CANCER RESEARCH.

A most noteworthy bacteriological triumph, of the highest value to humanity, will have been achieved if Dr. T. J. Glover, of Toronto, has actually found and isolated a micro-organism which shall be proved to be the cause of cancer. The utter failure of intensive and painstaking laboratory experiments during the last 30 or 40 years to reveal the origin of cancer, and the distressing folly of encouraging in sufferers hopes which may be doomed to disappointment, render desirable extreme caution in the consideration of the claims advanced on behalf of Dr. Glover's discovery, as recorded in a cable message from Philadelphia on Tuesday; but the statement of a reputable journal, The North American, that publication of the information collected by Dr. Glover has been withheld for 15 months in the interests of science, has gone far to awaken among leading Australian medical practitioners lively interest in the claim presented. The Prime Minister has intimated that the Commonwealth Government will—through the agency of Mr. Donald Mackinnon, Australian Trade Commissioner in New York—make the fullest investigation regarding the outcome of Dr. Glover's experiments. As Mr. Bruce remarks, the discovery of a cure for this dreaded disease is a matter of enormous importance. In the House of Representatives recently, Sir Neville Howse, who had been appointed by the Federal Ministry to investigate cancer treatment in Europe, appealed for the foundation of a Cancer Research Institute in the Commonwealth. He emphasized that the increase in cases of cancer in Australia latterly is an alarming fact. One out of every eight persons who live to a reasonable age falls a victim to the malady. Dr. Mayo, a visitor to Melbourne, has somewhat mitigated the disquiet on the subject by explaining that the statistical increase is probably due to better methods of diagnosis, and to the changed age distribution of the people.

With the general improvement in public health the average duration of life has increased, and as cancer is prevalent mostly among persons who have passed the age of 45 years, the numbers who are liable to be attacked by it have been augmented. But the growing mortality from the malady in Australia renders urgent the need for unremitting scientific investigation to elucidate its causes, and to discover a possible cure. There are two schools of thought in reference to the war against the disease—those who believe in the existence of a definite causative infective organism, and those who think that cancer is not infective in origin, but a wild growth of tissues due to the removal of ordinary controls of normal growth. As Dr. Charles Kelleway, of the Melbourne Hospital, observes, it is claimed that Dr. Glover has recovered the infective organism from each case experimented with, and with it has infected other healthy tissues. If this be demonstrable by independent investigators, it represents an advance in medical science which may rank with the great discoveries of Lister and Pasteur.

While the conviction is commonly prevalent that cancer can be successfully combated only in its earlier stages, by means of surgery, evidence is said to be forthcoming that the disease is amenable to medical treatment. American technical journals, including The Medical Record of New York, have printed articles which maintain that cancer is a blood disease, and may be dealt with as such. Dr. Robert Bell, Medical Superintendent of the Battersea General Hospital, London, recently cited four remarkable cases from his own experience "as evidence of the benefit derived by treating victims of this inveterate scourge upon rational lines as opposed to operative measures." The treatment in these cases consisted chiefly of a reformed dietary. The food given to the patients was mostly composed of the juice of uncooked vegetables, fruit, milk, and eggs. Commenting upon Dr. Bell's testimony, Lord Dysart remarks that "Well-known doctors with the experience of many years of cancer investigation tell us that cancer is caused by the dietetic errors common to civilization, and that it can not only be avoided, but in many cases, actually cured, when these errors are corrected. . . . The question of the dietary, in its relation to cancer should be thoroughly explored." Not long ago Dr. Frederick Alexander, Medical Officer of Health for Poplar, expressed himself as being in agreement with the views of Dr. Forbes Ross, that cancer is caused by a deficiency of potassium in the system due to the systematic observance of erroneous dietetic and culinary methods. He suggested that a circular should be printed and distributed setting out the best methods of cooking vegetables, shortly stating the reason for their adoption, and the resultant benefits. Persons suffering from rheumatism and kindred complaints are dieted; and it is deemed to be not unreasonable to suppose that by correcting dietetic errors, and nourishing the body with entirely suitable foods, cancer may at least be averted, if not arrested or cured.

THE ATMOSPHERE.

RECENT INVESTIGATIONS.

LECTURE BY PROFESSOR KERR GRANT.

"Recent advances in the knowledge of the earth's atmosphere" was the title of a lecture delivered by Professor Kerr Grant, of the Adelaide University, before the Astronomical Society on Wednesday evening. Professor Chapman presided.

