

enough, or of motherly dogs that adopt kittens; but in the case reported by Miss Stanger a mongrel dog has adopted a full-grown cat and makes it play the role of a presumably lost puppy.

The two animals were both strays which came to the neighborhood, Miss Stanger states. "My photographs were taken on the third day of their acquaintance. They are friendly at all times except when food is put out, which the dog insists upon eating, forcibly keeping the cat at a distance while doing so. However, as soon as she has finished she shares with the cat in this fashion. . .

"As this is the only food the cat gets, it is a unique way of maintaining two pets on the food of one."

Science News Letter, March 25, 1933

ZOOLOGY

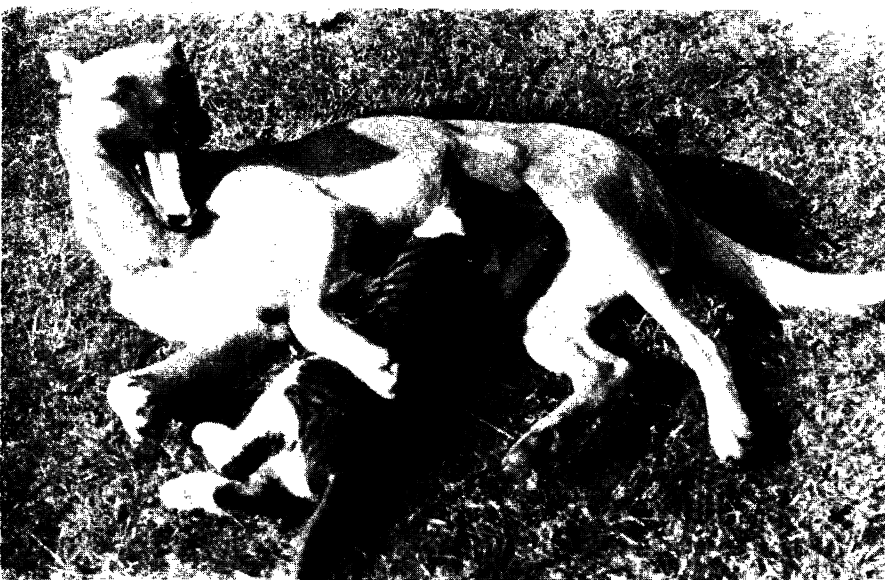
Cannibalistic Lizard Develops Forked Tail

A TWO-TAILED specimen of the leopard lizard was uncovered at Casa Grande National Monument, Arizona, in connection with road grading.

What caused the freak to sprout two tails instead of the customary one, is a matter of speculation. Superintendent Frank Pinkley, in charge of the southwestern national monuments of the National Park Service, suggests that the reputedly cannibalistic habits of this species of lizard might warrant the forked tail.

The two-tailed specimen now is on display at the museum of the Casa Grande National Monument.

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FRIENDLY EXCEPT WHEN THE DOG EATS

ETHNOLOGY

World's Return to Simplicity Is Declared Impossible

All Peoples Are Copying Western Ways; Will Not Give Up Material Things: "Man Would Rather Ride Than Walk"

HARASSED by the economic problems of a world leaping from one crisis to the next, there are some among us who wishfully predict a return to simplicity or who wistfully look to some other land as a refuge from the speeding western world.

A look at the future is presented in a recent book, *America's Tomorrow*, (Funk and Wagnalls), by Dr. C. C. Furnas, associate professor of chemical engineering at Yale's Sheffield Scientific School. America is leading a crusade of world uniformity which is enveloping the globe, Prof. Furnas contends in painting his picture of the era of the two-hour working day.

"We are not going to have the great variety of peoples and groups of customs which we now have," Prof. Furnas writes. "Each pure race on the globe, during its period of isolation, built up a series of beliefs, religions, social customs and crafts which were distinctive of the group and conditions in which they lived. We have come to attribute certain racial characteristics to each group, which first of all was reflected in the clothing. Clothing, all over the

world, is now merging into the standards set by Europe and America, and means of transportation and ways of doing things are rapidly following suit. In a relatively few years the modes of life will show no essential variations as we journey around the globe, and one of the really interesting phases of our existence will have passed away. It is a great pity, but it cannot be helped. However much freedom an individual may have as such, his race, whatever one it may be, seems doomed to be fitted into a relatively narrow pattern.

