

ive value of silver mines, when science had been fully applied to them, for they increase in value as in depth, whereas gold diminishes as we descend to seek it.

Sir Roderick inveighed strongly against the popular delusion, that the Californian gold regions, then recently discovered, would be all equally productive, basing his opinion on the presumption that there could be no variation from the constants, which he appeared to view as a law of nature.

In connection with Sir Roderick's allusions to Job, it is interesting to turn to Job himself; and as some points of connexion are evidently wanting in our common version, I have had recourse to that of Good, which certainly proves Job to have been an excellent geologist.

Good thus translates the 28th chapter of Job: "There is a mine for the silver, and a bed for the gold which men refine. Iron is dug from the earth and the rock poureth forth copper. Man delveth into the region of darkness, and examineth to the utmost limit, the stones of darkness and death shade; he breaketh up the veins from the matrix, which, though nothing thought of under foot, are drawn forth and brandished among mankind. The earth itself poureth forth bread, but below it windeth a fiery region; sapphires are its stones, and gold is its ground." "Man thrusteth his hand into the sparry ore; he upturneth the mountains from their roots; he culleth out channels through the rocks, and his eye discerneth every precious gem. He re-traineth the waters from oozing, and maketh the hidden gloom become radiance."

In a note to this chapter, Dr. Kitto gives an extract from Agatharchides, who lived in the first century before Christ, describing the mode in which the a rifrous quartz mines of the Red Sea were worked by the ancient Egyptians,—all tending to prove that quartz mining and crushing, as well as washing gold from the sands of the beds of rivers, were about as well understood two thousand years ago as they are now.—*Dr. Anderson, in the Transactions of the Quebec Lit. and Hist. Society.*

—Professor Donati announces from Florence the discovery of a new comet, being the third of the present year, in the constellation of Leo Minor. Its motion is very slow, which leads to the supposition that it is approaching the earth and sun, and is therefore not unlikely to appear under much larger dimensions than at present. Its actual appearance through the telescope is that of a very weak nebula.

Father S. cchi, of Rome, has laid before the Academy of Sciences at Paris the results of his observations of the atmosphere of Jupiter by the spectrum apparatus, which confirm the existence of certain special lines differing from our own. The line C and its atmospheric band is totally absent in Jupiter's spectrum, and other lines are differently arranged.—*Educational Times.*

—The long discussion which has taken place over the human jaw-bone asserted to have been found at the quarry of Moulou-Quignon has given great interest to explorations at that place. At the meeting of the Academy of Sciences of July 18th, M. de Quatrefages presented the results of new discoveries of human remains in communications from M. Boucher de Perthes. From these communications it appears that on the 21th of April last, Boucher de Perthes, along with Dr. Dubois, physician of the Hotel-Dieu at Abbeville, found in a yellowish-brown bed to the right of the quarry, a portion of a human sacrum, fragments of other bones, some of which were parts of a cranium, and a human molar tooth. On the first of May, they obtained, on further digging, three small fragments of a cranium and a part of a tooth. On the 12th of May, M. Boucher de Perthes was joined by M. H. Duval. They procured from the brownish-yellow bed, at a depth of six to seven feet portions of a cranium.

On the 11th of May, besides fragments of bones, a human jaw-bone was turned out, which was perfect, excepting the extremity of the right ramus and the teeth. The depth from which it was obtained was about fourteen feet. Boucher de Perthes, being occupied with investigations elsewhere at the time, was not himself present; but a person delegated by him superintended the digging. Fragments of bones and some cut flints also were found.

On the 7th of June, the Abbé Martin, Curate of St. Giles, Professor of Geology in the Seminary of St. Riquier, continued the diggings during the temporary absence of M. de Perthes, and took out from the bed, at a place where it showed plainly by its regular stratification that it had not been disturbed since its first deposition, a human cranium, the frontal bone and the two parietals of which were nearly entire, and also two fragments of an upper jaw (perhaps of the same head with the cranium) and an iliac bone.

The number of specimens of bones collected amounts to 200, and they were all found within an extent of about 130 feet. Part are of animals, a catalogue of which is soon to be made out. The human remains apparently indicate a very small race of men.—*Les Mondes, July 21.*

—Mr. W. F. Barrett, Assistant in the Physical Laboratory of the Royal Institution, has recently published in the *Philosophical Magazine*, a new and extremely delicate method of determining the amount of carbonic acid in air expired from the lungs. The apparatus used by Mr. Barrett in this investigation, which has been made under the general direction of Professor Tyndall, is nearly the same as that employed by the Professor in his researches on the absorption of heat by gases.

