

# East Africa And Its Future

An important document has just been published in London. It is the report of a government commission, headed by Sir H. H. Johnston, which was appointed a year or so ago to study the future of East Africa. It is a long and detailed report, which will be published in a few days. It is a document of great importance, and one which will be read with interest by all those who are concerned with the future of East Africa.

# Auntie Makes a Helpful Suggestion

(Pauline Herr Thomas)

Auntie May was spending the day at Jeanne's house. The two had just stepped out for a walk when they met Baby Louise and her mother. They were about to start on after chatting a moment when Jeanne asked Auntie to wait a few minutes. She ran back into the house to return presently with her brand new "bye-lo" doll in her equally new carriage.

She had a moment of indecision when she saw Louise, her face beaming, running joyfully to it, shouting, "Louise push, Louise push," but she came on toward the group with her prize possession, and though looking somewhat rueful, allowed Louise to catch the handle of the carriage. In a moment Louise had abandoned the idea of pushing and had taken the doll in her arms, but as quickly Jeanne took it from her, anxiously, and carefully replaced it while she warned, "Mustn't touch the dolly, Louise, only push."

Louise's momentary joy of possession made her eager for more, so again she dragged the dolly from her covers and again Jeanne recovered her, this time to rush into the house with her treasure, leaving only the carriage, which of course no longer satisfied Louise. There followed shrieks of dismay while her mother, the unspoken words, "How selfish!" plainly written on her face, tried to comfort her.

Auntie May said nothing, as she felt that a discussion of the conduct and traits of her niece was imminent, and she objected to discussing them with a neighbor.

Because Jeanne was an only child and because she had always been

showered with beautiful toys, every one predilected selfishness except Auntie May. For the moment, however, Auntie May became a bit troubled. "It did appear selfish," she thought, "but then, Jeanne has always been painstaking, quite beyond her years, to keep her toys in good condition. I can't believe it was pure selfishness."

When they were once more at home and Jeanne was playing happily with her doll, Auntie May said, "You love your dolly, don't you, dear?"

"Oh, yes! better than all my other toys."

"She is such a lovely dolly. Baby Louise loved her, too, didn't she?" continued Auntie May.

"But Auntie! I was so afraid she would let her fall!"

"Well, of course, Louise is too little to think of being careful. She could play better with Raggedy Ann, couldn't she?" suggested Auntie May.

"Oh, yes! she can have Raggedy Ann any time. I don't mind who plays with my toys if they will only be as careful as I am. You know Arlene broke my big dolly and Jackie smashed my washing set, and—"

"Of course, Arlene was too little to play with your big dolly and Jackie was a boy and did not know just how to play with a little girl's washing set."

"Well, I just won't take my dolly out when Louise is there, any more. She can have my balls and blocks and such things, and I'll let Evelyn and them play with my 'bye-lo' dolly,—they're bigger, you know."

"Hardly a selfish decision and surely a justifiable one," thought Auntie May. "It's just as easy to be sympathetically suggestive as to be hastily condemnatory, and very much more profitable."

# A Queer One

## The Radish-Cabbage Wedding and Their Family of Cabbishes and Radages

A round little radish lived with her husband, who was also her distant cousin, a big round cabbage, in the garden of a Russian scientist, Dr. Grigori D. Karpechenko. He had officiated at their wedding, and now he kept track of their progeny. Whether to call the hybrid plants resulting from this crossing of two cousins of the vegetable kingdom "radages" or "cabbishes" is a problem, we learn from an account of the experiment by Frank Thorne in NEA Magazine and Science Service. Reading on:

A queer posterity it was. In our neighbor world of plants and animals there seems to be a prejudice against marrying too far out of the family. Mate a donkey and a horse, and you get nothing but mules. Mate a carrot and a beet, and you get—nothing at all. The relationship is too remote.

For the breeder the rule is, always, mate your matings relatively close; the more distant the cousinship the less chance you have of obtaining offspring, and the less chance the offspring you do get have of amounting to anything.

There are a few good hybrids that have become standardized—the mule, for example—but for every success resulting from these out-of-the-family matings there are thousands of failures. The great majority of hybrids are worthless.

It was so with the radish-cabbage wedding that took place under Dr. Karpechenko's hand in the garden of the Institute of Applied Botany of Detskoe Selo, near Leningrad. The offspring were neither cabbages nor radishes, but merely queer rosettes of leaves.

They did not make cabbage heads above the ground nor radish roots beneath. In fact, they resembled, outwardly at least, the tufted little annual cabbages that still grow wild on the cliffs along the North Sea shores. That is the fate of many hybrid crosses; they produce what look like "throwbacks."

Yet in spite of the unpromising looks of the radish-cabbage children, Dr. Karpechenko cultivated them carefully, sowed seed as they formed, and took tender care of the grand-children plants also, though they turned out no better than their parents from a gardener's point of view.

