center of opium, now for the first time within memory, finds itself without a crop of opium. The prohibition of opium cultivation has begun suddenly, drastically, and actually, and the people seem to take it quietly. Not a blade of opium have I seen, but instead one sees wheat, vegetables, etc., all growing, with prospect of cheaper foodstuffs next year."

Still strict and drastic measures will have to be resorted to, declares the editor of the Bombay paper above quoted, if the good work is to be crowned with success, and we read that everything "will depend on the firmness of the officials in rooting up, as has been done elsewhere, the crops of poppy which may have been sown in spite of orders."

AN AMERICAN ADVISER FOR CHINA

M. ROOSEVELT has won laurels in the four quarters of the globe, even in Africa, not only as a second Nimrod, but as a politician. But the London *Standard*, in commenting on a dispatch from Peking to the effect that our ex-President has been offered "the post of Adviser-General to China," remarks that the



THE MIGHTY HUNTER RETURNS.

The lions are slain—now let the trusts tremble!

—Fischietto (Turin).

arbitrator between Russia and Japan is well fitted for the work, and we read:

"If China stands in need of an Adviser-General, Mr. Roosevelt is obviously the man for the position. We can hardly conceive any other that would give full scope for his remarkable versatility; or satisfactorily occupy such of his energies as are not engaged in literature, journalism, sport, American politics, and being photographed. To advise 400,000,000 of human beings, say one-quarter of the earth's population, on their affairs, would exhaust some people, but Mr. Roosevelt would, we are sure, prove more than equal to the task. Adviser-Generalship is the métier which he has exercised for some years past amid the unstinted admiration, not merely of his own countrymen, but of the world. As President of the United States he had, or rather he found, exceptional opportunities for the exhibition of this attractive talent. The office of Chief Executive of the Republic, under his immediate predecessors, was powerful rather than resplendent. Once installed in the White House, the President was accustomed to say little that was not concerned with the actual business of government and legislation. Mr. Roosevelt treated his great office differently. In his hands, as Wordsworth says of Milton and the sonnet, 'the thing became a trumpet, whence he blew.' Nor can one complain, as the poet does, that 'the soul-animating strains' emitted from this instrument were 'alas! too few.' Mr. Roosevelt spoke often and on many topics; and if the American people have not by this

time sound views on motherhood, brotherhood, childhood, family life, education, the obligations of property, the duty of patriotism, and most other subjects, it is not the fault of their distinguished and prolific councilor."

OUR EXAMPLE AN AID TO FREE TRADE

ORD BEACONSFIELD declared that free trade, to be effective, must be universal among nations who have commercial relations with each other. The British Conservatives are now advocating a return to protection, such as obtains in other European countries and in the United States. But some German economists are beginning to point to our country as already united in a free-trade union. Baron von Kuebeck, member of the Austrian House of Lords, is a strong advocate of European free trade, corresponding to the free trade which he says has been so powerful an agent in enriching and enlightening the separate States of this Union. He points to the United States as "an example" and "a model" for the countries on the other side of the Atlantic. In this way international trade relations would be pacifically Americanized. To quote this writer's words in the Deutsche Revue (Berlin):

"With regard to the establishment of a commercial solidarity among the traders of Europe we have only to reflect on the advantages which have been universally enjoyed from postal unions and the international railroad systems. It is indeed quite recently that a step toward the extension of the mutual method of commerce has been made by the King of Italy. Five years ago he attempted to found an international trade institute in Rome, in accordance with the idea of the American David Lubin. To effect this he called a Congress at Rome with delegates representing 38 States. This Congress was to meet every two or three years, and to appoint a standing executive committee consisting of at least 15 members, representing so many Governments."

The objects of the nations who united in this Trade Institute were definitely laid down. A clearing-house of trade information, statistics, and mutual cooperation would be established, with a view to cultivating such friendly trade relation as would eventually end in the abolition of international tariffs.

But before anything like free trade could be really established on a truly American basis, we are told, education and enlightenment would have to be disseminated as to the nature of the subjects germane to the ruling question. The work of the Institute at this stage would therefore be quite preliminary to the larger problems of legislative and political intervention. On this point the Baron goes into particulars as follows:

"The work committed to such an Institute would be: (1) The compilation and publication of statistical and technical data concerning the condition of agriculture and cattle-raising in the countries represented in the Institute, as well as the quotations of the trade, profit, and market value of the same. (2) The prompt interchange of information on such topics between those interested in these activities. (3) The publication of the rate of wages at which farm laborers were paid, and the description of such diseases as affect food plants and animals, and their remedies. (4) The study of agricultural corporations, insurance, credit, and all questions pertaining thereto, and the propounding of measures necessary for claiming government protection of agricultural interests.

