

without danger to America's chances for recovery of her vanishing forests. Indeed, the use of Christmas trees may even aid in that recovery.

For in man-helped forests as in naturally propagated ones, many more young trees must be started than ever have a chance to grow to full maturity. A few years after a burn or a landslide, the swept area may be thick with saplings "like hair on a dog's back." And foresters imitate more or less this thick-planting tendency of nature.

But as the little trees grow up they all demand room to spread their branches, and if they are all left stand-

ing they will push and elbow each other most unmannerly. A stand of saplings left unthinned will grow up into a weed-patch instead of useful timber, full of slim, spindling trees whose trunks might be good for fishing poles but not for much else.

So the foresters have to go in and select the young trees that are to be the timber, and ruthlessly cut out all others. Hundreds of thousands of young evergreens are thus eliminated every year. They used to be heaped up and burned to get rid of them.

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experiments start with living eggs. They in no way create life. They merely stimulate life that is already existing but dormant in the unfertilized egg.

The problem of the origin of life on earth has been so baffling that some scientists and philosophers have "passed the buck" by postulating the drifting of a few living germs through space from another planet. Prof. Svante Arrhenius, famous chemist, subscribed to this view before his death. But the difficulties of such a transfer are almost insuperable. The intense cold of outer space, the tendency of some of the necessary elements, notably oxygen, to diffuse out of the drifting germs, and the unimaginably long years of drifting that would be needed, if the matter were left entirely to chance, together with other obstacles, pile up a barrier too high for the imagination of most scientists to surmount. Besides, even if life did come here from somewhere else, the question would still stand: how did it get where it came from in the first place?

Most scientists prefer to believe that life originated here on our own planet, although with Darwin they do not profess to have any positive knowledge of how it came about.

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BIOLOGY

Reports of Artificial Life Viewed With Skepticism

Many Experiments Apparently Successful in Giving Life To the Non-Living Have Come to Naught

ARTIFICIAL life, made out of non-living stuff in the laboratory, is a dream as old as the alchemists' ambition to make gold out of lead. For this reason scientists view with interest, tempered with intellectual skepticism, the newspaper reports that have credited Dr. George W. Crile, Cleveland surgeon, with boosting the non-living across the line into the land of the living.

Many have been the apparent successes of the same experiment in the past. One of the most promising-looking and at the same time the most sensational of these efforts to make life in a test-tube was that of H. C. Bastian, who in 1911 put various non-living constituents in glass tubes, sealed them up, heated them to a point where no living thing could survive, and then let them stand in diffuse sunlight for several months. Gradually little particles of jelly-like stuff appeared in the tubes, some of them looking like fungi, some like yeasts, some like minute bacteria. These absorbed certain dyes in the same way that their "natural" models absorb them, and also reproduced themselves when fed on suitable substances. But they were only a nine-days' wonder to the public; only scientists remember them now.

More recently a pair of noted physiologists, Dr. D. T. MacDougal and Dr. Vladimir Moravsek, made an artificial cell, not claiming that it was alive. They

merely impregnated a paper thimble with a vegetable jelly, coated it with another vegetable substance found on the outside of cells, and lined it with a jelly containing some of the constituents of living protoplasm.

When immersed in water or solutions of various chemical salts, this artificial cell, non-living though it avowedly was, displayed many of the characteristics of life. It enabled its inventors to get a new insight into some of the mechanics of real cells, which was what they were after. As such it was a good laboratory tool. But it did not contain the "secret of life."

About a quarter of a century ago there was a great deal of excitement over the supposed "creation of life" by the noted physiologist Dr. Jacques Loeb. It annoyed him very much, for he had not created life. He had done a notable thing, however; he had caused unfertilized eggs to begin developing without adding any sperm or male element, simply by treating them with chemicals, pricking them with fine needles, and otherwise stimulating them.

Since that time many other scientists have repeated this work with variations. One has produced young sea-worms with no other father than an electric current. Another brought little frogs into the world that were half-orphans from birth, unless one is willing to call a steel needle their sire. But all these

ANIMAL HUSBANDRY

Better Animals Stocking Farms of America

BETTER and healthier farm animals are stocking American farms at the end of 1930 than ever before in history, the annual report of Dr. John R. Mohler, chief of the Bureau of Animal Industry of the U. S. Department of Agriculture, indicates.

This progress is attributed to the increasing use of purebred sires and the activities of breeders who are supplying improved types of animals in sections where the diseased and unthrifty stock are being condemned and culled. The bureau has contributed to this improvement through its activities in combating stock diseases, whose control has encouraged farmers to invest in better stock.

"The steady progress of tick eradication in the South is an important factor in the demand for well-bred cattle. Better health among farm animals is revealed by the rapid eradication of tuberculosis, the lowest prevalence of hog cholera in many years and improved methods of combating many other maladies," the report states.

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