The lecturer said there were points of contact between his subject and astronomy. One of the charms of the advance in science was that it increased people's ignorance as well as their knowledge of the universe. There were many different aspects of the earth's atmosphere, but he would deal with only one or two of them. Prior to 1894 not a great deal was known of the rarer gases of the atmosphere. Lord Rayleigh and Sir William Ramsay, however, had found a new gas which had hitherto been identified with nitrogen, and called it argon. Exhaustive tests were made from the residue of liquid air, and four new gases were discovered, including helium, hitherto unsuspected as constituents of the earth's gases. These were called inert gases, as they did not mix with the other gases. Helium was lighter than hydrogen, and was used in the United States for dirigibles. The rare gas argon was used for filling electric lamps, and the result was a much higher efficiency in the lamp. Neon, another rare gas, was also used for electric lamps, and had the great merit of using very little power.

These gases, Professor Grant explained, had been of extraordinary value to chemists in their researches into the structure of the atom. No further advances in the scientific knowledge of the lower atmosphere had been made since 1905 or 1906. Quite recently Dr. Aston, of Cambridge, a Nobel Prizeman, in order to test the belief that there might be a very rare gas in the lower atmosphere, had subjected to analysis 400 tons of liquid air, and found all the gases known, including hydrogen, and not one other, so that it looked as if the gases contained in the lower atmosphere had all been discovered. The speculations about the existence of very light gases lighter than hydrogen were, therefore, probably without foundation. In addition to gases in the lower air there were both solid and liquid constituents. The liquids were mostly water, but the solids varied, including dust particles and salt from the sea. The atmosphere also contained nuclei of condensation. Dr. John Aitken showed that if the air was filtered through cotton wool, condensation could not take place. Aitken thought that any particle of dust would be effective, but recent researches showed that only particles which were absorbent, such as sea salt, proved effective. The character of nuclei was not yet very definitely known.

The knowledge of the higher atmosphere was derived from balloons and aeroplanes, which reached a height of five or six miles. Balloons with recording apparatus had been sent up to a height of ten miles, and the most important fact ascertained was that the temperature keptgetting lower to about 60 degrees below zero on the centigrade scale. At greater heights no variation of temperature occurred, though there might be a tendency for it to rise instead of fall. The two chief sources of information regarding still further heights were the passage of meteorites and the observation of the aurora. The flight of meteorites had been systematically observed. This was a field of observation which had scarcely been touched in Australia. From these observations it was thought that the temperature in these regions was as high as that near the earth. The aurora had been examined both spectroscopically and otherwise. Theodolite observations were taken from two positions, and the height of auroras was thus ascertained. Auroras very rarely reached below fifty miles from the earth. Observations had also shown that their height was as much as 600 miles. This was an almost credible distance. Auroras were produced by radiations from the sun, and were related to sunspots. Whenever auroras appeared there was bound to be a violent magnetic storm. Sunspots, auroras, and magnetic effects were all expressions of the one phenomenon. The radiations which produced auroras were either Alpha or Beta rays, and it was probable that both types of radiation occurred, but on this point they had not positive knowledge.

Spectroscopic analyses of auroras had shown a green line which was not due to any known gas. Lord Rayleigh, the son of the great physicist, had shown that this green auroral line was also present in night light as well as in the aurora. Other unknown lines had also been found in night light and auroras. These lines had not yet been produced by artificial means. In all probability they were due to some ordinary gas under extraordinary excitation. Spectroscopic analyses had shown that there was neither hydrogen nor helium in the upper atmosphere.

Dealing with electrical phenomena of the atmosphere, Professor Grant said he would pass by the common phenomena of lightning, many of whose manifestations still remained unexplained, but they might be due to extraordinary electrical currents from the earth. At all times and in all places the earth was discharging negative electricity into the atmosphere. This was a profound mystery in the field of terrestrial physics. There seemed to be positive evidence of a radiation of an extremely penetrative type in the air. This radiation must be ten times as penetrating as the strongest rays of radium. An attempt had been made to explain this phenomenon by postulating a layer of radio-active dust in the upper atmosphere, but this theory did not appeal to the lecturer, and the thing remained a profound mystery. There were still some very interesting problems to be solved in connection with the earth's atmosphere.

RAW SALT AND GOITRE.

In his lecture on the earth's atmosphere, before the Astronomical Society last night, Professor Kerr Grant condemned the use of fine salt in cooking. He said it had been conclusively proved that goitre was prevalent in those regions where sea salt particles were absent from the air. This was due to the action of the thyroid gland, which demanded the iodine which the salt particles contained. The fine salt used for culinary purposes had had the iodine taken from it in the refining process, and the manufacturer had made a profit out of the iodine as well as the salt. If he had his way he would prohibit the manufacture and sale of refined salt, as he considered the eating of raw salt, which was cheaper, far healthier.