"What will the pattern be? Simplicity? Certainly not. We know how to make too many material things now ever to go back to a basis of simplicity. When we talk of what's going to happen tomorrow we must never forget the great fundamental principle that man would rather ride than walk. Poets moan for the mountains but stick to New York City. When it comes to the pinch, even Gandhi, the arch-enemy of modernism and the exponent of utter simplicity, has his appendix snipped out by Britain's best and most modern surgeons.

"Whether it is true or not, man, en masse, will always believe that it is best for him to have things and go places, and now that such a means of living has been found, through industrialism, it will never be relinquished. America leads in this industrialism, but this does not in itself close the door on other contributions.

"Where else can we go to find new peoples and places to set up experiments in new modes of living? Nowhere. Can the Orient come back in a second cycle and contribute something untried in manner of living and thinking? China, Russia and Japan certainly cannot. They are copying Western ways and Western science and rushing into the Western net as fast as they can urge their huge bulks.

"India? One often wonders about India. Sometimes it seems as if her chief function is (*Turn to Page 189*)

seems to me therefore established that it will belong to the not too distant future to isolate and artificially reproduce the most important members of the natural peptones and even the albumoses. But in order to handle a great number of single individuals in the very diverse combinations of the proteins the work of many hands will be necessary. Far more difficult is the problem, naturally, for the true albumins, since, for their reconstruction out of the first products of hydrolysis, wholly new methods must be produced, and even when these principles are established, their application in each separate case will most probably be a tedious work. We may therefore question whether the ultimate success will correspond to the labor spent. That in my opinion depends upon the use which biological research can make of it, and this is again limited by the means by which the synthesis will be effected.

If today, through a lucky accident, by the aid of a violent reaction, e. g., by melting together amino acids in the presence of a dehydrating agent, it should happen that a true protein should be formed, and if it were further possible, which is still more unlikely, that the artificial product could be identified with a natural substance, little for the chemistry of the albuminous substances would be gained thereby, and practically nothing at all for biology.

Such a synthesis I might liken to a traveller who passes through a country on a quick trip, and can tell scarcely anything further about it. The case is entirely different if the synthesis is compelled to go forward step by step and build up the molecule substance by substance, as was pointed out above for the polypeptides. Then it is like a foot traveller who seeks out his way step by step with intense attention, who must try out many roads till he has found the right one. He learns from his long, tiresome wandering not alone to know the geography and topography of the country, but he will also be conversant with the language and customs of its inhabitants. When he has finally reached his goal, he is able to find the right direction in every corner of the country, and if he writes a book about it, other people will be able to do so too.

I might therefore consider it an absolute blessing that synthesis has to devise many new methods of formation, recognition and isolation, and to study accurately hundreds of intermediate products, before it may reach the

proteins. For these methods will in the end serve not alone to produce all the proteins of nature and many more still than they have produced; they will presumably also serve to clarify the numerous and important transformation products of protein which play so great a role as ferments, toxins, etc.

We may shortly expect that through thoroughgoing and far extended synthetic work the whole region now still so dark will become a land of chemical culture from which biology can draw a great deal of the help which it needs for the solution of its chemical problems.

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ARCHAEOLOGY

Prehistoric Measuring Cups Studied in Vienna Museum

A PAIR of measuring cups used by some tribe that inhabited the Danube Valley in Bronze Age times, about 2000 years before Christ, have been presented to the National Museum of Lower Austria. So far as can be determined, they represent the only liquid measures of a people in the prehistoric stage of culture that have so far been discovered.

The two earthenware cups were excavated near Vienna about 19 years ago, but did not come into possession of the museum until recently. Dr. Friedrich Wimmer, struck by their similarity in shape and by their lack of resemblance to other pottery from the same locality, conjectured that they might be measures, and made an accurate examination of them.

They are both cylindrical in general outline, and each has a small handle near the top, very much like the handles of measuring cups in modern kit-

chens. The smaller of the two contains a trifle less than a sixth of a pint, and its larger companion almost exactly twice that quantity.

When these cups were in use in the prehistoric neighborhood of Vienna, the high civilizations of Egypt and Babylonia had elaborate systems of measurement; but so far Dr. Wimmer's investigations have not shown any definite relations between these two cups and their contemporaries to the southeast.

