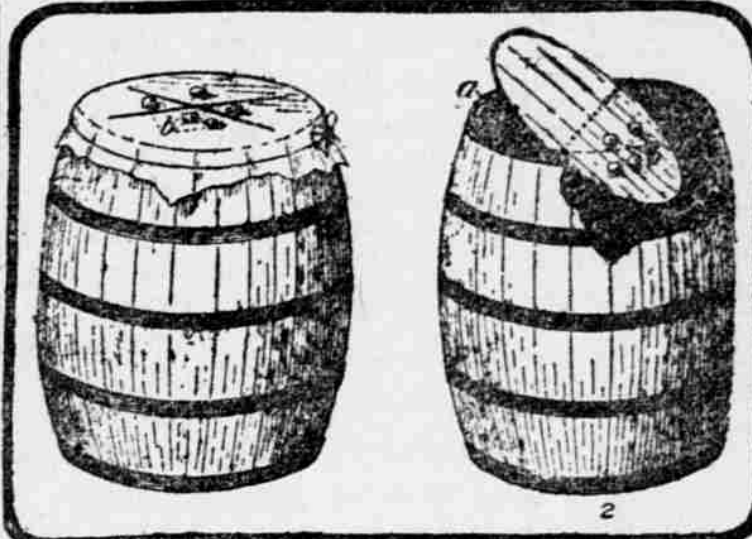
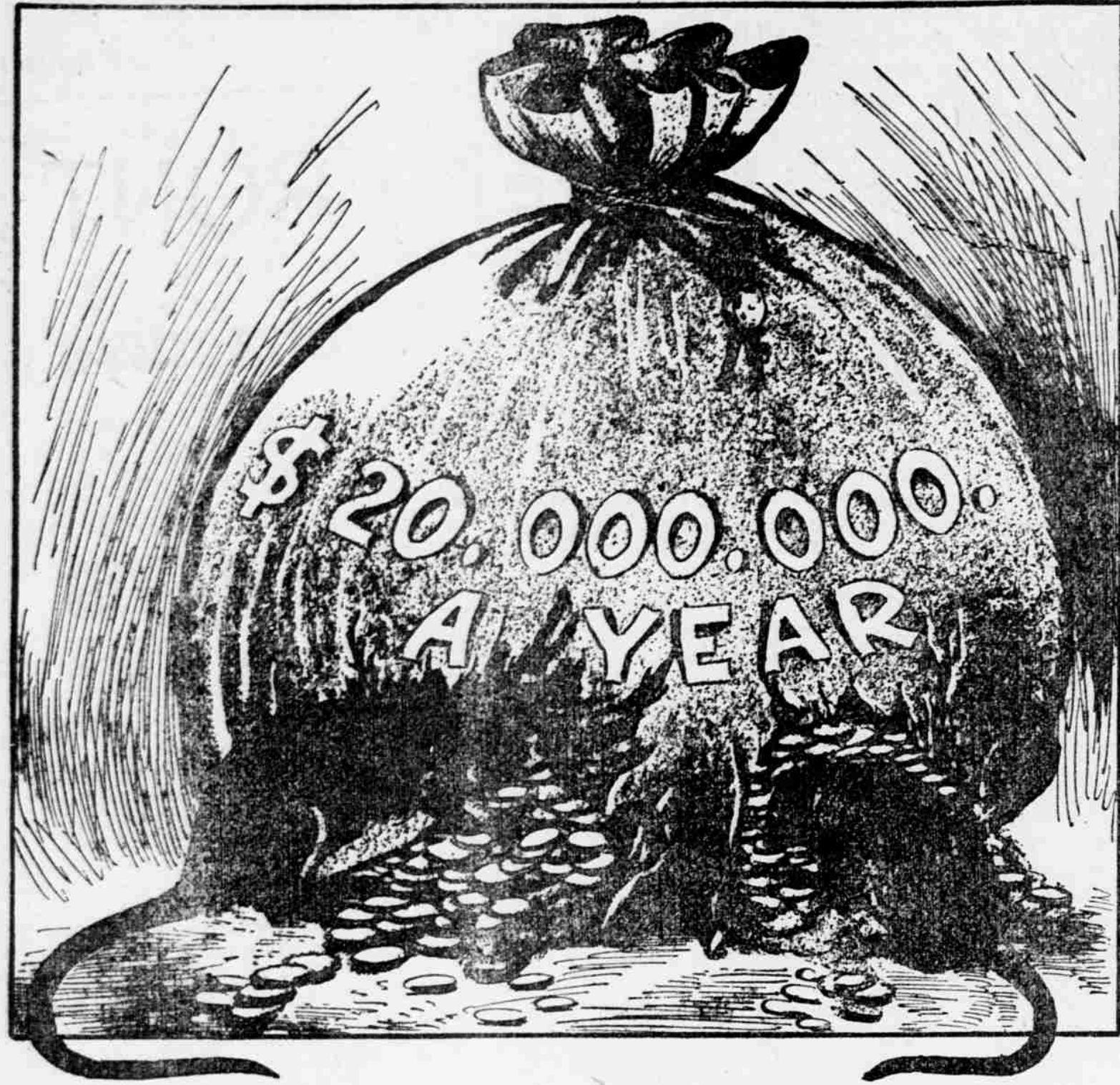


