

of several ordinary men, and continued to discharge the onerous duties of his multifarious offices for nearly a decade after he had passed the allotted span of human life. Even the brief but well-earned respite which he enjoyed after his retirement in January, 1905, was not free from toil, for, except when he was prostrated by illness, he continued to supervise the astronomical and meteorological work at the Adelaide Observatory and to fill other semi-public positions. During more than 60 years the deceased astronomer was a brilliant and devoted servant of the State in two hemispheres, and he was entitled to rank among the Empire builders of the nineteenth century.

#### —Early Appointments.—

Sir Charles Todd was born at Islington, England, on July 7, 1826, and was educated at Greenwich. On December 6, 1841, he entered the service of the Royal Observatory at Greenwich as astronomical computer, Mr. Airy (afterwards Sir George Airy, K.C.B.), Astronomer Royal, having undertaken the reduction of the Greenwich observations of the moon and planets from 1700 downwards. He left the Observatory temporarily in 1845, but went back in 1846. At the end of 1847 the Rev. James Challis (Plumian Professor of Astronomy of the University of Cambridge) offered him the position of assistant astronomer, which he accepted. He joined the Observatory early in January, 1848. In May, 1854, Mr. Airy wrote asking him to go back to Greenwich to take charge of the new galvanic department, and also as assistant astronomer. When in charge of that department he was responsible for the transmission of time signals throughout England and the dropping of the time balls. While at Cambridge he made a galvanic determination of the difference of longitude between Greenwich and Cambridge. In February, 1855, he had occasion to visit Deal, some trouble having occurred in the dropping of the time ball at the Royal Dockyard, and it was during a brief stay at Tunbridge on his way back to headquarters that he received from Mr. Airy a letter offering him, in behalf of the Colonial Office, the position of Superintendent of Telegraphs and Government Astronomer in South Australia.

#### —A Romantic Episode and a Prophecy.—

The young scientist was not 30 years old when he received that flattering offer, but lack of years was more than compensated for by ability and experience. Up to that time his life had been an almost unbroken term of toil. In later years he frequently remarked that youngsters of the present day did not know what work was compared with what it was in his generation. The school he attended as a boy was about a mile and a half away from his residence. He had to be there by 7 o'clock, and his studies did not terminate till 8 o'clock in the evening. When he met Sir G. Airy, who was said to have no bowels, he found in him a sincere friend, although he was determined to get as much work as possible out of every one under him, and to make them do their duty. Sometimes they would be engaged for eight hours off the reel in endeavouring to dispose of abstruse calculations. In spite of exacting taskmasters and his own insatiable desire to acquire knowledge, however, he evidently found time for lovemaking, for when Sir George Airy made him the offer that proved to be the turning point in his career he boldly confessed to his friend and benefactor that he did not know whether he could accept the position—"at least," he added naively, "not until I ask a certain young lady at Cambridge." His great chief promptly advised him to consult the lady, and within a very short time he was able to announce that he would go to the antipodes, but not alone. It is interesting to note that on his wedding day Sir Charles Todd was prophetic. Replying to the toast of "The bride and bridegroom," he remarked that he was going out to Australia, and he hoped "he would be instrumental in bringing England and Australia into telegraphic communication!" a prediction which was to be fulfilled earlier than he could have hoped when he uttered the sanguine prophecy.

#### —Enterprise and Elbowroom.—

When the future Postmaster-General of South Australia landed on these shores he found "plenty of elbowroom," and as he was a young man "determined to make his way" he was not long in finding ample scope for his skill and scientific ability. He arrived at Port Adelaide in the Irene on November 5, 1855, and by a curious coin-

idence the first telegraph line constructed in the province—a cheap private wire from the city to Port Adelaide—was completed on the same day. As soon as practicable the capital and the chief seaport were connected by a Government line, which was opened in February, 1856. Referring to this incident in a valedictory address shortly before he severed his connection with the department, Sir Charles remarked—"We must not despise the day of small things. When the Government built their line to Port Adelaide I was able to assure the Treasurer that it earned £8 in one month. On some days the receipts at the Adelaide office fell to 1/3 a day. It required an acute accountant in those days, I am sure. The beginning was small, but now, what have we got? South Australia has to-day 20,000 miles of wire, and who, as he walks the streets, is not able to say that the State is well posted up? This quaint way of stating the matter fairly illustrates Sir Charles's intense fondness for punning in sheer lightness of heart. Business rapidly increased, however, and eventually the Government purchased Mr. MacGeorge's private line and had it dismantled. From that time until he relinquished his official position nearly half a century later Sir Charles Todd was constantly engaged in planning extensions of the telegraphic service of the State, which was inaugurated in such a modest manner.

#### —Some Pioneer Episodes.—

In June, 1856, Sir Charles Todd, with that fertile genius which always distinguished him in his great works, conceived the idea of putting into practical effect Oberon's fanciful idea of girdling the earth in 40 minutes—or less. He recommended the connecting of Adelaide and Melbourne by telegraph, and this scheme was the forerunner of his great project which a few years later was to connect the old world and the new. He was dispatched to Melbourne to negotiate, and when there was the guest of the late Mr. H. C. E. Childers (then Commissioner of Trade and Customs), who subsequently became Chancellor of the British Exchequer. The Superintendent of South Australian Telegraphs, having persuaded the Melbourne authorities to fall in with his ideas, rode back to Adelaide on horseback, visiting Portland, Mount Gambier, and Penola, and fixing the route of the line. Those early and lonely journeys were not devoid of adventures and interesting experiences. During his solitary ride through the south-eastern districts on the occasion referred to, for instance, Sir Charles Todd pulled up one evening at a shepherd's hut and enquired of the occupant whether he might stay there for the night. "Do as you like," was the rather uninviting rejoinder. "Then I will," he replied, and at once hobbled his horse. "We had some damper and a billy of tea," he remarked in relating the story, "and, noticing a homemade chessboard, I suggested a game. We became quite friendly, and the lonely shepherd told me his history. He was a Master of Arts at Oxford!"

