liquid lava and finally to its present solid state, according to Prof. T. C. Chamberlin of the University of Chicago. Prof. Chamberlin has for a number of years advocated a theory for which he and his colleague Prof. F. R. Moulton are responsible, that the earth and all the planets originated by the lumping up of vast masses of small cold cosmic particles, after the fashion of a big snowball, and that lava and other phenomena of earth-heat are of relatively late origin and not from great depths in the earth.

A number of objections are advanced by Prof. Chamberlin to the old hot-origin theory. The smaller planets, including the earth, he says would never have had an atmosphere if they had developed by condensation of heated gases; but if we adopt his "planetesimal" hypothesis of a cold-particle origin the atmosphere can be accounted for as having arisen by the chemical action of the rocks. Furthermore, he claims, if the earth had to spin for many ages as a ball of molten rock it would have bulged out at the equator much more than it does, and would have had much more of an onion-like shape. While it is true that the earth is somewhat flattened at the poles, this flattening is not sufficient to fit in with a molten, spinning origin; and we are confronted with the further curious fact that whereas the North Pole is situated in a depression surrounded by a series of mountain chains, the South Pole is on a high plateau surrounded by a series of troughs in the bottom of the ocean.

The distribution of the stuff the earth is made of is not even, as it should be if it had ever been all one molten mass. Instead, there is a concentration of the heavier materials towards the southern latitudes, where the widest ocean stretches are, while the lighter ones have been rumbled up into the mountain masses on the great continents concentrated at the northern end of the map.

The moon as well as the earth gives testimony in favor of the planetesimal hypothesis. The vast craters that pockmark its face are of the kind that would be formed by volcanic eruptions taking place under great loads of loose, dry materials. What the moon looks like now the earth once looked like; but the moon, having no atmosphere, could have no

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## No Birth Control for Masses

Why should we protest about the big families of laborers of today when from their ranks are recruited the professional people of tomorrow?

In analyzing data collected on the number of children born to men aged 45 years and older, Dr. Raymond Pearl, director of the Institute for Biological Research at the Johns Hopkins University has found that the professional, clerical, trade, domestic and personal service, public service, and transportation occupational classes do not quite produce enough offspring to maintain their present numbers. On the other hand the heavy laboring classes of the manufacturing, agriculture and mining occupations are reproducing themselves in excess of their present representation in the population. It is from this excess. Dr. Pearl suggests, that the deficiencies of the first six classes must be made up, if the present proportion of the occupations in the total population is to be maintained.

Such an order of things is not undesirable in the opinion of the distinguished biologist for, he asserts, "We need to have laborers reproduce faster than do professional men, in order, first, to take up the greater human wastage in the laboring classes, and second, to permit of continued industrial growth and prosperity. Probably a sound economic structure of the country as a whole is in a very real and considerable sense dependent upon just this relationship. So far from being alarmed at the present situation, we should find serious cause for real alarm if it were markedly different from what it is.

"To be sure, some part of the next generation's supply of professors, doctors, lawyers, bankers, railroad presidents, and the like, will have to be recruited among the sons of the farmers and factory laborers of this generation. But what of it? Just precisely this relationship has always been true so far in the history of the world and probably will be true for a long time to come. And furthermore from just the same sources will have to be recruited some of the clerks, typists, small tradesmen, jobholders, brakemen, motormen, and various other less lofty citizens.

"The superior people of the world have always been recruited from the masses in far greater proportion than they have been reproduced by the classes. This does not at all necessarily imply that environmental influ-

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## Bose's Claims Denied

The heartbeats of plants which Sir Jagadis Chunder Bose claims he has demonstrated are mere figments of a romantic Oriental imagination, unsupported by any genuine scientific fact, according to Dr. D. T. MacDougal of the Carnegie Institution of Washington. Dr. MacDougal recently discussed the problems of the uphill flow of water in trees, and took occasion to criticize the statements of the Indian savant in the sharpest terms.

"An examination of the assertions of Sir J. C. Bose that sap is pumped upward by pulsating action of living cortical cells has been made," he stated. "Bose's claims as to the rate and mechanism of sap movements ignore well-established anatomical and mechanical facts, and are based upon imagined but impossible hydrostatic action of living cells. No single direct observation nor any measure of pulsatory action has even been made, by Bose or anyone else, yet an explanation of the ascent of sap is based on such an idea."

After characterizing Bose's claim of a rate of pumping which would take a drop of water through the plant's tissues at the rate of from two to four hundred living cells a second as "too fantastic for serious comment," Dr. MacDougal continued:

"When Bose's suggestion that these pulsations may be the result of stimulation by friction of the roots with soil particles is carefully examined, it is realized that the passage from pseudo-research to infantile fancies is an easy one. A sympathetic exposition of the Bose Institution and of the work of its director includes the following passage: 'For the mysteries of Nature are probed in Sir Jagadis' institute not by study of libraries or by mechanical experiments, but primarily by communion with the unseen and the un-known. Inspiration, imagination, intuition, vision, this is an even more romantic touch.'

"The correctness of this characterization is attested by every page of Bose's book on the ascent of sap, which is utterly lacking in scientific significance. Such books appearing on the lists of scientific publications constitute a menace and danger to sound science.

"Since the acceptance of Bose's work in America has been widely proclaimed in the popular press of Great Britain, we are led to say that such recognition of Bose's work on

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ascent of sap and the nervous mechanism of plants has been confined to palace tutors. Cabinet ministers, political propagandists, and literary reviewers whose capacity for judgment, motives and purposes may not be adequately discussed here."

Science News-Letter, January 8, 1927

The mink, popular for its fur, belongs to the weasel family.

Stars are red, yellow, white, or blue, according to their temperature.

The United States buys 95 per cent. of all silk Japan exports.

A resort hotel in California is insured against damage by tidal wave.

Ice from Arctic regions was recently found drifting 250 miles southeast of Bermuda.

When the temperature is at 100 degrees, ants move twelve times as fast as at 50 degrees.

New York uses nearly one-eighth of the total electricity generated in the United States.

**No Birth Control***(Continued from page 23)*

ences have been the chief factor in the production of superiority. On the contrary, Galton's work shows that heredity plays the principal role. But the almost infinite manifoldness of germ-plasmic combinations can probably be relied on to produce in the future, as it has in the past, Shakespeares, Lincolns, and Pasteurs, from socially and economically humble origins."

Science News-Letter, January 8, 1927

When angry a skunk stamps on the ground with its fore feet.

Some railroads are forced to wage war on pocket gophers to protect their railway embankments.

The loss in iron escaping from the blast furnace amounts to three per cent. of the iron mined.

Artificial straw, artificial "horse hair," and artificial wool are recent developments of viscose.

History is our most important science, according to Dr. Michael Pupin, famous electrical engineer.

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weather and hence no weathering of its mountains, whereas the earth's features have been worn down by winds and rains and forests for untold ages, while entirely new mountain ranges have arisen a dozen times over through the restless heaving of its crust.

Science News-Letter, January 8, 1927

Caries, a disease of the teeth, is found in the remains of fishes that lives 20,000,000 years ago.

Bamboo is so important in China that its disappearance would leave the country in a state of chaos.

Students entering Pennsylvania State College are now photographed for future reference.

Use of motion pictures in medical classes makes it possible for students to study more carefully the technique of surgical experts.

When it rains and the temperature is below freezing, the raindrops solidify on striking a solid object, and the result is an ice storm.

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