

After the coup d'etat of December 2, 1851, Arago refused to take the oath of allegiance, which was required of him in his capacity of director of the Observatory, and thus made manifest once more that politics ought to be kept aloof from Science.

A life of so much labour had worn down his health. Although attacked with diabetes, he still contemplated putting the last touch to his unfinished works. Bright's malady set in and aggravated his situation, which was complicated with dropsy of the abdomen, attended with effusions, and swelling of the extremities. All announced his approaching end: yet his mind was not for a moment obscured. Shortly before his death, although blind, he superintended in some difficult researches; he asked M. Babinet to prepare for him a table of more accurately determined numbers for the lengths of undulations, that he might bring to completion a memoir of interferences; and he finished the editing of his Physical researches on the Planets, &c. &c. He died in the midst of these arduous occupations, on the 2nd of October, at the age of 67½ years, a few minutes after having shaken the hand of M. Biot.

We have mentioned some of the works which Arago accomplished in his younger days. These works were completely eclipsed by the discoveries to which his name has since become attached, which embrace the following principles:—

1. The discovery of chromatic and rotary polarization.
2. That of Electro-magnets.
3. That of the magnetism which is developed when bodies are revolved near a magnet.

Arago was an Encyclopædic genius. Science, Literature, Political and Social economy, his vast intelligence embraced all with equal ability. His powerful faculty of assimilation, popularization, and of application of principles, placed him everywhere in the first rank. Whether Orator or Professor, he shone with brilliancy both in political and scientific assemblages. He was distinguished for the perspicuity and elegance of his style, and occupies an eminent place among the prose writers of France.

In the midst of so much grandeur, Arago led a most modest life. He considered as lazy whoever did not work fourteen hours a day; and such days were for him days of repose. Although so absorbed with his occupations, he still found time to appear in the society of Paris as one of its most spirited conversationists.

While devoted to continued labor, he completely forgot his own interests, and had only what was barely necessary for the support of his family. He left two children, one Emanuel Arago, an eloquent orator of the bar of Paris and of Republican assemblies, the other Alfred Arago, a distinguished painter. If he has not bequeathed to them a fortune, he has left an immortal name: he has created by his genius a renown more illustrious than all the renown ever gained by arms—which for a long time enjoyed the privilege of giving fame, but now yields the right to the peaceful conquests of science.

Geology of Gold.

The geology of gold may now be considered as tolerably well understood. *In situ*, it is found in the primitive rocks, granite, gneiss, mica slate, clay-slate, and porphyry; and having been freed from its original bed by the decomposition and disintegration of the rocks, and washed out by the rains, it is found in the beds of mountain streams and rivers, and in many alluvial soils in flat countries, through which mountain torrents occasionally flow. It is most frequently associated with quartz and oxides of iron, and with iron pyrites, sometimes with felspar, hornstone, calca-

reous spar, barytes, red silver ore, silver glance, sulphuret of copper, peacock copper ore, malachite, the various ores of lead, sulphuret of zinc, grey ore of antimony, cobalt, manganese, copper nickel, arsenical pyrites, orpiment; and this information will enable parties in possession of mineral lands to form a judgment whether specimens from them are worthy of a trial for the production of the precious metal. In addition to Australia, and the development of gold in Great Britain and Ireland, it is the opinion of Mr. Culvert, and many explorers in Canada, that the gold deposits discovered in the valley, and in the sands of the Chaudière River, will lead to the development of other highly important results in that colony, and we would here remark, that although Mr. Culvert's exertions are not duly appreciated in some quarters as they deserve, he undoubtedly is entitled to all credit as the principal pioneer in the present movement.

Central Africa.

Dr. Vogel in a letter addressed to Colonel Sabine dated Mourzuk, October 14th, 1853, says:—

"There is no regular rainy season at Mourzuk; but slight showers occur sometimes in the winter and spring; seldom in the autumn. Heavy rain is considered as a great calamity, as it destroys all the houses, which are built of mud dried in the sun. It also kills the date-trees, by dissolving the salt which exists in large quantities in the soil. About 12 years ago about 12,000 date-trees perished in the neighbourhood of Mourzuk, on account of rain which continued for seven days. The prevailing winds are south and east; the strongest generally west or north-west. I have seen whirlwinds two or three times pass through the town,—a phenomenon which was common in the desert between Bencolua and Mourzuk: all the whirlwinds which I observed turned from the east to north, and went to south.

"In December and during the first half of January, the thermometer falls at sunrise, at Mourzuk, as low as 42°, and in places exposed to the wind water freezes during the night. At Sakna, I could not find any one who could remember having seen snow. At Tripoli we had heavy dews at night, and I observed the same until we had passed a small chain of mountains fifteen miles north of Sakna. Thence we had no dew, and it was often impossible to obtain the dew point with Daniell's hygrometer. In the desert the thermometer generally rose till 4 P. M., from the sand (which was sometimes heated to 140°) giving out its heat. Earthquakes are sometimes felt. Great numbers of shooting stars were observed on the 7th, 8th, and 31st of July; very few on the evenings of the 9th, 10th, and 11th of August; but they were again very numerous on the 1st, 2nd, and 3rd of October."

On the Food of Man.*

BY DR. LYON PLAYFAIR, C. B., F. R. S.

The author commenced by adverting to our very imperfect acquaintance with the statistics of Food. We are still ignorant regarding the quantity of the different proximate constituents of aliment necessary for man's sustenance, even in his healthy and normal condition. If the question were asked—How much carbon should an adult man consume daily?—there would be scarcely more than one reliable answer, viz., that the soldiers of the body-guard of the Duke of Darmstadt eat about 11 oz.† of carbon in the daily supply of food.

*This is an Abstract of a Lecture given at the Weekly Evening Meeting at the Royal Institution, Friday, May 6, 1853.

†Liebig states it at a higher amount, but this is a re-calculation from the new food table.