# NATIONS OF THE WORLD DECLARE WAR ON RATS



BARRELS COVERED WITH STIFF PAPER COVER (1) WITH RINGS BARRELS COVER (2)

**DAMAGE BY RATS.**

The estimated damage done by rats in the various countries is as follows:

Denmark	\$ 3,000,000
France	40,000,000
Germany	50,000,000
Great Britain	73,000,000
United States	20,000,000
Mexico	15,000,000
Canada	2,000,000

**dependent upon the disease in the rat.**

"The infection is conveyed from rat to rat and from rat to man solely by means of the rat flea.

"A case of bubonic plague in man is not in itself infectious.

"A large majority of plague cases occur singly in houses. When more than one case occurs in a house the attacks are generally simultaneous. (This proves that there is no soil infection.)

"Plague is usually conveyed from place to place by imported rat fleas, which are carried by people on their persons or in their baggage. The human agent not infrequently himself escapes infection.

"Unsanitary conditions have no relation to the occurrence of plagues except in so far as they favor infestation by rats.

"The non-epidemic season is bridged over by acute plague in the rat, accompanied by a few cases among human beings.

"Rats have been fought all over the world with renewed effort since this discovery has been made. The government on the Pacific slope has taken up the fight and has exterminated millions of the rodents.

"Except that to a limited extent rats act as scavengers, they render no important service to man.

"In former times, doubtless, their work as scavengers in cities was of considerable value, but modern methods of garbage disposal make this service insignificant.

"Among the methods for driving away rats that have proved useful under some circumstances are the following:

1. Freshly slaked lime placed dry in all burrows and runs of rats.
2. Freshly made thin whitewash poured into the rat burrows.
3. A strong solution of copperas sprinkled in runs and burrow entrances.
4. Chloride of lime, loose or wrapped in old rags, placed in burrows and runs.
5. Gas tar daubed about the burrow entrances.
6. Powdered red pepper scattered in rat runs and burrows.
7. Caustic potash placed in the burrows and runs.

"Owing to their cunning it is not easy to catch rats by trapping. A few adults refuse to enter the most innocent looking trap. And yet trapping if persistently followed is one of the most effective ways of destroying the animal. For general use the improved modern trap with a wire fall released by a baited trigger driven by a coiled spring has marked advantages over the old trap, and many of them may be used at the same time. Probably those used entirely of metal are the best, as they are less liable to retain odors.

"Vienna sausage (Wienerwurst) and fried bacon are the best baits, and a part of an ear of corn is very attractive to the animals. In fact, they will attack anything edible that is offered them.

"The French wire cage traps are very good, where rats are numerous. All cage traps should be baited and left open for a few nights so that the rats become accustomed to enter them in the search for food. As many as twenty-five partly grown rats have been caught at one time with one of these traps."

