

will be five million dollars, and subscriptions will be immediately opened in the capitals of the four states which signed the general act of the conference at Berlin. The railroad will be constructed within the territory of the state of Kongo, either on the south side of the river, between the frontier and Leopoldville, or in two sections, — one on the right bank of the river, and the other on the left.

LIEUTENANT TAUNT of the U. S. navy recently arrived in London from the Kongo, where he has been on a mission for the government. Mr. Tisdell's report of a visit to the lower Kongo, in which he painted so black a picture of unsuccess and sterility, will be fresh in the memory of our readers. The report which Lieutenant Taunt has to render bears a very different complexion: he did not content himself with a hurried visit to Vivi and Stanley Pool, but went as far as Stanley Falls. He describes the lower Kongo as in the main barren, but even there relieved by fertile spots. The administration of the Kongo state is severely criticised. Lieutenant Taunt finds that in the lower Kongo the officials do not retain their offices long enough: this is presumably to be credited to the extremely unhealthy climate, although no such reason is given by Lieutenant Taunt. On the upper Kongo he found the officials better contented, and the administration more satisfactory. It is understood that there is no prospect of Mr. Stanley proceeding to the Kongo in the near future; and there is a tendency to withdraw all officials not of Belgian nationality. Sir Francis de Winton has retired, and has been succeeded by N. Janssen. These changes may result in doing away with the jealousies formerly existing among the officials of different nationalities.

THE DECLINE OF CHOLERA in southern Europe has afforded ground for the hope that the epidemic had nearly ceased, or at least that the worst was over. From recent news, however, it appears that there yet exists cause for apprehension. The disease has broken out in the provinces of Cadiz and Malaga, and quarantine has been established at several seaports. It has approached the frontiers of Portugal, and it is very possible, if not probable, that it may break out with its previous intensity in the spring. Not only in Portugal, but in various provinces of Spain, evidence seems to indicate that the end of the epidemic is not yet.

ON ANOTHER PAGE will be found the proceedings of the first meeting of the Indiana academy of sciences. This society enters upon its existence under auspicious circumstances, and its future progress will be watched with interest. The list of names of the officers or participants, as given, includes not a few of men of acknowledged ability; and there certainly seems to be sufficient material among the scientific workers of Indiana to make the academy a success. Other state academies have led a feeble existence, from lack of material or proper management; may it be hoped that the future of the present one will be brighter.

#### THE COMPETITION OF CONVICT LABOR.

BACK of all the discussion as to the various methods of employing convicts, one of which was commented on in a recent number of this journal (*Science*, No. 153, p. 28), lies the complaint that any method whatsoever of utilizing convict labor, save in the work about the prisons, results in a competition with free labor which is unfair and injurious.

The idea that this competition really exists in an appreciable amount has taken possession of so many minds, that we offer a few statistics on the subject. It may at once be admitted, that were all the 60,000 convicts in this country employed in a single industry, under one scheme of management, the effect would be that an enormous addition would be made to the productive capacity of that industry, and consequently prices might fall, and a reduction of wages result. But this hypothesis is as far from the truth as possible.

In 1879 Col. Carroll D. Wright ('Eleventh annual report of the Massachusetts bureau of the statistics of labor,' p. 112) stated that such convicts as were employed at any kind of labor whatsoever throughout the whole United States were 40,122 in number, and were distributed among 129 penal institutions. Of this number, 23,524 — 22,288 males and 1,236 females — were employed in 108 kinds of industries requiring skilled labor; 11,668 — 11,450 males and 218 females — were employed in 25 kinds of industries requiring unskilled labor; the remaining 4,930 were employed in prison duties. These 23,524 convicts, employed in productive skilled work in the prisons of the United States, were competing (*ibid.*, p. 114) with 666,625 workmen employed in the same states upon the same kind of work, and with 1,369,240 in the whole United States engaged in the same productive industries that were carried on in the prisons: therefore the percentage of convicts to free laborers was 1.83.