Why? What good reason could a geneticist in a government Institute of Applied Botany give visiting officials, who were not scientists, for using good ground to raise such weeds?

Well, for one thing, Dr. Karpechenko had done a thing rated as almost impossible; he had made an "intergeneric cross." And no matter how useless they may be, the offspring of an intergeneric cross are such great scientific curiosities that their mere existence is sufficient justification in itself.

They are scarcer than two-headed calves or mathematical horses, only once before in the history of plant breeding do we come upon a record of a cross between a radish and a cabbage. That was made by an American, Dr. G. F. Gravatt of the U. S. Department of Agriculture, back in 1910; but unlike the present hybrid it was completely sterile and left no descendants. So on the basis of rarity alone the job was justified.

To most of us, a hybrid between a radish and a cabbage may seem no more remarkable than that common place cross that provides us with mules. But there is a difference, and a big one. For the mule and the

horse are distinct species, to be sure, but nearly related and belong to the same genus; whereas cabbages and other, are at best quite distant cousins radishes, though still related to each and belong to different genera.

According to the naturalists, a species is made up of individual plants or animals quite similar in hereditary make-up, and usually also in appearance, unless breeding and selection have split it up into distinguishable varieties. Thus, all black oaks belong to one species of oak, and all white oak to another; and in nature all black oaks look more or less like each other, as do the white oaks.

All dogs are of the same species, but here artificial breeding has split the species up into separate varieties or breeds, ranging all the way from Pomeranians and Mexican hairless to St. Bernards and Newfoundlanders.

Similarly artificial breeding has split up the original cabbage stock into Brussels sprouts, kohlrabi, cauliflower and several distinct varieties of true cabbage; but these are all children of one species, all varieties of the original stock, known to botanists as *Brassica oleracea*.

You can put your finger down on almost any part of one of these new "radages"—or "cabbishes." If you prefer to call 'em so—and pick out, here a radish character, there something of unmistakable cabbage origin, Mr. Thorne remarks as he proceeds.

The leaves, for example, have more of the radish shape and arrangement. They never try to head up, but remain as a loose rosette rising a little above the ground. The nearest they come to being a cabbage is to look a little like their old wild ancestor.

But though radishy in shape, they are less hairy than typical radish leaves. This habit of forming only a rosette of leaves near the ground persisted in the second generation or grand-children of the original cross, even though these were again crossed with head-forming varieties—cabbage and Brussels sprouts.

The roots of the hybrids were plainly enough hybrid roots. They were not thickened up into the nice edible globes or spindles that radishes make, but neither were they so strictly thin and fibrous as the roots of regular cabbages. Even in the second generation crossings with cabbage this trace of the radish in the roots still persisted.

When they came to produce their flowers, the hybrids again favored both sides of the house. They produced big, bushy growths of stalk, rather more than either parental type usually grows, and these stalks were heavily laden with white flowers, intermediate in size and shape between cabbage and radish flowers.

Inside, the stalks tended to be like those of the radish, for they were hollow, and the cabbage stalk is typically solid.

One unusual feature about the flowers in the hybrids with extra chromosome counts was the tendency to produce extra stamens. The normal stamen number in both radish and cabbage is six, but in these plants, so unlike their type, there were sometimes eight stamens.

Perhaps the oddest thing about the structure of these cross-bred plants, and at the same time the most easily noticed, is the way the seed-pods are put together. Cabbage seed-pods are long, slim affairs, opening on the sides with a pair of trap-doors running down the whole length, and shedding their seeds through these openings. Radish seed-pods are thick and stocky, with a tapering tip; they have no natural mode of opening at all, and release their seeds only when crushed or decayed.

The pods of the hybrids are of about the same size and shape as radish

# Is It a Laugh or a Growl?



GENIAL SEA LION WAS TOLD TO LOOK PLEASANT  
A pet in the London Zoo was in an accommodating mood when the photographer asked him to pose and he exhibited the wide smile for which he has become famous.

# Fish That Build Nests

Some fish can fly, so it seems only fair that some others can build nests. But fish-nesting has never become the favored occupation of naturalists and small boys that bird-nesting is. Indeed, it may be doubted whether Isaac Walton himself knew that many species of fish guard their nests as carefully as the birds do. The young fry are hatched and the young fry are hatched on their careers. But we learn from Leon Bertin, who writes in *L'Espresso Mensuel* (Paris), some fish "build nests more or less analogous to those of birds. These nests the writer divides into seven classes: Nests selected by chance, prepared nests, excavated nests, woven prepared nests, living nests, "beads" and classifications, we learn:

The nest selected by chance is a natural cavity, suitable to its needs, found by the fish and adopted without modification. It may be a crevice in the rock, the under side of a stone, an empty shell or a submerged old shoe or fragment of pottery. The eggs are laid in a mass or else deposited side by side in a uniform layer. Such nests are used by many fish of the littoral and benthic fish.