#### —Connecting the Capitals.—

In due course the line from Adelaide to Sydney was completed, and on its accomplishment Sir Charles utilized it for the purpose of determining the 141st meridian, and thus fixing the eastern boundary of South Australia. With the aid of transit instruments longitude signals were exchanged between Melbourne and Sydney, and Sir Charles by that means fixed the boundary, and found that it should be two and a quarter miles further eastward. Thus arose the disputed boundary question, which has caused so much controversy and no little friction between South Australia and Victoria, and which is now awaiting legal settlement in the Courts. Sir Charles Todd had the satisfaction in 1884 of having the position of his boundary well confirmed. In that year longitude signals were exchanged between Australia and England, and the 141st meridian was found to run within a few chains of the line where in 1867 he had erected a brick obelisk to mark the boundary. The interstate line was extended to Brisbane in 1861, but prior to that date a submarine cable had been laid across Bass Straits to connect Tasmania with the mainland. Sir Charles Todd was present at the laying of the first cable in Australian waters, having sailed to the locality in the ill-fated *Admella*, which was wrecked during her next trip.

#### —The "Overland Line."—

The work with which the name of the late Sir Charles Todd will always be most closely associated was the construction of the transcontinental telegraph line, which constituted an important link connecting the old world with the new. He conceived the idea of linking Adelaide with Port Darwin by wire in 1859, but it was not until several years later that he was able to give effect to his idea. The magnitude of the undertaking can be adequately appreciated only by those acquainted with the character of the land through which the line

passes. Two thousand miles of unknown country had to be spanned and everything carted. Altogether 35,000 poles had to be carried, to say nothing of wire and other materials and supplies for the construction parties. Two wires now run across the continent, and the distance between the poles has been shortened. In 1859, after reading an account of A. C. Gregory's exploration from the Victoria River to Moreton Bay, Sir Charles first conceived the feasibility of a line through the continent, and in July of that year he submitted his views in writing to Governor MacDonnell, who embodied them in a despatch to the Secretary of State. The successful journey of John McDouall Stuart confirmed the conclusion of the Superintendent of Telegraphs, and led him to oppose the schemes of the Anglo-Australian and China Telegraph Company for laying cables from Singapore to Moreton Bay. In reporting on these projects in 1863 Sir Charles Todd wrote:—"Whatever differences of opinion may have previously existed as to the practicability of making the vicinity of Van Diemen's Gulf the terminus of the land line, the return of Messrs. McKinlay and Stuart can leave no room for further doubt. The erection of an overland telegraph line to the north coast should be regarded as a national work, in the carrying out of which all the colonies should unite." An offer was made to the other colonies to take a share in the great national work. They declined, and South Australia went ahead with the enterprise. In 1870—the year in which Sir Charles was appointed Postmaster-General, in addition to being Superintendent of Telegraphs and Government Astronomer—the Strangways Administration

was to connect with the cable which was projected between Java and Port Darwin. With the exception of the Stuart exploration party, nobody knew anything then about Central Australia. There were, of course, no roads—not even the roughest of tracks—and the only knowledge possessed was that the interior consisted of great stretches of dry country and heavy sandhills.

#### —How the Work Was Done.—

The story of the methods by which this stupendous undertaking was accomplished cannot be described more graphically than in its author's own words:—"The work was authorized by Parliament in 1870, and completed in August, 1872. The line was carried from Adelaide to Port Darwin, a distance of nearly 2,000 miles, and it went through at least 1,500 miles of terra incognita, except what we knew from Stuart's valuable reports. The route the great explorer took was adopted. I divided the line into three sections. The first 500 miles was done by contract. The centre section, extending from a little northward of Oodnadatta to about latitude 19, was undertaken by the Government, and from thence the work to Port Darwin was let on contract. The central was the longest and most difficult section, and it was first completed. I cut the central section up into five subsections. The contractor broke down in carrying out the northernmost section, owing to the difficulties of the country, and we dispatched Mr. Patterson, the assistant engineer, to continue the work. Some 500 bullocks and 250 horses were sent round by sea to Port Darwin. Mr. Patterson encountered severe monsoonal rains, and work was further hindered. Finally, in January, 1872, I went round in the *Omeo* to assist in the work. The *Tararua* followed in our wake. On arriving off the mouth of the Roper I found it necessary to take the vessel up the river, the *Young Australian*, the boat we had sent round from Albany, not having arrived. The captain of the *Omeo* would not risk taking the boat up, as he thought it might invalidate his insurance unless I would guarantee him from all loss. This I did. Then I instructed the captain to go in a boat to the bar, and signal when there was plenty of water to cross. Finally we took the *Omeo* some 80 miles up the river, and the *Tararua* followed later on. The *Young Australian* arriving two or three days later, we transhipped material, &c., from the *Omeo* into her, and then proceeded up to the landing. We took careful soundings all the way, and as there was plenty of water I did not hesitate about the trip. After making arrangements for the necessary cartage of stores, materials, &c., to the interior, I proceeded in the *Young Australian* to Port Darwin, and returned to the Roper River. From thence I travelled overland inspecting the work and finalizing arrangements at the different stations. At Central Mount Stuart I had the pleasure on August 22, 1872, of completing communication between Adelaide and Port Darwin. The cable, however, had broken down, and it was not restored till October 21, when communication was established with England. On November 15 banquets were held in Adelaide, Sydney, and London to celebrate the event. That was when I was made C.M.G."