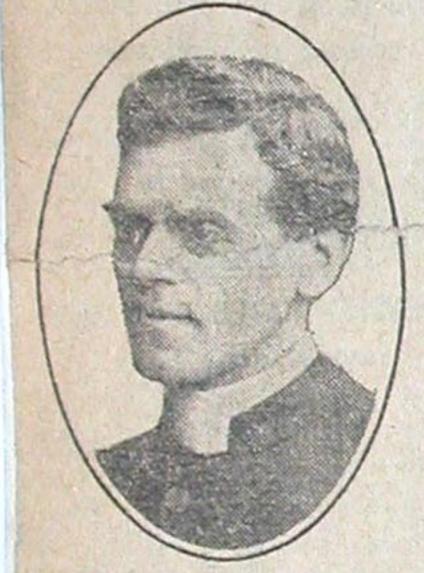
dral, Bishop Thomas said in his recent sermon that more remained for benefactors to do. It was hoped that the whole of the Cathedral would one day be panelled with to the present time has been between with the movement of the earth from one oak to a height of about seven feet. They



The Right Rev. Dr. J. R. HARMER (Third Bishop of Adelaide, and now Bishop of Rochester).

wanted a children's corner, where the chil-terial. This work has been carried out. dren might have their own possessions, such as books, pictures, and other interests. He also trusted to see other portions of the Cathedral furnished as chapels, as the missions of the church, the C.E.M.S., boy scouts, the Mothers' Union, the Girls'



The Right Rev. Dr. A. N. THOMAS (Fourth Bishop of Adelaide).

the case in the past."

Dunn).

### The First Service.

The following is an extract from "Thein towards that plane. Advertiser" of June 30, 1876, relating to the first service in the Cathedral:-

o'clock the clergy walked through the Magellan clouds. Telescopic and vice was chanted as before. Bishop Short tion. Their spectrum showed that what dential certified by a responsible person, phrase as a prayer and to give power to based his sermon on the words:—'What ever they were not wholly a responsible person, phrase as a prayer and to give power to based his sermon on the words:—'What ever they were not wholly a responsible person. based his sermon on the words:—'What ever they were not wholly Another point of difference between the the rest. The full house complied with shall I render unto the Lord for all His gases. Their motion could also be ascer- arbeives and the Public Lib between the the rest.

Woods, of Adelaide, and the contract has at least five direct and indirect methods been corried out by Measts Brown and of determining solar distance. The most

vice are the holy table, its inrniture, the font, organ, choir, and other seats, iectern, reading desk, and pulpit, sittings for the congregation, fittings for gaslights. The fact of three fine memorial windows, namely, to the founder of the cathedral, Dean Farrell and his wife and Lady Fergusson, having been ordered and beautifully executed by Walles & Co., of Newcastle-on-Tyne, made this extension of the works still more necessary, in order to get rid of a painful contrast between rude unfinished walling and those fine works of art. Accordingly, the Bishop ordered the whole window to be filled with stained glass, the ceiling of the chancel to be stencilled, and the woodwork of the transepts stuccoed. These works have been executed at a cost of £709 9/. It then only remained to put in a concrete floor and Mintaro slate steps ascending from the nave to the chancel, with pipes for gasservice, to render the building capable of being occupied and ready for further ornamentation by Minton tiles or other ma-

### REG. 20.6.26 STRUCTURES OF THE UNIVERSE.

LECTURE BY PROFESSOR KERR GRANT.

Professor Kerr Grant delivered first of a series of three University extension lectures on physics and astronomy at the Adelaide University on Tuesday night. The subject of his address was "The contents and structures of the universe. The other lectures in the course will be

delivered on July 6 and July 13, The Professor, in his opening remarks, said that the number of stars visible to the unassisted eye was actually only a iew thousand, but many more were seen by the use of telescopes and the photographic plate. A photographic survey of the heavens now in progress would certainly reveal hundreds of millions. The question of whether the stars, like the sun, had a family of planets, could not be answered, for if they did exist they were not detectable, but about 40 per cent. of them were certainly married, and known as binary stars. He gave several well known examples. Some stars were polygamous, groups of three, four, or more. The arrangement and distribution of stars in the heavens was a very remarkable one, even to the naked eye. The Friendly Society, the Navy and Army, and most conspicuous feature was the broad the ministry of healing, all merited the belt of thickly clustered stars known as help that a special corner of the edifice geometrical characteristics, it exhibited might give. "We do not live in the past," the greatest irregularity of structure, in the Bishop said. "We live in the pre- width, and in star density. The milky sent, and in the days to be. The Cathe-clouds were multitudes of stars, and in dral is the power station of the spiritual certain parts the number on photographic life of the diocese, and we hope those out be counted. Passing from the plane of side of Adelaide will make more use of the Milky Way, the number of stars bethe facilities offered even than has been came rewer. The generally accepted explanation was that the stars in that part The staff of the Cathedral at present of the universe were aggregated into a comprises the Bishop (Right Rev. Dr. comparatively flat region of surface. Our Thomas), the Dean (the Very Rev. G. centre of this mighty swarm. Inside the E. Young), the Precentor (Rev. Canon galaxy there was the greatest diversity of Milne), the special preacher (Rev. P. Car-structure. None of the clusters seen from rington), and the organist (Mr. J. M. the earth were actually within the boundaries of the Milky Way, although none were very remote from it. What was still more remarkable, nearly all were moving

Remarkable Magellan Clouds.

