



### Non-Survival of the Fattest

**I**SN'T IT odd, how animals reach their largest size just before they vanish from the earth!

Time after time, in the course of evolutionary history, the story has repeated itself. A group of animals start off, small and unassertive. It gets along all right, for several geologic periods, gradually growing larger and larger. Finally it winds up in a veritable orgy of giantism—and then becomes extinct.

The dinosaurs and their other reptilian relatives of geology's Middle Ages started out in life modestly enough. For quite a few millions of years there were no saurians bigger than Shetland ponies. The breed must have been well adapted to life conditions as they then existed on the earth, for it prospered, gradually becoming bigger. At last we had monstrosities nearly as high as a house, and stretching their almost interminable necks and tails out to over-all lengths of from seventy to ninety feet. Others went in for all sorts of fancy frills in the way of horns, bony collars and body spines. Very great gentlemen indeed they became. Then they died.

The same sort of thing happened to the titanotheres, great mammals that put in their first appearance some 75,000,000 years after the last of the dinosaurs had vanished. Their earliest genera were about the size of big dogs. Their development was steadily in the direction of greater bulk and more elaborate horns on their noses. The last titanotheres stood eight feet high at the shoulders, and had four horns apiece. Then they died.

While the titanotheres were running through their drama, a line of fairly close relatives, the rhinoceroses, were also developing. The biggest rhinoceros

that ever lived, so far as we know, was *Baluchitherium*, who lived in Baluchistan, stood seventeen feet nine inches high at the shoulders, and had very little sense. He died, survived by smaller rhinoceroses whose last dwindling herds are now jealously conserved by public authorities in the tropics, lest they become wholly extinct before the present century is out.

Elephants came later, and reached their heyday either just before or during the great Ice Age. They started small,

grew to be eleven-footers. These died, as did the slightly smaller elephants which existed in many species, until we now have only two kinds of elephants left on earth. These to be sure, are still large; we are only in the elephant's late afternoon, as compared with the deep twilight of the sad rhinoceros.

What does it mean? No satisfactory scientific explanation is yet forthcoming. But there does seem to be a sort of tendency on the part of many animal families to "swell up—and bust."

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### CHEMISTRY

## Has New War Gas Been Found? Chemists Ask of Chemical

**H**AS A NEW war gas been discovered? Chemists at the recent meeting of the American Chemical Society asked themselves this question as they discussed the new chemical reported in the division of organic chemistry. This chemical has a blistering action of the skin comparable with that of the dreaded wartime mustard gas.

Known by the polysyllabic name pronounced tri-chloro-tri-ethyl-amine, the highly irritating chemical is a new liquid compound reported by Kyle Ward, Jr., chemist of the Experiment Station of the Hercules Powder Company of Wilmington, Delaware.

Containing 25 atoms in its highly complex molecule, the new substance was made synthetically for "raw material," as Mr. Ward described it in an interview, out of which still larger molecules could be made. Whether these still-bigger compounds were in the nature of a new, unannounced explosive, Mr. Ward was unwilling to state.

The intense blistering properties of the new liquid were discovered accidentally, Mr. Ward said, when localized burns appeared on the skin of chemists making it.

The liquid is not corrosive in the sense of certain fluorine compounds which cannot be made in ordinary glass chemical test tubes and beakers and must be prepared in paraffin receptacles. Routine chemical laboratory equipment suffices in manufacture of the new gas.

While Mr. Ward was unwilling to speculate on possible military uses of the blister-producing substances chemists recall that mustard gas is also a liquid and that the formula of the new substance is essentially the replacement of

the sulfur atom of mustard gas by the element nitrogen.

Mr. Ward admitted that there was a marked similarity between the structure of his new liquid and that of mustard gas.

There will be speculation on the way the new substance might be used in wartime. The most commonly mentioned picture will be that of filling shells with the substance, as with mustard gas, which on explosion will spread the liquid widely in the form of tiny, microscopic droplets in a blister-making "fog." There is at present believed to be no intention to manufacture it with any military use in view.

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