

Science News a Century Ago

Government Experimental Distillery

THE issue of *The Times* of October 12, 1837, gave an account from Government papers of the Government Experimental Distillery, by which it was anticipated several millions a year would be added to the revenue and illicit distillation be suppressed. "The extensive premises, formerly the Hope Brewery, in Brown's-lane, Spitalfields," said *The Times*, "having recently been fitted up as an experimental distillery upon a large scale, under the superintendence of Dr. Birkbeck, by order of the Lords of the Treasury, for the purpose of testing the efficiency of Mr. Rudkin's apparatus for taking the excise on spirits in process of distillation, several preparatory distillings have taken place during the last fortnight, and yesterday the distillery was set at full work. The experiment so far has been in the highest degree satisfactory and in the opinion of Dr. Birkbeck and other scientific men sufficiently conclusive as to the utility of the invention."

The instruments previously in use were the saccharometer and thermometer, but "the utter inefficiency of the saccharometer and the thermometer for the purposes for which they are used has long been well known", and it has been declared that "there is at present no security for the collection of any portion of the revenue, except in the conscientiousness of the distillers. . . . Government, chiefly through the medium of the Royal Society, has long applied itself to remedy this evil. About 70 years ago Lord George Cavendish carried out a series of laborious experiments for this purpose, which led to no results, and upon his failure the matter was committed to Sir Joseph Banks; but his labours were attended with no better success". According to Dr. Birkbeck, however, Mr. Rudkin has solved the great and important problem. "If his instrument eventually realises his professions . . . it will do away with all the inconveniences of the present system . . . as it registers the quantity, temperature and strength of every gallon of spirit as soon as produced, and before it comes under the control of the excise man and distiller."

Faraday's Diary

FARADAY'S Diary contained not only his notes on experiments but also his queries, references and reflections. Under the date October 14, 1837, he wrote:

4048. Charge of clouds. How do they become electrified if there be no absolute charge?

4049. No charge from breaking up sulphur or change of state.

4050. Nature of discharge through cracks in glass.

4051. Is Fischer's observation on variation of conductivity of platina sound or no, and if it is, what bearing will it have on thermo-electricity? Bib. Univ., 1831, xlvi, 267.

4052. Matteucci—Expts. on Evaporation of water from soil as a source of Electricity. Bib. Univ., 1834, lvi, 328.

4053. *Thermo-electricity*. Is it possible Peltier's experiment (Bib. Univ., 1834, lvii, p. 181) can be true, i.e. that a thermo electric current produced such an effect elsewhere as to create an opposite current *greater* than the original?

4054. Electricity in motion penetrates bodies. Statical Electy. does not, but is superficial. The

reason of this is evident on the particle action theory without breaking in on a law or requiring a new one. Before the conduction took place and after the communication was completed, both insulating and conductive particles were polar—but one can equilibrate or discharge more than the other.

4055. *Induction*—Nobili has some general facts in very good relation to induction. Bib. Univ., 1835, lix, pp. 275."

Caverns in Brazil

THE October 1837 issue of the *Gentleman's Magazine* contains the following information: "Dr. Lund, the Danish traveller, now in Brazil, has discovered in the mountain chains between the Rio Francisco and the Rio das Velbas a great number of caverns; among which Sappa Nova de Maquiné, in the Sierra de Maquiné, is one of the most remarkable. The mountain consists of clay slate, flinty slate and limestone of the transition period, in which last is the cavern described; the total length of which from north to south is 1,440 feet, the height being from 30 to 40 feet, and the breadth from 50 to 60. It is separated by masses of stalactite into twelve divisions, of which only three were known before Dr. Lund explored them. The others, especially the innermost, were of such extraordinary beauty that his attendants fell on their knees and expressed the greatest astonishment.

"On the River Velbas, the banks of which the traveller afterwards traversed, the vegetation assumes a peculiar character. The inhabitants call the forests *catingas* (white forests). They form a thicket of thorny trees and bushes interwoven with parasitical plants of the same nature. The leaves fall in August, and from the beginning of September till the rainy season the *catingas* are as bare as European forests in winter. On this excursion Dr. Lund had an opportunity of examining nineteen caves, all of which confirmed his opinion of their geological formation. He has collected many remarkable particulars respecting the circumstances which must have taken place in a great inundation, as well as respecting its effects, and convinced himself by several indications, that its course in South America was from north to south."

German Scientific Association

"SOON after the meeting of the British Association at Liverpool," said the *Mechanics' Magazine* of October 14, 1837, "its German prototype the Society of 'Enquirers into Nature' (Naturforscher) held its fifteenth annual assembly at Prague. The object which seems to have attracted most attention this year was an apparatus for the production of powerful electric streams by means of steel magnets operating on a multiplying conductor. It was exhibited and explained by its inventor, M. von Ettingshausen, professor of physics in the High School at Vienna. This gentleman acknowledged that his apparatus bore some resemblance in principle to that invented for the same purpose by Mr. Clarke in London, and that it was by no means superior in power, but contended that the apparatus was the more simple and convenient of the two." It was agreed to hold the next meeting of the Society at Freiburg, in Baden, to afford an opportunity to Prof. Oken, the founder of the institution, "to be present at the operation of his own new apparatus, for the production of electric streams of science, from which he has been for ten years an unwilling absentee".