

killed. Outside of that, the general public, however much excited and interested, was decidedly impeded in its every-day work.

"The accidents to machines and drivers were so numerous as to be impossible to record. I will only say that in attempting to pass a machine ahead, one of the two German automobiles, owing to the dust cloud, and perhaps to defective steering, was run into a tree and ditched, and one of its occupants had a broken arm, leg, skull, and ribs, and will probably lose one eye.

"Taking it 'by and large,' this race has probably done more harm than good to the entire automobile industry. It has demonstrated (at the cost of two human lives and many thousands of dollars) that the machines are dangerous and unreliable at high speeds, . . . and the entire poetry of the thing—what little there was—has been taken out of it. The real value of the automobile has been shown to be in its adaptability to slow and reasonably rapid conveyance on ordinary roads under ordinary conditions of traffic, and builders will do well to 'get in out of the wet,' and stop building machines for races which are torture to those taking part and dangerous both to competitors and spectators—and which, furthermore, in all probability, no government will allow to be repeated."

CAN CATTLE TRANSMIT CONSUMPTION TO HUMAN BEINGS?

CATTLE are peculiarly prone to tuberculosis, and it has always been supposed that their form of the disease was the same as that to which the human race is subject. On this belief rest all the precautions that are being taken to-day by boards of health to see that men, women, and children do not contract disease by eating the flesh and drinking the milk of tuberculous animals. Something of a sensation, therefore, has been created by the statement of Dr. Robert Koch, the German expert, before the Tuberculosis Congress in London, that tuberculosis in man and tuberculosis in cattle are radically different diseases. That cattle can not take the disease from man, has, he says, been absolutely proved, and he believes that the converse is true. If so, what has been supposed to be one of the chief sources of contagion is shut out, and it should be easier to rid ourselves of the scourge than has been thought. Dr. Koch believes that this is the case. The importance of this discovery, if it is to be accepted, is of course very great. It was thus commented upon by some Washington scientific experts, according to a despatch in the *New York Herald* (July 24):

"The importance of the discovery is recognized as being twofold. It not only does away with the fear generally entertained that tuberculosis may be contracted by persons consuming meats or milk from animals affected by the disease, but it will probably lead to a modification of the existing regulations providing for the destruction of such meats and milk. For this latter reason the subject is one in which the Department of Agriculture takes a lively interest.

"The Secretary of Agriculture, Mr. Wilson, fully recognizes the importance of the discovery and its possible effect upon the regulations of his department, as well as upon the restrictions imposed by the German and other European governments on American meats, on the ground that there is danger of the introduction of tuberculosis by allowing them to be imported."

Dr. Alonzo D. Melvin, the acting chief of the Bureau of Animal Industry, said:

"I shall be much interested in obtaining full details of Professor Koch's discovery and learning the methods of investigation by which he reached his conclusions. It would seem to be very difficult for him to have arrived at positive results without experiments on human subjects, which he can not have made. It may be, however, that he has had opportunities of observing persons who have consumed meat and milk from animals which it has been discovered subsequently were affected with the disease. In our work we have acted on the theory that the disease could be communicated to human beings, and the regulations of the department have been framed on that theory. That it can be

communicated to other lower animals is not disputed by Professor Koch, and our experiments have shown that it can be. We have recently been conducting a series of experiments with a herd of cattle near Washington which had become affected by the disease. The report of these experiments has not yet been received at the department, but they have shown that the disease can be communicated to other lower animals, such as guinea-pigs. These animals, when fed with milk from the diseased cows, have developed tuberculosis."

In the congress itself, and among experts abroad, Dr. Koch's announcement has been received with a good deal of skepticism. Dr. Paul Brouardel, of Paris, who read a paper urging international legislation for the prevention of the disease, openly expressed his disbelief in the truth of the report. In an interview published in *The Daily Mail* (London), Lord Lister is represented as having said 'that he was absolutely unable to believe the statement of Professor Koch that human beings could not get consumption through drinking the milk of diseased cows, the evidence to the contrary being far too overwhelming. Henry Chaplin, who presided over the congress on July 24, is stated by *The Tribune* (New York) to have been "so astonished by this revolutionary doctrine that he blurted out the truth that the Government, which had been zealous and fussy in enforcing sanitary regulations against foreign cattle and meat, has not been equally rigorous at home. He frankly confessed that when it was notorious that thousands of British cattle, even those of the best breeds, had tuberculosis, he had not understood how anybody was left alive in England. The mystery," he added, "was explained if the theories of the officials were incorrect and tuberculosis could not be communicated from animals to man."