**SUMMARY OF RECOMMENDATIONS.**

The following are important aids in limiting the number of rats and reducing the losses from their depredations:

- 1—Protection of our native hawks, owls, and smaller predatory mammals—the natural enemies of rats.
- 2—Greater cleanliness about stables, markets, grocery stores, warehouses, courts, alleys and vacant lots in cities and villages, and like care on farms and suburban premises. This includes the storage of waste and garbage in tightly covered vessels and the prompt disposal of it each day.
- 3—Care in the construction of buildings and drains so as not to provide entrance and retreats for rats, and the permanent closing of all rat holes in old houses and cellars.
- 4—The early thrashing and marketing of grains on farms, so that stacks and mows shall not furnish harborage and food for rats.
- 5—Removal of outlying straw stacks and piles of trash or lumber that harbor rats in the fields.
- 6—Rat-proofing of warehouses, markets, cribs, stables and granaries for storage of provisions, seed grain and feed stuffs.
- 7—Keeping effective rat dogs, especially in city warehouses.
- 8—The systematic destruction of rats, whenever and wherever possible, by (a) trapping, (b) poisoning, and (c) organized hunts.
- 9—The organization of "rat clubs" and other societies for systematic warfare against rats.

tips. The tail is usually shorter than the head and body combined, while in the other two species it is generally longer.

"During the plague of rats on the island of Jamaica, in 1833 the number killed on a single plantation was 38,000. The injury to sugar cane on the island by the animals was estimated at that time to be \$500,000 a year. Over 12,000,000 were killed in India during a year. Observations show that climate and food supply greatly affect the rate of multiplication of rodents. The rat is no exception. It increases more rapidly in a moderately warm climate with an abundant supply of food.

"The destruction of feedstuffs by rats is a serious loss not only on the farm but in almost every city and village in the whole country. Often through the carelessness or indifference of servants the bin or barrel in which feed is kept is left uncovered, and the rats fairly swarm to the nightly feast. In cases investigated in Washington, D. C., the loss was equal to 5 or 10 per cent of the grain bought. A grocer was buying feed for two horses and several hundred rats; the horses were fed at regular intervals and the rats nearly all of the time. In the case of an establishment feeding from fifty to a hundred horses the loss of feed in the course of a year often amounts to a large item.

"Rats are very fond of malt and in malt houses and breweries constant watchfulness is necessary to prevent losses. Mills, elevators and warehouses in which grain is stored are likewise subject to the invasion of the animals. Also the destruction of sacks, barrels and bins is a large item of loss.

"The rodents are very fond of poultry and eggs. A commission merchant of Washington relates that he once stored in his warehouse 100 dozen

eggs in a wooden tub with a lid of board nailed on. Rats gnawed a hole through the top and carried away all but twenty-eight and a half dozen, leaving no stains or shells to show that any had been broken. Rats are very destructive to tame pigeons and young squabs, game birds, fruit and vegetables.

"It is generally believed that mice and rats cause fire by igniting matches with their teeth. The testimony of chiefs of fire departments and insurance adjusters confirms this belief. Manufacturers of matches often dip the ends in paraffin to protect the phosphorus. The paraffin is attractive to rats and mice and the matches are often carried behind walls, under floors and behind partitions where they are gnawed. Rats have been known to gnaw through the lead gas pipes and cause explosions. Rats often do mischief by gnawing the insulating covering of telephone wires to obtain the paraffin it contains.

"At state and national fish hatcheries the rats cause much trouble by burrowing into embankments and gnawing holes through wooden tanks. They have been known to gnaw the hoofs of horses until they bled. They have been known to kill young lambs and pigs and to attack very fat hogs and eat holes in their body causing death.

"There is a child buried near the summit of Pike's Peak that is supposed to have been killed by rats.

"The most serious charge against rats grows out of their relation to human health. It is now positively known that rats are chiefly responsible for the spread of the bubonic plague, a malady which, in spite of modern methods of fighting it, has within the past dozen years destroyed over 5,000,000 human beings in India alone.

"Bubonic plague in man is entirely

annum. When it is considered that the receivers of stolen goods get the lion's share of the profit, some idea is obtained of how great the cost to the community really is, and how small, comparatively, is the wages going to those who risk their freedom, even life itself, in following this mode of existence.

