"As typhoid-fever is a greater calamity than Texas fever, as Asiatic cholera is more to be dreaded than hog cholera, so do we need a department of public health more than a department of agriculture, a bureau of vital statistics more than a bureau of animal industry.

"The death-rate of twenty-six of the principal cities of America, with a population of 9,873,448, is 20 per 1,000. I think it morally certain that this rate could be reduced by means and methods now known to sanitary science to 16 per 1,000, and probably still less than that. The death-rate for London for the year 1888 was 18.5 per 1,000. This can be still further reduced. That of New York and Brooklyn for the same year, taken together, is 25.5 per 1,000; New York, 25.9; Brooklyn, 23.7. The death-rate of these two cities, if reduced to that of London, would secure a saving of 7 per 1,000, or annually 15,986 lives. These lives are public wealth.

"But this is not all. For one death annually two persons are sick during the entire year, or, in other words, there are two years of disabling sickness to one death, 31,972 years in New York and Brooklyn of sickness, preventable sickness, annually. The value of these years of sickness cannot be reached with accuracy; but the wages lost on account of sickness, the cost of care and maintenance during sickness and convalescence, and the money-value of the lives destroyed, considering them only as machines, will, in New York and Brooklyn, reach annually into the millions. I venture to suggest to the business-men of these cities that this loss is enough every year to buy a great railroad or to build and subsidize a fleet of ocean-going steel steamships."

The session continues through Friday, while the sanitary exhibition will continue for some weeks.

PROGRESS OF CHINA.

MR. R. S. GUNDRY read a paper on "Industrial and Commercial Progress in China" to the British Association last month. Premising that the wide differences in character and habits of thought between Europeans and the Chinese made it difficult to convey to an English audience an accurate impression of the situation, the paper, as reported in *The Scottish Geographical Magazine*, went on to sketch the leading features of Chinese industry and commerce in so far as they concerned, and had been affected by, foreign enterprise. Beginning to move at a time when she had been defeated in a foreign war, China's first efforts were to provide herself with the warlike material which experience had shown her to be so powerful: hence the early construction of arsenals and steamers. The beginnings of telegraphs, and the acceptance in principle of railways, were due also, in a measure, to warlike stress in connection with Kulja and Tongking; and mining was recognized largely as a means of providing for all this additional expenditure. But imperfection of knowledge, jealousy of foreign supervision, and a disorganized condition of finance, which involves venality and harassing taxation, retard a progressive movement, to which the *literati* who constitute the mind of the nation are still as a body disinclined. The imperial finances, too, have been strained by a series of wars, rebellions, and disasters; and distrust of their officials prevents native capitalists from investing money in enterprises with which the officials persist in meddling. The great staples of tea and silk are severely menaced by the competition of India and Ceylon in the one case, and of southern Europe in the other; and the Chinese are slow to accept improved methods of preparation which would enable them to hold their own. China tea is heavily handicapped also by taxation, in competition with its duty-free rival. Fiscal hinderances, imperfect communications, and consequent cost of transport, have much to do with the slow development of trade. But the wide prevalence of domestic industry, and difficulties of exchange caused by the demonetization of silver, tend also to check the anticipated growth of demand for European manufactures. There seems every prospect that more railways will shortly be constructed, and that machinery will be tentatively admitted for purposes of industrial manufacture; but much time, a more widespread desire for progress, and radical financial reform, will be required before China is likely to rival Japan in the completeness of its transformation.

JADE IN BURMAH.

ACCORDING to a recent official report from Burmah, the jade-producing country is partly enclosed by the Chindwin and Uru Rivers, and lies between the 25th and 26th parallels of latitude. Jade is also found in the Myadaung district, and the most celebrated of all jade deposits is reported to be a large cliff overhanging the Chindwin, or a branch of that river, distant about eight or nine days' journey from the confluence of the Uru and Chindwin. Of this cliff, called by the Chinese traders "Nantclung," or "difficult of access," nothing is really known, as no traders have gone there for at least twenty years. Within the jade tract described above, small quantities of stone have been found at many places, and abandoned quarries are numerous. The largest quarries now worked are situated in the country of the Merip Kachins. The largest mine is about 50 yards long, 40 broad, and 20 deep. The season for jade operations begins in November, and lasts till May. The most productive quarries are generally flooded, and the labor of quarrying is much increased thereby. In February and March, when the floor of the pit can be kept dry for a few hours by baling, immense fires are lighted at the base of the stone. A careful watch is then kept in a tremendous heat to detect the first signs of splitting. When this occurs, the Kachins attack the stone with pickaxes and hammers, or detach portions by hauling on levers inserted in the cracks. The heat is almost insupportable, the labor severe, and the mortality among the workers is high. The Kachins claim the exclusive right of working the quarries, and there is not much disposition on the part of others to interfere. Traders content themselves with buying the stone from the Kachins. The jade is then taken by Shan and Kachin coolies to Namia Kyankseik, one long day's journey from Tomo. Thence it is carried by dug-outs down a small stream, which flows into the Tudaw River, about three miles below Sakaw, and down the Tudaw River itself to Mogaung.

MENTAL SCIENCE.

New Experiments upon the Time-Relations of Mental Processes.

IN the preceding issue of this department an account was given of certain experiments measuring the time of re-action to words, both simply and when the movements of the five fingers were associated respectively with five words or five general classes of words. The results revealed a striking difference, according as the attention is directed to the sensory factors of the process and their appreciation, or the motor factors and their execution. The latter is a much briefer act, and seems to require a quite different series of mental processes from the former. To the theories explaining these and other facts we shall recur in this study. Dr. Münsterberg continues the work by applying similar methods to the study of association, judgments, and in general more complex operations.

I. As the more mechanical process in every association consists in hearing and understanding a spoken word and in speaking a word, we can easiest measure how much time is needed to accomplish this part of the process by measuring the time intervening between the speaking of a word by the experimenter and the repetition by the subject. Throughout this study there are two subjects, M and R; and in addition to the time there is given in parentheses the average variation, *v*, which marks the relative constancy, regularity of the process measured. As the words used in later experiments were both monosyllables and others, these were introduced at the outset, care being taken by the experimenter when calling a polysyllabic word to press the key in speaking the last (or the last accented) syllable, and by the subject always to press the key when speaking the first syllable of his reply-word. The simple repetition of a word, then, was accomplished by *M* in .403 of a second (*v*, .060); by R, in .362 of a second (*v*, .070).

II. Here, instead of repeating the called word, one re-acts by calling as quickly as possible a word associated in any way whatever with the first; that is, an ordinary "association-time." M does this in .845 of a second (*v*, .140); R, in .948 of a second (*v*, .170). The shortest time was for "gold-silver" (.390 of a sec-