Central American antiquities. In all, over 400 graves were opened, and showed a typical stone-age culture; no weapon or cutting tool of bronze, still less of iron, was found. But though the majority of the graves were uninfluenced by European culture, proof was not wanting that in two cases cemeteries at Orosi and Mercedes were in use after the Europeans had reached the New World. In a grave at Orosi were found some mosaic glass beads, clearly of Venetian origin, and in a grave at Mercedes was a large bead of blue glass. Another valuable contribution to the chronology of the find is afforded by a clay bowl found at Salvador, and bearing Maya hieroglyphs, which probably denote the number of a year according to their chronology, which unfortunately has not yet been connected with that of the Old World.

Similar explorations were carried out in the Guanacaste peninsula on the Pacific coast, and on the islands in the bay of Nicoya, also at Carrizal on the neighboring mainland. Dr. Hartman then proceeded to Salvador, where for nearly a year he dwelt in one of the largest villages inhabited by the Pipilas, an Aztec tribe, and devoted himself to the study of their manners and customs, and religious ideas and language. Here he made a rich ethnographic collection, also a collection of Indian antiquities from the neighborhood, and compiled the first vocabulary of a Central American Aztec dialect that has any pretence to completeness. He also made an anthropometric examination of 100 Aztec individuals, and took a number of photographs.

In Guatemala Dr. Hartman visited the Indian tribes, Cakchiquels, Zutujils, Quichés and Xincas, as well as the Huavas on Cape Tehuantepec in southern Mexico. His notes on the language of the last two are of the greatest interest, inasmuch as there was previously no material for the classification of their tongue. Here also may be mentioned a test of the so-called nahuatlisms, remains of the ancient Aztec language which have been adopted in the Spanish now spoken in those regions.

Dr. Hartman returned to Sweden in October, 1899, bringing the valuable collections now exhibited, which Mr. Sjögren, with great generosity, has handed over to the Ethnographic Museum of the State.

THE GROWTH OF CITIES.

A RECENT census bulletin contains reports on the population of cities having 25,000 inhabitants, or more, in 1900. There were 159 of these cities which are placed in four groups according to their size. The increase in population from 1880 to 1900 is shown in the following table:

CLASSIFIED SIZES.	No.	POPULATION.			INCREASE FROM 1890 TO 1900.		INCREASE FROM 1880 TO 1890.	
		1900	1890	1880	Number.	Per cent.	Number.	Per cent.
Totals	159	19,694,625	14,855,489	9,933,927	4,839,136	32.5	4,921,562	49.5
Cities of 200,000 and over	19	11,795,809	8,879 105	6,311,653	2,916,704	32.8	2,567,452	40.6
Cities of 100,000 and under 200,000	19	2,412,538	1,808.656	1,009,163	603,882	33.3	799,493	79.2
Cities of 50,000 and under 100,000	40	2,709,338	2 067,169	1,368,309	642,169	31.0	698,860	51.0
Cities of 25,000 and under 50,000	81	2,776,940	2,100,559	1,244,802	676,381	32.2	855,757	68.7

The 19 largest cities are further classified as follows:

CLASSIFIED SIZES.	No.	POPULATION.			INCREASE FROM 1890 TO 1900.		INCREASE FROM 1880 TO 1890.	
		1900	1890	1880	Number.	Per cent.	Number.	Per cent.
Totals	19	11,795,809	8,879,105	6,311,653	2,916,704	32.8	2,567,452	40.6
Cities of 3,000,000 and over	1	3,437,202	2,492,591	1,901.345	944,611	37.8	591.246	31.0
Cities of 1,000,000 and under 2,000,000	2	2,992.272	2,146,814	1,350,355	845,458	39.3	796,459	58.9
Cities of 500,000 and under 1,000,000	3	1,645,087	1,334.686	1,045,670	310,401	23.2	289.016	27.6
Cities of 300,000 and under 400,000	5	1,724,455	1,351,539	960,767	372,916	27.5	390,772	40.6
Cities of 200,000 and under 300,000	8	1,996,793	1,553,475	1,053,516	443,318	28.5	499,959	47.4

The cities of over 1,000,000 should, however, be separated, Chicago having had an increase of 54.4 per cent. and Philadelphia of only 23.5.