During thirty years of asbestos production, Canada, which leads the world in the output of the mineral, has produced over \$20,000,000 worth.

The 800-foot bridge over the Yellow River at Lanchowfu, in the Province of Kansu, is nearing completion. All materials had to be conveyed nearly 1,000 miles in Chinese carts

# CHICAGO 20,000 YEARS AGO, ICEBERGS THEN ITS CHIEF PRODUCT

Oak Park, a suburb of Chicago, is located on the highest point of land between Lake Michigan and the Des Plaines River—"on a hill seven feet high." But how came this commanding eminence there? Back in the frigid heart of the glacial period, about 20,000 years ago next December, the northern part of America was covered over with a great continental ice sheet. It was like the ice sheet which now covers Greenland; it was formed by the impact of thousands of feet of snow, and flowed slowly southward, like the advance of very thick molasses candy on the surface of a plate. Finally there came a succession of mild winters, and the ice sheet began to recede; its extreme margin, which had been building up the Valparaiso hills, which skirt the southern end of Lake Michigan, retreated within the present basin of the lake, and slowly moved farther and farther north. Its place was taken by a lake—Lake Chicago. The surface of this lake was sixty feet above the present level of Lake Michigan.

The extent of Lake Chicago is somewhat indefinite, for the edge of the ice sheet formed its northern boundary and varied much from year to year as Old Mother Earth struggled to throw off its glacial burden. Eastward the lake included the present areas of Lake Huron and Lake Erie, and covered the region lying between them; a broad arm extending across southern Michigan from the Saginaw Valley connected its eastern and western portions. Lake Superior had at this time its own outlet into the Mississippi; Lake Ontario was still covered by the ice sheet.

Anything more desolate and awful than the scenery of Lake Chicago at this time it is difficult to conceive—a vast stretch of ice cold water, frozen over in the winter and dotted with icebergs in the summer. Where now stand the Auditorium icebergs ground-creaked and groaned against each other through the dark days of the fall. There was no fish in the sea, no bird flew overhead, no animal walked or crawled along the desolate shore.

The outlet of Lake Chicago was southwest through the Des Plaines and Illinois rivers into the Mississippi. Lemont was in a mile-wide valley where once rolled the clear, chill waters which drained a basin extending from Chicago to Buffalo and from Green Bay to Georgian Bay.

In view of the comparative tameness of the scenery about Chicago it is enough to make one weep to think of this river—a mile wide, with rock bottom and sides, carrying a volume of water "comparable to Niagara," as says William C. Alden, of the United States Geological Survey, and de-

scending seventy-six feet in a distance of ten miles. Through uncounted centuries that glory and grandeur went utterly to waste, so far as human beings are concerned; and now Chicagoans pay out thousands of dollars annually to go to see the rapids of the St. Lawrence and the Niagara.

In course of time this period of the lake's history came to an end. The rapids in the "Chicago outlet" cut back to the limestone lip at which they started and lowered the level of the lake some twenty feet. Here it was stationary once more through centuries of time. The waters were as lifeless and the scenery as desolate as ever, but the icebergs which drifted down Michigan boulevard were smaller, for the water was shallower. It was at this period that a large sandbar more than a mile wide formed in the shallow water.

Why is Chicago where she is? It has often been said that the great city of the lakes might just as well have been built on the site of Milwaukee, and that only the superior enterprise and commercial genius of Chicago's business men turned the scale. This is putting the cart before the horse; it was the superior advantage of Chicago's site that attracted these far-seeing men. Look at a map of the United States. Throughout a region extending from Joliet to Texas and from Denver to Nashville, the nearest point on the great lakes, with their cheap water transportation, is Chicago; the grain must come here. But this great region is poor in timber, though rich agriculturally. The nearest point to which the southward-moving lumber of the North can be brought by water is Chicago. Look at the map again. The great lakes extend far to the south of their outlet through the St. Lawrence, and the railroads which run from New York and Boston to Wisconsin, Minnesota, northern Iowa, the Dakotas, Montana, Oregon and the Puget Sound region—not to speak of the imperial domain of western Canada—must be gathered together like a sheaf at some point on the shore of Lake Michigan, where its waters block the direct path to the Northwest. There was but one point where this could occur—where the Chicago River furnished a harbor for the boats, and the Des Plaines water shed, with its fifteen-foot divide, afforded easy access to the "hinterland" for canoes, railroads, ship canals, etc.