Three suitable bags are filled with the human breath: No. 1 is filled before breakfast; No. 2, after breakfast; No. 3, after severe exertion.

The contents are then successively allowed to enter an exhausted brass cylinder, the ends of which are stopped air-tight by plates of rock-salt. Through the cylinder the radiation from a flame of carbonic oxide gas is passing. Immediately the breath, which has been deprived of its moisture, fills the brass cylinder, more than half the heat from the flame is cut off or absorbed, and this entirely by the small quantity of carbonic acid present in the expired air. The amount of heat intercepted by the breath is, in each case accurately measured by means of a delicate thermo-multiplier. The per-centage of carbonic acid contained in the different specimens of breath is found by calculation and subsequent experiments, and is then compared with a chemical analysis of each specimen made by Dr. Frankland.

The close agreement between the methods of analysis is shown by the following numbers:—

	By physical analysis.	By chemical analysis.
Bag 1.....	4.00.....	4.31
Bag 2.....	4.66.....	4.56
Bag 3.....	5.35.....	5.22

These numbers indicate the per-cent. of carbonic acid in breath and show that in these experiments the least amount of that gas was exhaled before breakfast.

Many other different samples of breath have been examined by Mr. Barrett; the results he has obtained prove the great delicacy of the new method of analysis in detecting small quantities of carbonic acid, or in discovering variations in the amount of this gas in the atmosphere or in the human breath. For this purpose its application in hospitals has already been suggested by eminent men.—*Intellectual Observer.*

STATISTICAL INTELLIGENCE.

—The press of Canada generally, that of Toronto particularly, continues with much industry to devote a goodly portion of its space to lengthy articles on the great subject of Confederation. The question is presented in every conceivable and inconceivable light. Many of the articles are interesting, many are not; several are valuable, others utterly worthless. The *Globe* of the 4th, however, publishes an article in which is compiled some returns of the relative value of the trade and commerce of the British American Colonies, and as the statistics are valuable and should be interesting, we condense a portion of the article for the benefit of our readers. The quantity of new shipping built in all the North American colonies, in 1863, was 645 vessels, measuring 219,763 tons register, of which New Brunswick built upwards of 38 per cent. The value of the new shipping in British North America last year, at £8 sterling per register ton, was £1,758,104 sterling, or \$8,439,000—a sum representing a very large industry, which must have given work and wages to a vast number of hands. The revenue of New Brunswick last year, was the largest ever collected in one year in the history of the Province, having been \$854,894, which was an increase of \$152,664 over 1812. The high tariffs in the United States put a stop to smuggling, and to that extent improved the Provincial revenue. That part of the revenue derived from customs was \$768,353, or about \$3 per head of the population. In Canada last year the customs revenue was \$5,109,173; excise, \$725,421; total, \$5,894,594, or about \$2.25 per head of the population. In Nova Scotia the customs and excise revenue, in 1863, was \$861,989, or about \$2.60 per head of the population. The customs and excise revenue of the five colonies of Canada, Nova Scotia, New Brunswick, Prince Edwards Island, and Newfoundland, in 1863, was £1,097,777 stg., or \$8,149,329 being \$2.47 per head of the population, against £4,465,111 stg., or \$7,032,532 in 1862. The imports into New Brunswick in 1863 amounted to £1,595,513 stg., or \$7,658,462, being \$1,458,763 in excess of the imports of 1862. The imports of Nova Scotia, in 1863, amounted to \$10,201,391, and of Canada in the same year to \$45,964,493. The export from New Brunswick in 1863 amounted to £1,029,320 stg., or \$4,940,736; being \$984,243 in excess of the exports of 1862. Including the value of the new ships, (£812,750 stg.) the total exports of 1863 were £1,842,079 stg., or \$8,841,936—being an excess over the imports, or a balance in favour of the Province, of \$1,183,474. The exports from Nova Scotia in 1863 were of the value of \$6,546,488; those from Canada, including the value of the new shipping exported, \$41,831,532.—*St. John's News, C. E.*

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