"The Institute eventually would serve the purpose in Europe of that Federal assembly at Washington which has done so much to further peace and prosperity throughout the different States. The plain duty of the European Governments is to copy the United States in this particular. It is at least incumbent on France and Germany to make this their earnest aim, as we hope they will, in the union and centralization of their trade so as to secure not only greater plenty and prosperity, but also political peace and tranquillity. Austria-Hungary should recognize the duty of uniting the Balkan States in this way by mutualizing their tariff policy and eventually confederating all the countries along the Danube. This principle of consolidation would make a truce to all the dissensions of the European peoples thus confederated, as it were, in a single nation."—Translation made for The Literary Digest.

SCIENCE AND INVENTION

THE COMET BREEDING DISSENSIONS

O future generations it will seem as if Halley's comet this year had fallen among astronomic experts like the proverbial bone of contention among ravening dogs. Every writer voices a different theory, and their differences of opinion start from fundamentals. A cursory glance at recent cometary literature, embracing no less than six books and countless articles in magazines and



THE TERROR OF THE COMET IN ANTIQUITY. "A sword-shaped comet blazed over the doomed Holy City." -Josephus, "History of Judea."

newspapers, must convince the reader that comets are the most enigmatic of heavenly bodies. Even the apparently simple question: "What is a comet?" is met with bewilderingly different answers. Thus, George F. Chambers, in his "Story of the Comets," writes:

"To the question 'What are comets?' I give under great reserve this answer: Probably the heads are a mixture of solid and gaseous matter, and the tails are gaseous, the gaseous matter in the tails being the result of the volatilization of the solid matter of the head, or some of it. . . . To say what is the size of the solid particles is impossible; paving-stones, brick-bats, and grains of sand have in turn been suggested by people fond of speculation."

Prof. Percival Lowell, on the other hand, describes Halley's comet in The Youth's Companion as "the nearest approach to nothingness set in a void." On the part of the other writers there appears to be a vague agreement that the heads of comets are some kind of solid matter. Thus Prof. W. H. Pickering, of Harvard, in The Century Magazine, states that "the head of a comet consists of a swarm of meteorites. These meteorites may vary in size from paving-stones to bodies several feet-possibly, occasionally, even to bodies several miles in diameter."

Prof. T. J. J. See, of Mare Island Observatory, in Munsey's, adds:

"There is good evidence for the supposition of a meteoric nucleus because of the manifest relation between comets and meteoric The celebrated star showers of 1799, 1833, and 1866 were produced by a comet, which passed near the planet Uranus in 126 A.D. and was then captured and made to move around the sun in a period of 33 years and 4 months."

The composition of the tails of comets again is a matter of wide controversy. Prof. W. W. Campbell, director of the Lick Observa-



From "Comet Lore."

THE TERROR OF THE COMET AT THE PRESENT DAY.

"The comet of 1910 so alarmed the people of Mexico that many thousands went on a holy pilgrimage to the shrine of Talpa.

tory, in Sunset, admits that our knowledge of cometary chemical composition is "meager and unsatisfactory." He adds that a few comets give spectra very much like that of our own sun, indicating that they are shining by reflected sunlight as a planet shines. Other comets send out their own light almost exclusively, the radiations coming chiefly from carbon and cyanogen sources. Still others have mixt spectra, containing both inherent light and reflected light. Why comets shine by virtue of light within themselves is a mystery. Professor See in his Munsey article states:

The tail of a comet is made up of gaseous matter, such as hydrogen, cyanogen, and other hydrocarbon compounds. This has been proved by observation with the spectroscope. . . . On a few rare occasions observers have suspected traces of vapors of iron; but this has happened only in the case of comets which passed very near the sun, and which were vaporized by its intense

These gases are all more or less poisonous to human lungs, cyanogen in particular. Hence we may have reason to be thankful, if Mr. Waldemar Kaempffert is right in his assertion, in Collier's, that the tail of a comet is so attenuated that "the thinnest mist on the horizon is a dense blanket in comparison." That, however. has not deterred the imaginative Flammarion from considering the possibilities of our breathing a comet's tail which is charged with