Two of the most remarkable objects in "About twenty minutes before Sthe southern sky, said the speaker, were shall I render unto the Lord for all His gases. Their motion could also be ascer- arheives and the Public Library is that the request, and the effect was most strik towards me?—Psalm CXVI. "The plans for the cathedral were pre- exceptions they were receding with energin the building, and again, lighted pipes, pared in England by Mr. Butterfield, but mous velocity from that region of space cigars, and cigarettes are banned. were afterwards modified by Mr. E. J. occupied by the solar system. There were

Thompson, at the cost of from £15.000 to accurate of these depended upon the shift £16,000. The present building includes in the apparent position of a relatively the chancel, the choir, the transepts, and near star in relation to others so remote one bay of the nave. The expenditure up that they showed no change in position £15,000 and £16,000, and the total cost extremity of its orbit to the other. The of the complete building is estimated at nearest star had a parallax of four-fifths about £25,000. While the scaffolding was of a second, and a distance therefore of With the object of cultivating in the still standing, both on the exterior and about four light years. Another method youthful mind a taste for better-class in interior of the building, it appeared expe- was based on the fact of the apparent strumental music, a concert for the special dient on the score of economy to proceed brightness of a star dependent not only benefit of school children was given by if possible with glazing the church and on its absolute magnitude, but also on its the South Australian Orchestra in the Exfinishing for divine service the chancel and distance. The vast distance implied an hibition Building last evening. It is estiorgan transept. The further requisites almost inconceivable magnitude for any mated that there were 2,500 children pre-before opening the church for divine ser-object visible to the eye.

#### Bulk of Millions of Suns.

Observations of the Andromeda nebulae, said the professor, showed that unless rari- to children, by the orenestra, and the fied beyond all conception, the total opinion was expressed by those present amount of material in it must be sufficient that more of such concerts would be atto make millions of suns. On this ac preciated. Enthusiastic supporters of the count one felt inclined to accept the elder orchestra hope to persuade the Govern Herschel's speculation that the spiral nebulae were island universes, counterpart concert given last evening proved that the of the galaxy to which our own solar sys orchestra is an institution which should on tem belongs. Another theory held by cupy a permanent place among the educaleading British authorities was that they tional organisations of the State, and that it were vast clouds of dust of impalpable should be placed upon such a basis that fineness expelled from the galaxy by the there need be no fear of financing it with radiation pressure of the light of itse mil- success. The orchestra was conducted by and have ceilings to be varnished, also the lions of stars. Astronomers in general, Mr. W. H. Foote, A.R.C.M., with Miss chancel and organ transept walls to be however, seemed to favour the earlier con- Sylvia Whitington, A.M.U.A., as princh

cention. According to Einstein's theory of rela- Harold Parsons, Mus. Bac. ('cello), Miss tivity, the distinction between space and Mignon Weston (coc. Anglais), and Miss time was not an absolute one. An ob- C. Pether (flute). server on the earth would not assert that In opening the proceedings Dr. Harold two events such as the striking of the Davies welcomed the Minister of Educahour of 12 on the Post Office clock was tion (Hon. L. L. Hill) and the Director separated by no interval of space and by (Mr. W. T. McCoy). He told the chilprecisely 12 hours of time. But an ob- aren he wanted them to have a good time server on a rapidly moving star from that night. Before they began he askel whose point of view the earth was in them to promise, no matter how much rapid motion, would assert that the same talking and laughing they indulged in betwo events were separate by an enermious tween the various items, that when Mr. interval of space, and by an interval Foote came on to the stage, and the orin time which, accurately measured, was chestra played, they would be as still as not precisely 12 hours. Those two state- mice. Dr. Davies then delivered an adments could be reconciled by the fact that dress on the question, What is music!--while there was neither actual space nor reported in another column-and was listtime there was an absolute world in which the two were fused into unity the same for all observers. This was the sters, however, when the speaker referred four dimensional space-time continuum, which, however, could never as a whole be the object of perception. The presence of matter in the universe called for a space-time geometry, which more a relation to Euclid's geometry of four dimensions in some respects analogous to that which geometry on a sphere bore to geometry on a plane surface. It had been observed in regard to spiral nebulae that the time interval of two events depended upon the distance from the observer in such a way that the velocities tended to become more and more in a direction away from the observer, the further the event from the observer. This was in accord with de Sitter's theory. It thus appeared

26.6.26

the structures of the world correspond.

# AMONG RARE DOCUMENTS

## DELVING IN THE ARCHIVES

### South Australia in Retrospect

In a secluded little building at the rear of the Museum renoses a collection of records and documents of rare historical value.

