

higher than that of the incandescent lamp, one type of the new lamp producing 60 lumens of light per watt in the 30-watt size, while the equivalent standard bulb produces only three-tenths of a lumen per watt.

Ward Harrison, of General Electric Company, and S. G. Hibben, of the Westinghouse Manufacturing Company, described the lamps at the meeting.

One of the new lamps, Mr. Harrison claimed, produces the nearest approach to natural daylight ever achieved by any artificial illuminant.

Chemical powders coating the walls of the bulbs contain the secret of the new means of lighting. Mercury vapor at low pressure, when an electric current is passed through it, produces invisible ultraviolet radiation with a high degree of efficiency. The ultraviolet radiation, bombarding the chemical powders, is re-radiated as visible light, its color depending upon the particular chemicals used. This transfer is also extremely efficient. The great heat losses of the present type of incandescent lamp are avoided.

*Science News Letter, May 21, 1938*

## GEOLOGY

## Continents Did Not Drift, Fossil Evidence Shows

### Distribution of Fossil Land Animals Indicates Migration Was From the North, Not By Southern Seas

**D**RIFTING continents and great transoceanic land bridges were not necessary to explain the distribution of life during the earth's past ages when coal was forming, Dr. Charles L. Camp, University of California geologist, has concluded.

Distribution of fossil land animals does not support the theory of continental drift, but strengthens the idea that the continents have always been land and the oceans always full of water.

To explain the distribution of plants and animals of past ages, geologists have evolved a number of theories.

1. That in early times there was only one continental land mass, which broke up. The fragments, gradually evolving into our present continents, drifted slowly around the earth, carrying with them the primal animals, ancestors of some of our present forms.

2. That there were great land bridges extending across the South Atlantic, over which animals and plants migrated from continent to continent. These bridges, according to theory, foundered into the oceans not so many millions of years ago.

3. That the continents have always had about their present shape and distribution, with occasional submergence of some low-lying areas, and upraising of shallow sea floors to become land.

Discussing his evidence, gained from a study of the fossil land animals of the continental areas, Dr. Camp finds that

they probably migrated from Eurasia to America over northern land connections, and that neither drifting continents nor land bridges in areas that are now deep sea are needed to explain their distribution.

Using only large land animals, which cannot swim long distances or be carried by birds or wind, as evidence, Dr. Camp solves the problem of conflicting evidence. Long ago it was shown that the plant and water-animal life of Africa greatly resembled similar life forms in South America, and on this resemblance many geologists contended for continental drifting and land bridges. Other geologists pointed out that birds can carry plant seeds, winds carry fern spores, and that water animals generally travel by swimming, needing no land bridges or drifting continents to explain their presence in Africa and South America.

Southern amphibians and reptiles, according to Dr. Camp's interpretation of the fossil evidence, came to the southern continents from the north, which, throughout much of geologic history, was an interconnected series of continents. Southern fossil types, then, came from the same place—the north—suggests Dr. Camp, and did not cross over from one continent to another on land bridges, or drift across the Atlantic on a "foot-loose" continent.

*Science News Letter, May 21, 1938*

Artificial rubber can be made from tomatoes, according to an Italian report.

## SOCIOLOGY

## World's Giant Cities Seen "On Downward Path"

**T**HE WORLD's greatest cities are on the downward path. Far from being good and wonderful in proportion to size, they are mechanized and expensive giants, crushing rather than serving the millions within their grasp.

This is the warning sounded by Lewis Mumford, sociologist, in a startling new volume, "The Culture of Cities." In a sweeping survey of city life from the tenth century onwards, he finds that vaunted improvements have been mainly for the worse. Our most pressing task, perhaps, he says, is "to cast off the dead-form of the metropolitan order."

Sticking pins in the balloon of modern pride, he says in substance:

Medieval towns were more livable than any built since.

Renaissance towns were made elegant for the gentleman. As much as one-fourth of a city's people, by estimate, were casuals or beggars.

The machine age brought industrial towns in which even upper classes lived in slum-like congestion, with houses lacking proper light and ventilation.

The metropolis offers what the sociologist calls a ghost-like existence, in which people know about many things but have vital acquaintance with so little. Passive crowds know life by reading, looking, listening. He says, "they are bordering on a pathological state."

Subways he calls traveling prisons, in which people spend vast amounts of time "upon an activity that has flatly no value in itself."

The tremendous water supplies needed by a giant city are seen as a wartime danger: "Should an enemy disorganize the water supply of the metropolis for as much as three days, the result would be a far more horrible loss of life than the worst conceivable vomit of poison gas from the skies."

The downward cycle of city evolution, if unchecked, leads toward over-expansion of industry and questionable speculations, followed by depressions. Cities are dominated by their worst traits, including graft, privilege-seeking, all forms of grab-and-get, moral apathy, fear, uncertainty, "rise of gangster-dictators (Hitler, Mussolini) with active consent of the bourgeoisie and systematic terrorism by pretorian guards." This stage ends in a deliberate cult of savagery, barbarian invasions from within and without, and beginning of exodus from the cities.