The jobbing trade of Chicago has been built up subject to strict geographic and topographic conditions. And Chicago's great strategic advantage of position is seen in this: That no matter what the form of transportation, whether by rail or by water, her position is equally advantageous and equally commanding.

**ADVISORY STAFF OF THE CENSUS DEPARTMENT.**



Alma Mater is proud of her sons who have been serving as advisers to the census authorities upon the subject of the formulation of the inquiry schedules, writes a Washington correspondent. There are twelve of them, and they represent the University of Dakota, University of Wisconsin, Iowa Agricultural College, London School of Economics, University of Berlin, Cornell University, University of Nebraska, Harvard University, University of Texas, University of Chicago, University of Kansas, Columbia College, Massachusetts Institute of Technology, University of Vermont, Northwestern University, Dartmouth College, Carnegie Technology School, Brown University and Yale University. Among them are: A. B.'s, Ph. D.'s, M. S.'s, B. S. C.'s, S. C.'s, B. S. A.'s, M. S. A.'s, A. B.'s, A. M.'s, Ph. B.'s, Ph. M.'s, and about all the other combinations of letters indicative of degrees in the higher branches of education. There are professors of agricultural economics, of farm management and farm crops, of political economy, of finance and of other special lines versed in the science of agriculture.

The back row reading from left to right is made up of: Horace Secrist, Spurgeon Bell, John Lee Coulter, Henry C. Taylor, Thomas N. Carver, Alvin S. Johnson, Carroll W. Doten. The front row reading from left to right is made up of: William B. Bailey, J. F. Warren, Arthur Boynton, Joseph A. Hill, Emil P. Secker, Allen H. Willett. Dr. Hill is the chief statistician of the Division of Revision and Results, and he is a graduate from Phillips Exeter Academy and of Harvard College. He is a Ph. D. of the University of Halle in Germany.

**ATCHISON GLOBE SIGHTS.**

How hoarse a little steamboat can whistle!

Until the fire, every man feels that the insurance agents are robbing him. "Pull" can never carry a man far. It is hard work and application that count.

One way not to have a good time is to spend most of your time looking for it.

When people do not enjoy doing the things we do, we are apt to think they do not have a good time.

When two old ladies and an old man walk down the street, the man generally pokes along behind.

Most people are forgetful. Most people think children used to be more obedient than they are to-day.

How tender and devoted a young man is to an old lady, when a pretty young girl is looking at him!

**THE WAGES OF CRIME.**

Average Income of Those Who Profit by Violence and Bloodshed.

To formulate anything more than an approximate estimate of the cost of crime to the country at large would, of course, be a task almost impossible of accomplishment, for the reason that in country districts records are much more imperfectly kept, while the proportionate cost of crime is undoubtedly higher than for a large city. The cost of crime included in taxation in New York city is about \$6 per capita of population, the highest in the country. In San Francisco it is estimated at about \$5, and in other cities from \$4 to \$4.50.

It is probably well within the lim-

its of safety to say that the total direct cost of crime to the country at large is about \$600,000,000 or \$700,000,000 annually. Criminal losses by fire last year totaled about \$100,000,000, while the loss of wages of some 250,000 prisoners in State, city and county jails and prisons, amounted to something over \$50,000,000. There are at present about 100,000 criminals confined in the State prisons of the country, and it is estimated that from 5 to 10 times as many more are successful in eluding the law. From statistics presented to the Prison Association of New York some years ago it has been ascertained that persons who follow crime as a business realize from their spoilation of the public \$1,600 each per

**SIDLIGHTS.**

The Salvation Army is established in fifty-two countries.

The war department paid \$94,418 for artificial limbs last year.

Six out of seven pictures sent to the Royal Academy every year are rejected.

The railroads of this country pay out \$24,000,000 a year in freight claims.

One-fifth of the country's wealth is represented in the New York stock exchange.

An owl with a nest of young will gather about forty mice a day for her offspring.