Boards of health are of course reluctant to admit that the precautions they have been taking are useless, and the general impression seems to be that these will continue to be necessary even if Koch's contention be accepted. Says the *Philadelphia Press*, in an editorial (July 24):

"By 1895 the civilized world had by legislation and executive order entered on the suppression of tubercle in cattle supplying milk and the prohibition of the sale of the meat of such cattle. Public utterances by commissions engaged in this work were, naturally, much more emphatic than the statements of scientific men. In 1895 an English royal commission summarized the facts by saying:

"'We have obtained ample evidence that food derived from tuberculous animals can produce tuberculosis in healthy animals. In the absence of direct experiment on human beings, we infer that man can also acquire tuberculosis by feeding upon materials from tuberculous food animals.'

"From that day to this that has been all that could accurately be said. The New York State Board of Health said, September 19, 1896, with nearly equal accuracy, that 'a living germ called the tubercle bacillus is the only cause of tuberculosis. Milk of cows which are tuberculous may contain these living bacilli and may cause the disease in human beings who use it. . . .

"The chief evidence of the transmission of tubercle from cows to human beings has rested on the cases of children. . . . The strongest proof was summed in a report lately made to the British Medical Council that 'the mortality from tuberculosis in early childhood is not decreasing as at other ages, and the opinion that this is due to infection by milk appears well founded.'

"Meanwhile laboratory evidence accumulated that the human and bovine bacillus were not identical in shape, tests, or increase. Cattle are relatively insusceptible to human tuberculosis. It is extremely probable that Dr. Koch has carried this to full proof and developed the difference to be one of species. If, however, tuberculosis can not furnish bacilli which gives human beings the disease, the cattle bacilli render cattle diseased. Infection once begun infects the entire herd. . . . Unless people choose to eat diseased meat and drink milk with bovine tubercle containing, as was found in Boston, 80,000,000 germs to the tumbler, tuberculous cattle must continue to be sternly destroyed."

The medical point of view is well represented by the following

extracts from an editorial in *The Medical News* (New York, July 27) :

"The belief that bovine tubercle bacillus is incapable of inducing tuberculosis in man is, of course, by no means new. For years there have been advocates of this side of the question.

"As a matter of fact there is an abundance of clinical evidence which indicates this capacity. Thus, Tscheving, of Copenhagen, in 1888 reported a case in point. The sufferer was a veterinary surgeon who wounded his finger while making an autopsy on a tuberculous cow. Local tuberculosis in the wounded part developed in a short time. Lefèvre collected other equally striking examples which would be very difficult of explanation if our present view is incorrect."

CULTIVATION OF INDIA-RUBBER.

THE enormous consumption of india-rubber due to its use for tires, and in many new ways incident to mechanical progress, has caused some people to fear that we might have a caoutchouc famine. So far, however, it seems only to have stimulated projects for discovering new rubber-yielding plants and for cultivating them in plantations instead of relying wholly on wild growths. As yet, these plans have come to little, but they promise much for the future, and there is in them more than one suggestion for our own tropical colonies. A writer in the *Revue Générale des Sciences* (Paris) writes as follows regarding them :

"Until recent years caoutchouc was considered purely as a forest product and could not be classed among agricultural productions. Even at present, notwithstanding an annual production exceeding 42 million kilograms [46,000 tons] for the entire world, caoutchouc is almost wholly furnished by plants that grow wild in the woods; but, in the presence of a consumption that grows continually, we must solve the problem of rational cultivation, not only to assure the future production necessary to industry, but also to lessen as much as possible the cost of preparation and to obtain a more homogeneous product.

"Brazil alone furnishes more than half of the caoutchouc of commerce, and this is produced by different species of the genus *Hevea*; by the *Castilloa* and by a *Manihot*. But the trees of the genus *Hevea* are chiefly exploited in Brazil and furnish the rubber that is held in the greatest esteem. According to Eugene Ackermann we need not fear that these trees will disappear from the Brazilian forests, for, contrary to what is done in Africa, the collectors do not destroy the trees; they only make incisions in them at stated intervals."