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From Page 181

to furnish the West with a supply of Yogi for the sole purpose of fleecing succulent ladies for silly lecture courses in unworkable hokum philosophies. Again, she seems best suited to keep the British lion alive by giving him something to worry about. Then again one wonders if India does not have something to say which is worthy of thought; but when one matches that idea with the squalor and wretchedness of many phases of Hindu life he turns away and faces west again. No, India seems doomed to sterility. The world will not look kindly upon her offerings until she pulls herself out of her (*Turn Page*)

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low material state, and this she probably cannot do except by Western methods, thus making herself a copier and not a contributor.

"The old sites of civilization—Asia Minor and the south shore of the Mediterranean—are rather stale peanuts as far as being world's leaders are concerned. The paucity of their mineral and agricultural resources precludes the possibility of their ever raising much dust in the world again. If these quarters could turn out a good second-edition Arabian Nights we might feel differently about the matter.

"The north shore of the Mediterranean has had its little ancient dance and is now buying Westernisms with every boat that comes. South America, South Africa, Australia, New Zealand! All living the ways of the West."

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Despite their names, Iceland has only 5,500 square miles of glacier; whereas Greenland is green only along a narrow fringe during a few months of the year.

A volcano museum is being established on the island of Martinique, in sight of the great volcano Mont Pelée.

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GENETICS

Ridding Beard of Roughness Saved Wisconsin Barley Crop

"OUT OF ROUGH and black, get smooth and white."

This problem, reminiscent of one of the ancient riddles of the Sphinx, confronted Prof. B. D. Leith of the University of Wisconsin, at one stage of his endeavor to produce a new strain of barley that could be grown with profit by farmers in Wisconsin and other Grain Belt states.

It was not so impossible a task as it might sound, for he had already put the smooth and the white qualities into the genetic mixture where they were covered over by the rough and the black. All he had to do was plant his cross-bred grain and let the old reliable Mendelian mode of segregation work.

To go back to the beginning: Wisconsin farmers used to raise a strain of barley known as Oderbrucker. It was good barley, good for stock feed and good for the once-great Milwaukee brewing industry. But it had one fatal drawback: the beard on its heads was armed with innumerable little back-pointing barbs that would cause these bristly hairs to work their way through the threshermen's overalls, and made life so miserable for them that they finally rebelled at working with it at all. Also, it was subject to a destructive fungus disease known as stripe.

Seed From Russia

Prof. Leith set to work to produce a hybrid barley that would have a smooth beard, and if possible be stripe-resistant, yet preserve the virtues of Oderbrucker barley—good white grain, high yield and stiff straw. His first crosses, with other strains of domestic barley, were not very successful. But in 1917 a new smooth-bearded barley from Southeast Russia was brought in. It was black-grained, but that did not bother Prof. Leith, for he was sure he could juggle the undesired color character out of the hybrid strains he would produce.

When he crossed Oderbrucker with the new Russian barley the first generation offspring were as undesirable as could be imagined, for the beard was as rough as in Oderbrucker and the grain was black as in the Russian barley.

Here, then, was his Sphinx-riddle; out of black and rough to get smooth and white.

Prof. Leith, like all good students of Mendelian behavior in heredity, knew that the blackness and roughness were "dominant" characters, in any mixed strain hiding but not destroying their "recessive" opposites, whiteness and smoothness. He knew also that such recessive characters segregate out when the hybrid first generation is inbred.

One in Sixteen

This he did, and the second generation barleys came out in approximately the following ratio: 9 rough and black, 3 rough and white, 3 smooth and black, 1 smooth and white. The last, a hybrid containing only recessives in its pairs of characters, was what he was hunting for; and he knew also that so long as it was inbred neither roughness nor blackness could reappear.

This smooth-white strain forms the basis of the barley strain now known as Wisconsin Barbless, Pedigree 38. In several years of practical crop growing by a large number of farmers, some of them outside the state, it has out-yielded Oderbrucker, resisted drought, and proved highly resistant to stripe, though not to other diseases. Most important of all, its smooth beard makes it possible to harvest and thresh the new barley without making life a burden for the farmer or the threshermen.

With an eye to the eventual return of beer, the owner of one of the most famous of the old-time Milwaukee breweries has made large-scale tests of the malting qualities of the new barley at his own expense, and reports that so far as its chemical makeup is concerned it is at least the equal of the best of the old barleys.

Science News Letter, March 25, 1933

Girls of ancient Greece jumped rope, it is believed, judging from a somewhat damaged figure on a broken tablet.

Diamond-back rattlesnakes grow as long as eight and one-half feet; larger specimens have been described, but science waits to be "shown."