*HARBEN LECTURES ON THE PLAGUE.**

THE first of the three Harben Lectures for 1900 was delivered at the Examination Hall of the Royal Colleges of Physicians and Surgeons, London, on November 7th, by Dr. A. Calmette, Director of the Pasteur Institute of Lille. After a short reference to the history of plague, he said it was possible for him to bring forward some modern views of the disease from his recent researches made as the result of his mission to Oporto last year with Salembeni. After giving a description of the plague bacillus, Dr. Calmette said plague assumed two principal clinical forms, bubonic plague, and plague without buboes. After describing the symptoms of plague he showed that the localization of the lesions in the gland determined the special attitude of the patient. The forms of the plague without bubo occurred more rarely than the classical forms of bubonic plague. Primary pneumonic plague was evidently due to the penetration of the microbe into the respiratory channels. It could be diagnosed only by bacteriological examination of the sputa, because the aspect of the sputum, the clinical symptoms, and the auscultatory signs resembled those of ordinary pneumonia. Another and still rarer form of plague without buboes was septicæmic plague or pesticæmia, which developed with extreme rapidity like acute septicæmia. It was caused by the rapid growth of the plague bacillus in the blood and in all the organs. It was not exactly known where the virus first effected an entrance in these cases, but the hypothesis was that it penetrated by the gastro-intestinal tract. When plague was studied in an epidemic center all the forms described were met with, but sometimes it happened that the first cases did not present such clear characteristics, and it was thus possible that they might be incorrectly diagnosed. At the commencement of a case of bubonic plague, that is to say, at the period when there was only glandular congestion and fever, to ascertain whether the plague microbe was present or not, a puncture should be made with a Pravaz's syringe into the lymphatic tissues, and some drops of fluid extracted. This could be inoculated in the usual manner and examined immediately after staining. To put the patient beyond the danger of any possible re-infection, it was only necessary, directly after the puncture with the syringe, to inject about 5 c.cm. of antiplague serum into the middle of the gland or at a short distance from it. If on examination of the fluid the microbes were found free and very numerous, the prognosis was serious; if the microbes were nearly all enclosed in polynuclear cells, it might be hoped that the case was non-malignant and that the infection would remain localized. It was essential, in testing the virulence of a plague microbe by experiments on animals, to use a recent culture, not older than twenty-four to forty eight hours at the most.

Mice, rats and guinea-pigs were very susceptible to plague, but it was thought that many other animals could take the plague. In this respect the pig, the ox and poultry had been mentioned, but these animals did not take the disease spontaneously. Birds were not easily infected by plague bacillus; the vultures on the Towers of Silense near Bombay suffered no ill after devouring plague corpses, but it was not proved that they did not scatter the plague microbe with their excreta on the surface of the soil. The monkey easily contracted plague by inoculation, and also spontaneously when placed in a cage side by side with another infected monkey. The bacilli could also be transported by fleas, by the other parasites of the skin and by flies. Healthy mice placed in the same cage with infected mice, but separated by wire, so that they could not touch each other, contracted the plague at the end of a few days; the contamination in these cases was due to fleas and flies. Professor Calmette illustrated his lecture with lantern slides, depicting patients affected with plague.

* From the *British Medical Journal.*

SCIENTIFIC NOTES AND NEWS.

PROFESSOR W. W. CAMPBELL has been appointed director of the Lick Observatory in succession to the late Professor James E. Keeler.

ON account of failing health Dr. Edward von Mojsisovics is retiring from the post of vice-director of the Geological Survey of Austria, into which body he entered as a volunteer on February 18, 1865, the director then being W.