The lump fish is found on the coasts of Scotland and Norway, and has a length of from twenty to twenty-four inches and a proportionate width. It lays about 100,000 eggs at a time in a mass as large as a child's head. The male takes care of the egg mass dur-

# Rural England Combines Business and Pleasure



WHEN HUNTSMEN AND FEEDERS MEET  
Huntsmen, hounds and fatstock in the market place at Edenbridge, Kent, at Old Surrey and Burslem Hunt.

# Laws of Electricity Linked With Gravity Laws by Einstein Theory

## New Work of Great Physicist Extends Relativity Theory to Electrodynamics, According to Summary Given by Berlin Mathematician

Berlin.—Dr. Bruno Gorchardt has given the Associated Press a summary in popular terms of the new discovery of Prof. Albert Einstein, whose mathematical formulae have been prepared for presentation to the Prussian Academy of Sciences. These findings have not been published, but friends of the discoverer of relativity, in this capacity and electrodynamics a further great advance in the field of physics.

Dr. Gorchardt is the author of numerous treatises on mathematics and physics, having been formerly an official in the Ministry of Education. His explanation of the new Einstein theory follows:

"The conception of so-called classical physics—that each body through its mass exerts a force in space—a certain effect known as gravitation. In the relativity theory, gravitation is explained by the conception that gravitation manifests itself only in its immediate surroundings of the said body in its so-called gravity field of areas."

"According to this theory each body, with its gravity area, acts upon space in such a manner as to shape or reshape it. In other words, space can be something absolute, such as time used to be regarded by us."

"Bodies must accordingly derive their movements from peculiarities of their gravity areas rather than from a general interaction of gravity of all bodies upon each other. Similarly, the presentation to the Prussian Academy of Sciences. These findings have not been published, but friends of the discoverer of relativity, in this capacity and electrodynamics a further great advance in the field of physics."

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# No 'Moral Boundary' Here

In his notable address recently delivered in Albert Hall, London, the Prime Minister of Great Britain, Mr. Stanley Baldwin, offered a new formula which ought to be accepted as fundamental in the relationship of all civilized nations: "The moral boundaries of countries no longer march necessarily with their political and physical boundaries. They overlap, and all forms of international cooperation are springing up to-day in the most unexpected places."

This broad vision of the moral position of nations should be kept clearly in thought by those concerned in the negotiations recently at Ottawa for the strengthening of the existing treaty between the United States and the Dominion of Canada so as to check the notorious smuggling of liquor into the United States. The relations between these two great nations were never closer nor more amicable. This long line of undefended frontier is pointed to continually as an evidence of the way in which nations may maintain friendship and national security without the employment of forts or ships of war. No political ambition on either side of the line arises to mar in the slightest degree this sense of amity. Only the lust for profit—illegal and indefensible profit—always characterizes those who engage in the traffic in intoxicating liquors, appears like a cloud on the international horizon portending a storm.

It may be, as Canadians interested in this traffic insist, the duty of the United States to enforce its own laws without appealing to a neighboring nation for aid. But it is sufficiently evident that a fleet of rum runners on one side of the Detroit River, and a fleet of customs officials on the United States side, determined to block their efforts, is a continuing menace to peaceful relations. With the increasing determination of the people of the United States to enforce the prohibition law, the moment will undoubtedly arrive when some Canadian bootlegger may be summarily dealt with by an American officer in Canadian waters. It is clear to all to what such an apparent invasion of national rights might lead.

It would seem the more easy for the Dominion authorities to acquiesce in the desire of the United States Government for a treaty for the suppression of this trade because the Canadian provinces themselves either prohibit the sale of liquor, or make it a government monopoly. From this monopoly only liquor intended for export is free. If it is to be sold for consumption in Canada it must be through the provincial distributing agencies established under varying laws in the different provinces. If all manufactured intoxicants could be treated alike, irrespective of the purchaser sought, all would go from the distillers or brewers into the control of public officials. Under such conditions it is hardly likely that the Province of Ontario would set itself up in the bootlegging business.

Morally the issue seems clear. If Ontario does not purpose to expose its own citizens to the unrestricted activities of the manufacturers of liquor intent upon forcing their product upon the people, it ought not to be a party to their efforts to force it upon the people of a neighboring and friendly state. Despite the diplomatic difficulties, and notwithstanding the endeavors of those engaged in manufacturing intoxicants for unlawful trade, it may yet be believed that the representatives of these two great nations will reach a harmonious conclusion for the termination of the situation so full of danger to both parties. Stanley Baldwin's words apply with compelling force.—*Cristian Science Monitor*.

# Victor and Conquered

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# Smith's Song

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