

Colonel Botha described the duties of the archivist in relation to arrangement, classification, inventory and catalogue, and touched upon the physical defence of archives, covering the repository and accommodation, and their moral defence, referring to their reception and arrangement, in which he must study the administrations concerned, their history and organization, and divide them into classes and subdivisions of these; while the secondary duty of the archivist relating to the special requirements of the student covers the preparation of guides, lists, inventories and catalogues of his archives. Full transcripts must be prepared and published under an editor to meet the needs of the student resident at a distance. He also dealt with the problem of selection and destruction.

Finally, in illustration of his contention that archives are the material of history, Colonel Botha outlined from the records preserved in the archives, the history of the national roads in South Africa, the creation of a national road fund, and the constitution of a National Road Board in 1935, of which the story is disclosed in the archives by records of South Africa's early road system and its administration from the seventeenth century onward.

In conclusion, the science of archives may be likened to a venerable sage, who seeks for the authentic traces of man and his doings in the past and, finding them, preserves and jealously guards them. His eyes are glowing with wisdom drawn from the mass of evidence of man's past accomplishments, his failures and successes, as treasured up by him with tender care; ever ready to reach a helping hand to men of the present day in their struggles to move onward the ship of human progress, often doing so with an encouraging smile and reference to the Solomon of Biblical times: "there is nothing new under the sun"; and he appeals insistently to one and all to view the present unfolding of our grand and wonderful universe in the light of the ages gone by.

## Science News a Century Ago

### Lyell in Germany

WRITING from Wesel on the Rhine on August 29, 1837, to Darwin, Lyell said, "I write this to you, at least I am beginning it, in a steamboat on the Rhine, so make allowance for the tremulous motion. We came in a steamer from Copenhagen to Lübeck, then in a hired carriage to Hamburgh, across the sand and boulder formation of the Baltic, which for the most part we have been on ever since, although we have crossed the Weser, and Ems, and Lippe. The blocks of red syenitic granite, which I hammered away at in Norway, and which I saw there *in situ* sending its veins into the trilobite and orthoceratite schist, have been carried with small gravel of the same, by ice of course, over the south of Norway, and thence down the south-west of Sweden, and all over Jutland and Holstein, down to the Elbe, from whence they came to the Weser, and so on to this or near this. . . ."

"This then was already dry land when Holstein, and all from the Baltic as far as Osnabruck and the Teutoburger Wald hills, was submerged. At Bremen I saw Olbers, aged seventy-two, the astronomer who discovered Pallas and Vesta, and at Osnabruck and Münster I met a warm and German reception from men of whom I had never heard, who had read

my paper on Sweden or something else. I mean by German, that kind of frank expression of enthusiasm for science, or of any emotion, which a well-bred Englishman tries to suppress, at least all outward expression of it, from the dread of being thought ridiculous, or of affecting to feel more than he does, or from *mauvaise honte*. If you ever get sick of that fashionable nonchalance which would blush to admire anything, or at least to confess it, I advise you to plunge into Germany, and you will be soon refreshed and brought back to the right tone again, whether it be literature, science, or any other pursuit you are following. . . ."

### The First Steam Frigate

ON August 31, 1837, H.M.S. *Gorgon*, the first steam vessel in the Royal Navy designed as a frigate, was launched at Pembroke. Designed by Captain (afterwards Admiral) Sir William Symonds, the Surveyor of the Navy, the *Gorgon* was 178 ft. long, 37½ ft. beam and 1,108 tons burthen by the rule known as Builders' Old Measurement. She was noteworthy not only as being designed as a frigate, but also as being the first vessel in the Navy to be fitted with John Seaward's direct-acting engine, instead of a side-lever engine, by which a considerable saving of weight was effected. The cylinders were placed directly beneath the crankshaft driving the paddle wheels. They were 64 in. diameter with a stroke of 5½ ft., the engine being of 320 nominal horse-power. The boiler pressure was 5 lb. per square inch. The total weight of the machinery, including the water in the boilers, was 276 tons. Service in such vessels was eagerly sought after by far-sighted young naval officers, and among those who served in the *Gorgon* was Admiral Sir Astley Cooper Key, who as a lieutenant exchanged from the *Curacoa* into the *Gorgon* and in doing so spoke of it as almost a change of profession. "Being in a steamer", he wrote, "has given me a much greater interest in the service than I had before, from having, I suppose, an object in view to which I feel myself suited." On another occasion he wrote, "I study De Pambour and Tredgold daily".

### The British Association at Liverpool

IN its issue of September 2, 1837, the *Athenæum*, referring to the forthcoming meeting of the British Association at Liverpool, said that while there had been no doubt as to the really excellent fruits of the morning meetings, the same satisfaction had not been felt regarding the evening meetings, which had been intended for diffusing among the general body of members "some part of the treasures of knowledge collected and purified in each Section". There was therefore to be a change of plan. "The great want of opportunity for cultivating mutual acquaintance and enjoying friendly discussion—a desideratum felt with increased force at every Meeting succeeding the embryo sitting at York—will be met by devoting at least two evenings to a pleasurable Promenade and Conversazione in the magnificent apartments of the Town Hall, which the Mayor and Council have most liberally placed at the disposition of the Association. Thus the evenings may offer an agreeable relaxation after the morning work—the men of abstract and practical knowledge may be mingled together, and both brought into friendly intercourse with those numerous friends of the Association who attend the meetings to gather knowledge, and those whom they esteem as leaders of science."