It will be to the interest of those engaged in the industry to cultivate trees, thinks Mr. Ackermann, but not so much because the supply is diminishing as on account of the difficulty and danger of collecting the gum in the tropical Brazilian forests. In 1896 the state of Para established prizes for the encouragement of india-rubber plantations, and several other states of Brazil have followed suit. Says the writer :

"These prizes have had very little effect, so far, and at present there are in Brazil only a very small number of plantations that are worth taking into account. Our [the French] tropical colonies may then undertake with profit, and without fear of serious competition in the near future, to create and develop plantations of india-rubber plants. Trials have already been made along this line in recent years, and numerous plantations are under way in our various colonies. It is to be regretted, however, that these enterprises do not depend on previous experiment, which an administration careful of the economic future of these possessions ought to have made long ago through the botanical and agricultural staff of the colonies.

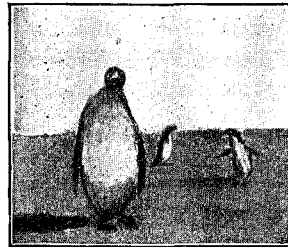
"All that concerns the existence of the vegetable producers of caoutchouc is of the first importance, and we therefore note that recently M. Vadon, a station chief in French Kongo, has sent home a botanical specimen of *Kickxia gillettii* accompanied by some caoutchouc of good quality. This is interesting, because the plants of this genus found hitherto in the Kongo have given a product of inferior quality. . . . We may perhaps have here the means of increasing the production of caoutchouc in our col-

ony, which was only 657,000 kilograms for 1899, while the exportations from the Kongo Free State reached 1,734,305 kilograms in 1898."—*Translation made for THE LITERARY DIGEST.*

THE MONARCH OF ALL THE PENGUINS.

IN an article on "The Fauna of the South Pole," giving the results of recent explorations within the Antarctic circle, M. E. G. Racovitz describes in the *Revue Scientifique* (July 6), the Emperor Penguin, perhaps the most curious of all his tribe. We translate the few paragraphs that tell of this lordly bird. Says M. Racovitz :

The Emperor of the Penguins (*Aptenodytes Forsteri*) well deserves this flattering title. His height reaches 1.10 meters [3



EMPEROR PENGUIN.
(Front View.)

feet 7 inches] and his weight 40 kilos [88 pounds]. His black head has a greenish luster and is relatively small; it has a long black beak with one blue and one scarlet stripe. The back is of somber color with blue spots, and on his vast breast extends a white apron with golden luster. He bears proudly an orange-colored mark on either side of his head, and two small black epaulets are fastened to his shoulders. Solidly planted on the

tripod formed of his large palmate feet and his tail of solid and flexible feathers, he lets his wings drop negligently at his sides like huge arms. His neck slightly bent, his beak pointed straight forward, his eyes half closed—thus appears the Emperor of the Penguins in the majesty of his corpulence and his quietude. For long hours, on the banks of free channels of water, protected by a hill of ice, he gravely digests the innumerable Schizopods with which he has filled his paunch, and as he has no enemy and nobody dares to attack his obese majesty, he cares not what goes

on about him. We were much humiliated by the extraordinary disdain with which he saw us approach. He did not even take the trouble to look at us, and our touch was responded to only by contemptuous pecks. But the scene changed when we attempted to seize him; he distributed blows freely with his great wings, and it was a hard job to overpower him. He was marched away slowly over the ice, placing one foot reluctantly



EMPEROR PENGUIN.
(Rear View.)

before the other. His great body oscillated at each step; his head, sunk on his shoulders, followed the movement, while his tail traced a mark in the snow. Seen from behind, while he walked thus on his short legs, which were scarcely visible under his fat body, he could easily have been taken for a very feeble, fat old gentleman.—*Translation made for THE LITERARY DIGEST.*

A Destructive Fungus.—A parasitic fungus that destroys trees and the beams and cabinetwork of houses and other buildings is causing alarm in Europe. According to *Génie Civil* (Paris), the fungus is making trouble chiefly in Germany, Austria, and Russia. It propagates rapidly in any wood that contains its germs, destroying the wood completely and making it necessary to replace at once all affected timber. Professor Henry, of the Nancy School of Forestry, attributes the trouble, says the paper just noted, to "the improper and hasty manner in which the lumber trade and the work of building construction are at present carried on." The *Merulius lacrymans*, which is the botanical name of the fungus, appears, in a favorable medium such as a damp cellar, as white threads, issuing from the wood and spreading themselves over its surface. The germination of its spores is aided by alkaline liquids. The fine threads easily penetrate wood in all directions, and may continue so to do for