Small as this makes the force of the competition appear, the real effect is smaller still. The competing power of the prisons was, as appears above, 23,524 convicts. But, relying on the most scientific tests and measures that the English prison managers have been able to apply to the productive force of convict labor, we find that it takes the labor of two convicts to equal that of one free laborer (see 'Report of the superintendent of state prisons of the state of New York for the year 1884,' p. 24). This results, of course, from the low mental and moral equipment of the average convict, as well as from the peculiar conditions under which prison labor is carried on. As it is a well-known fact that the artisans in the United States accomplish more work in a given time than their European competitors do, it will be necessary to allow for a somewhat higher standard of convict labor. Putting this allowance at 10 per cent, we find that the productive labor of an American convict is 60 per cent of that of the free workman.

Therefore, while the percentage of convicts to free laborers was 1.83, the competitive productive power of the former was only three-fifths of that, or 1.1 per cent. And it is this minute percentage of competition that has caused all the hue and cry against convict labor.

In a recent paper on 'The rate of wages,' Mr. Edward Atkinson, of Boston, basing his statistics on the census of 1880, states that 17,400,000 persons are engaged in some gainful occupation. Of this number, 150,000 are in government employ: so there remain 17,250,000 producers, who, by exchanging products with others, also obtain the means of living, and thereby become consumers. 1,050,000 of these are engaged in mental rather than manual work; such are clergymen, lawyers, teachers, artists, chemists, engineers, officials of banks, railroads, insurance companies and corporations, merchants, traders, and dealers. When these are deducted, we have a remainder of 16,200,000, who constitute the actual working-class. 7,000,000 of these are farmers and farm-laborers, and the rest are artisans, mechanics, clerks, laborers, operatives, domestic servants, and other wage earners. The products of the mechanical industries of the United States amount to more than five thousand million dollars annually. The total product of the state prisons of the country is not over twenty millions per annum, or two-fifths of one per cent of the whole manufactured products of the country; and this figure is obtained by taking prison labor at a valuation of two dollars per day,—the average price for labor outside of prisons. As the convicts earn, on an average, only forty cents a day, their earnings represent a product of less than one-fifth

of one per cent of the products of the United States.

We are convinced that those who participate in the crusade against the employment of convicts in productive industries on the ground of unfair competition with free labor, are innocent of any acquaintance with the facts and figures that bear on the question. NICHOLAS MURRAY BUTLER.

#### THE NEW VOLCANO IN THE PACIFIC.

THE *New Zealand herald* of Nov. 3 contained the following account of the recently reported new volcano in the Pacific:—

"In yesterday's paper we stated the news brought by the schooner Maile, that a new and vast volcano had arisen in the Pacific Ocean. A correspondent in Tonga, dating Oct. 19, gives the following particulars: 'At daylight on the 13th of this month (October) we observed dense volumes of steam, smoke, and clouds, ascending in a N. N. W. direction. At one o'clock P.M. on the same day proceeded in the Sandfly in that direction, having on board the Premier, Mr. Baker, Mrs. Baker, two Misses Baker, Mr. S. W. E. Baker, Miss Tuckow, Dr. Buckland, Rev. Mr. Watkin, Mr. F. Watkin, Mr. Wilson, Mr. S. Roberts, Prince Liponie, Chief Tongi, and several others; sailed sufficiently close that evening to see that it was a submarine volcanic eruption. Considering it not prudent to approach it any closer, night coming on, and thinking there might possibly be a set of currents towards it, shortened sail, and worked to windward of it, keeping it at a respectable and comfortable distance from us during the night. In the morning at daylight made sail with a fresh breeze from E. S. E. About eight A.M. my judgment was, we were about  $1\frac{1}{2}$  to 2 miles from the crater, it bearing then about N. W. I have not words to express my admiration and wonder at its changing splendor. Eruptions take place every one or two minutes, changing its appearance every second like a dissolving view. I can only say it was one of the most awfully grand sights I ever witnessed in all my life on the high seas. And now for the position, as near as I have been able to calculate at present, of the island that has been thrown up by this volcanic eruption. It is on the S. E. edge of Culebras reef, as placed on the chart by H. M. S. Falcon in 1865, and N. N. W.  $\frac{1}{2}$  W. magnetic, 14 to 15 miles from the island of Honga Tonga. As to the size or extent of the island thrown up, I am at present unable to state correctly, there being so much steam and clouds hanging about and over it; but I should imagine, from what little I could see of it, that it was from 2 to 3 miles long, S. W. and N. E.; height about