They represent the South Australia of the past, and cover the period from 1836 to somewhere about 1280.

The photographic observation showed that they The exact monetary value of the collec-Ven. Archdeacon Marryat acted as contained star groups in clusters, of all tion which is in the Archives Department director of the ceremonies, and the Ven. magnitudes, and were really like the de-can never be assessed, but it is in the Archdeseon Dove as precentor. The Ven. tached portions of the galaxy. In the information contained in the documents. Archdeacon Marryat gave out the Psalms constellation of Orion, near the centre, and books where the real value lies, and (a) "Crardasz, dance Hongroise." The 24, 115, and 150, which were chanted by around one of the three stars that formed claborate precautions have been taken to the congress, the belt of the Hunter, was a small lurgical conductor explained that the music was the choir, accompanied by the congregation and day written for ballet dances, which perhaps the choir, accompanied by the congregation. The Magnificant having been chanted, nous area just visible to the unaided in and day out the door leading into the the audience would be able to visualistically the Rev. Canon Coombs, of Gawler, read eye. He showed a number of slides of building is locked. No document can be the Rev. Canon Coombs, of Gawler, read eye. He showed a number of slides of building is locked. No document can be the five-proof shelves with the second lesson from Chapter 4 of the star clusters and nebulae, including spiral removed from the fire-proof shelves with- interpreted and had an attentive and appropriate of the Apostles. The Nume Dimittie nebulae, which were the most interest out the permission of the archivist (Mar. Acts of the Apostles. The Nunc Dimittis nebulae, which were the most interests out the permission of the archivist (Mr. preciative hearing.

Was chanted, also the Belief. The Ven, ing mysterious objects in the heavens, G. H. Pitt. B.A.) or the assistant archiving the brass instruments archive hearing.

Archdescon Marryat then gave out Psalm and about which the opinions of compe-vist (Miss B. Threadgill). Anyone desiring National Anthem. The conductor then 34, verses 8, 9, and 10, which were sung tent astronomical thinkers were widely at to make extracts from the documents or played a few bars. The conductor the first as an anthem. The remainder of the ser- variance, even as regards their enumeras gain any information which were sung tent astronomical thinkers were widely at to make extracts from the documents or played a few bars. The remainder of the ser- variance, even as regards their enumeras gain any information which were sung tent astronomical thinkers were widely at to make extracts from the documents or played a few bars. as an anthem. The remainder of the ser- variance, even as regards their enumera- gain any information must possess a cre- requested the audience to sing the first value was chanted as before. Bishop Short tion. Their spectrum showed that what dential contified him and to give power to

## AUSTRALIAN ORCHESTRA. A

CONCERT FOR SCHOOL CHILDREN.

cont, besides a large number of adults, and a carefully chosen programme of popular orchestral selections was greatly enjoyed. The concert was the first of the kind given ment to grant financial help, which is greatly needed. They contend that the pal violinist. The soloists were Mr.

ened to with great attention. There was a derisive laugh from some of the young te arithmetic and grammar as useful subjects in education. The children behaved admirably during the playing of the

orchestra. The conductor explained the ideas in the mind of Rossini, the composer of the overture "William Tell," the first item on he programme. He said the overture was stended to bring to mind four scenesthe grandeur of the Alps, illustrated by the 'cello; a storm, by the full orchestra; a pastoral scene, in which were prominent the cor anglais, accompanied by the flute, in ornamentation; and the march of the Tyroleans, illustrated by the trumpets. At the request of the conductor, each of the performers on the instruments mentioned played a bar or two or the selection in that not only might a fourth test of the Illustration of their respective features. theory of relativity exist, but also a means. The overture by the full orchestra folof deciding the type of surface to which lowed. The item was brilliantly played, and the enjoyment of the audience was un-

> bounded. The well-known "Barcarolle" from Offerbach's "Tales of Hoffmann" was the next item. Mr. Foote said it required little explanation. It was just a delightial plece of music played between two acts of the opera and in the dark. On this or casion, however, the lights would be kept on. This number was also finely played by the orchestra, and heartfly applauded by the youthful members of the audience. The next number was the "Peer Gynt suite by Greig-"Morning," "The death of Ase," "Anitra's dance," and "In the hall of the mountain king." The conductor relar notice of the horns giving sunrise elfeets. In the death of Ass they would notice the strings were muted to give a plaintive and sympathetic quality of tone The wailing of the 'cellos, with a pleading melody leading to a dance, was the prome nent feature of the next movement. The final movement, said the conductor, represented the dancing of the goblins. A gent ral commotion was worked up, ending in the collapse of the castle. Intense appreciation was again shown by the younger The wall members of the audience. "Amoretten," by Gung'l the next item, was, said Mr. Foote, quite a classic in its construction and narmony. It was unusual in bringing a combination of instruments into play, which, if they listened intently, they would notice. The walts

was delightfully played, The final number was the ballet, "Coppelia." by Delibe -- (a) "Entract et valse conductor explained that the music was written for ballet dances, which perhaps