At the beginning of next month the Director of the Elder Conservatorium (Dr. Harold Davies) will leave for Brisbane, where, in conjunction with Mr. Frank Hutchens, of the Sydney Conservatorium, he will lecture on musical education and the work of the Australian Board. On his return to Sydney he will meet the chief musicians of that city, at the instance of Mr. O. C. Beale, and deliver an address on the dignity of music.

DANTE.

LECTURE BY PROFESSOR PHILLIPSON.

In the Unitarian Hall on Wednesday evening, Professor Coleman Phillipson delivered a lecture on Dante before an interested audience. The 600th anniversary of Dante's death was celebrated last year, and the lecturer dealt with the life, work, motive power of the work, and the spirit of Dante.

Professor Phillipson said that 600 years ago one of the greatest of the sons of men passed away. The soul that blossomed in the world in joy and ecstasy passed under a solemn cloud in anguish and travail. Then he emerged in triumphant victory and glory. It was a remarkable age in which Dante lived. Florence, that city of flowers, was in many respects a mediæval counterpart of Athens. Into this age, and in this city, Dante Alighieri was born, between May 18 and June 17, 1265. The name Dante was a shortened form of Durante (Enduring), and Alighieri was originally Aldighieri, meaning "Wisdom of the spear." There was little information concerning his early life. He was left a young orphan, and his education was entrusted to Brunetto Latino, a statesman, diplomatist, and scholar, and later he studied the seven liberal arts of the time in the University of Bologna.

The lecturer outlined the political disturbances in Florence about the time when Dante reached manhood, and the events which led up to the banishment of the poet. In 1290 Beatrice, who had for three years been the wife of a noble Florentine, died, and her death was another important turning-point in Dante's life, for it impelled him to immortalise her, and express his wonderful admiration. About two years later he married Gemma Donate. His domestic life did not seem to have been happy. In that respect it resembled the experience of Milton with Mary Powell. For nearly 20 years Dante was a homeless wanderer on the face of the earth. In 1310 he made a final attempt to re-enter Florence. He hailed the Emperor, Henry VII., on his arrival in Italy, as the coming saviour of the country. But the death of Henry soon afterwards crushed the poet's hopes. He withdrew to a monastery for a time, in the mountains of Gubbio, and worked at his Divine Comedy. Finally the poet travelled to Ravenna, where he died on September 14, 1321, shortly after having finished his Divine Comedy. Such was the tragedy of his life. But his inner life! What a contrast to the pitiful ruin of his worldly existence. It was a long pilgrimage, embarked upon by a far seeing, unconquerable soul; inspired, animated, and uplifted by an unfaltering love and devotion, and leading at last to a glorious triumph. His spiritual autobiography could be read in his works. It began in the "Vita Nuova" (new life) and was completed in the Divine Comedy.

A wonderful picture of the vision Dante had of Beatrice was drawn by Professor Phillipson, who said that undoubtedly the vision made Dante a poet. Dante's love obviously resembled the love of most poets, for his attitude towards Beatrice was characterised by the most tender purity, shrinking reverence, tremulous worship, and sacrifice. Beatrice died at the age of 24, and then he knew the supreme pangs of bereavement and the agony of desolation. The theory that Beatrice was only a symbol throughout, an abstract ideal, was unacceptable, because of circumstantial details mentioned by Dante, and in general, because of psychological exigencies; the theory that Beatrice throughout represented a real woman was untenable. on the ground of the superhuman transfiguration. The lecturer described the visionary journey of Dante, guided by Virgil through the nether regions and Purgatory, and afterwards by Beatrice through heaven. The pilgrimage itself, he said, might well be taken to symbolise the ascent of the soul; the tribulations it experienced on the way; the difficulties it overcame, and the joy, and serenity attained at last. The obscure forest had been interpreted in many ways—for example, youthful aberration, exile, worldly troubles, a maze of civil discord, or moral disorder. The panther, the lion, and the wolf might mean the temptation of the world, or the lust, pride, or avarice, or Florence, Rome, and France. The mountain they were prevented from ascending might be the steep hill of virtue. Virgil might be emblematic of human intellect, skill, and knowledge, and Beatrice of divine wisdom and revelation. The work was first and foremost poetry, and it was as poetry, and not because of its subtle, theological, philosophical, political, or moral interpretation, that it possessed an enduring appeal to discerning minds.