lecturers men of such eminence, that the names of Hoffman, Percy, Warrington Smyth, Willis, Ramsay, Huxley, and Tyndall are alone an earnest of our future success.

In terminating these few allusions to the Geological Survey, and its applications, I gladly sieze the opportunity of recording that in the days of our founder, Sir Henry De la Beche, our institution was greatly benefitted in possessing, for some years, as one of its leading surveyors, such an accomplished naturalist and skilful geologist, as the beloved Assistant General Secretary of the British Association, Professor Phillips, who by his labors threw much new light on the palæontology of Devonshire, who, in the Memoirs of the Survey, has contributed an admirable Monograph on the Silurian and other rocks around the Malvern Hills and who, by his lectures and writings, is now constantly advancing geological science in the oldest of our British Universities.

There is yet one subject connected with the Geological Survey to which I must also call your attention, viz., the Mineral Statistics of the United Kingdom, as compiled with great care and abilty by Mr. Robert Hunt, the Keeper of the Mining Records, and published annually in the Memoirs of our establishment.

These returns nade a deep impression on the statists of foreign countries who were assembled last year in London at the International Congress. The Government and members of the legislature are now regularly furnished with reliable information as to our mineral produce, which, until very recently, was not obtainable. By the labors of Mr. Robert Hunt, in sedulously collecting data from all quarters, we now become aware of the fact that we are consuming and exporting about 80 millions of tons of Coals annually (a prodigious recent increase, and daily augmenting). Of Iron-ore we raise and smelt upwards of 8 millions of tons, producing 3,826,000 tons of pig iron. Of Copper-ore we raise from our own mines 236,696 tons, which yield 15,968 tons of metallic copper; and from our native metallic minerals we obtain of Tin 6,695 tons; of Lead, 63,525 tons; and of Zinc, 4,357 tons. The total annual value of our Minerals and Coals is estimated at £26,993,573, and that of Metals (the produce of the above minerals) and Coals at £37,121,318 !

When we turn from the consideration of the home survey to that of the Geological Surveys in the numerous colonies of Great Britain, I may well reflect with pleasure on the fact that nearly all the leaders of the latter have been connected with, or have gone out from, our home Geological Survey and the Government School of Mines.

Such were the relations to us of Sir William Logan in Canada; of Professor Oldham in India, with several of his assistants; of Selwyn in Victoria; of my young friend Gould in Tasmania, as well as of Wall in Trinidad; whilst Barrett, in Jamaica, is a worthy pupil of Professor Sedgwick. Passing over the many interesting results which have arisen out of the examination of these distant lands, we cannot but be struck with the fact, that whilst Hindostan (with the exception of the Higher Himalayan mountains) differs so materially in its structure and fossil contents from Europe, Australia (particularly Victoria) presents, in its Palæozoic rocks at least, a close analogy to Britain. Thanks to the ability and zeal of Mr. Selwyn, a large portion of this great auriferous colony has been already surveyed and mapped out in the clearest manner. In doing this he has demonstrated that the productive quartzose veinstones, which are the chief matrix of gold, are merely subordinate to the Lower Silurian slaty rocks, charged with Trilobites and Graptolites, and penetrated by granite, syenite, and volcanic rocks,—occupying vast regions. * Mr. Selwyn, aided in the palæontology of his large subject by Prof. M'Coy, has also shown how these original auriferous rocks have been worn down at successive periods, one of which abrasions is of Pliocene age, another of Post-Pliocene, and a third the result of existing causes. All these distinctions, as well as the demarkation of the Carboniferous, Oolitic, and other rocks, are clearly set forth. Looking with admiration at the execution of these geological maps, it was with exceeding pain I learnt that some members of the Legislature of Victoria had threatened to curtail their cost, if not to stop their production. As such ill-timed economy would occasion serious regret among all men of science, and would, I know, be also deeply lamented by the enlightened Governor, Sir Henry Barkley, it would at the same time be of lasting disservice to the material advancement of knowledge among the mining classes of the State, let us earnestly hope that the young House of Parliament, at Melbourne, may not be led to enact such a measure.

Whilst upon the great subject of Australian geology, I cannot avoid touching on a *quæstio vexata* which has arisen in respect to the age of the coalfields of that vast mass of land. Judging by the fossil plants from some of the carboniferous deposits of Victoria, Prof. M'Coy has considered these coaly deposits to be of the Oolitic or Jurassic age, while the experienced geologist of New South Wales, the Rev. W. B. Clarke, seeing that where he has examined these deposits, some of their plants are like those of the old coal, and that the beds repose conformably upon and pass down into strata with true Mountain limestone fossils, holds the opinion that the coal is of Palæozoic age. As Mr. Clarke after citing a case where the coal-seams and plants were reached below Mountain-limestone fossils, expresses a hope that Mr. Gould may detect in Tasmania some data to aid in determining this question, I take this opportunity of stating that I will lay before this meeting a communication I have just received from Mr. Gould, in which he says that in the coal-field of the rivers Mersey and Don, one of the very few which is worked in Tasmania, he has convinced himself that the coal underlies beds containing specimens of true old Carboniferous fossils. Remarking that these relations are so far unlike those which he observed on the eastern coast of the island where the coal over-

* While this sheet is passing through the press, we are in receipt of a letter from Walter Mantell, Esq., of New Zealand, dated Auckland, Aug. 30. in which he confirms the discovery of new gold fields in New Zealand. "This discovery," he adds, "is important rather in a political than in a scientific light. In my last conversation with Sir Roderick Murchison, he declared his conviction of its existence, and now no one doubts it. By the last news, we hear of a man and a boy getting five lbs. in seven days, &c. Our natives had no metal nor any knowledge of metals despite the quantities of gold now turning up. The non-utilization of this by so observing and ingenious a race is a strange fact."—Eds.