positions deal with Melencolia. One of them depicts two infant boys levering forward a sphere and a third with a hoop. The sphere and hoop correspond to the grindstone on which Dürer seated his infant. These symbols are all suggestive of change and regeneration, like that older symbol of ancient Egypt, the serpent biting its own tail, signifying eternity.

In another painting Cranach shows fifteen infant boys at play, of whom some are dancing and two are playing on the flute and drum. There are other examples in alchemy of the use of music as an antidote to melancholy.

A similar painting in "Splendor Solis" shows also a bath suggestive of humidity, and a black crow, representing "putrefactio". The woman shown in each of these paintings must be taken as an allusion to the alchemical motif of "woman's work"—the *opus mulierum*, associated so often and so closely with the *ludus puerorum*.

About a century later, Teniers gave a charming representation of the idea of the *ludus puerorum* in his painting of alchemical cupids busily engaged in a laboratory[16].

A study by Campagnola shows an ancient philosopher meditating in solitude, surrounded by the Saturnine adjuncts of compasses, scales, a skull and a dragon emerging from the water.

Finally, we come to that mysterious being, the alchemist himself. With his strange and fantastic background, he has provided an attractive subject for generations of artists and engravers[17].

[1] For more detailed accounts of alchemy, see the writer's article, "Alchemy and Alchemists", *Nature*, **168**, p. 759, November 3, 1951; also "The Alchemist in Life, Literature and Art" (London and Edinburgh, 1947), and "Humour and Humanism in Chemistry" (London, 1947).

[2] See Plate 34 in the writer's "Prelude to Chemistry" (London, 1936; 2nd edit., 1939; New York, 1937; now out of print).

[3] *ibid.*, compare plate 15.

[4] *ibid.*, frontispiece.

[5] See Figs. 8 and 9 in "Humour and Humanism in Chemistry", and Fig. 7 in "Prelude to Chemistry".

[6] See plate 8 in "The Alchemist in Life, Literature and Art".

[7] See Fig. 6 in "Prelude to Chemistry".

[8] *ibid.*, plate 9.

[9] *ibid.*, plate 44.

[10] *ibid.*, plate 48.

[11] See plate 6 in "The Alchemist in Life, Literature and Art".

[12] For this part of the Discourse the writer has drawn upon the article by his son, Mr. J. H. (Jan) Read, "Some Alchemical Engravings", in *The Burlington Magazine*, **85**, 239 (1944).

[13] See plate 19 in "Prelude to Chemistry".

[14] *ibid.*, plate 50.

[15] See plate 14 in "The Alchemist in Life, Literature and Art".

[16] *ibid.*, plate 22.

[17] Reproductions of representative engravings and paintings of alchemists and alchemical interiors, notably by artists of the Low Countries, were shown in the Discourse; most of these may be found in "The Alchemist in Life, Literature and Art".

OBITUARIES

Dr. H. D. Dakin, F.R.S.

HENRY DRYSDALE DAKIN was born in London on March 12, 1880, the son of a Leeds iron and steel merchant. After being at the Leeds Modern School and with Mr. Fairley, the City analyst of Leeds, Dakin became a student at the old Yorkshire College, now the University of Leeds, in 1898. After working in Prof. J. B. Cohen's laboratory he graduated in 1902 and later became M.Sc. and D.Sc. In 1902 Dakin was elected the 1851 Exhibitioner for that year, and, his interest having been aroused in what was then the new subject of biochemistry, he began work in this field at the Lister Institute in London, where he effected a synthesis of adrenalin while investigating the properties of substances allied to adrenalin; he also worked with Kossel at Heidelberg. In 1905 Dakin accepted an invitation to work in New York in the private laboratory of Dr. C. A. Herter, which had been established at the top of the latter's house in Madison Avenue. Herter died in 1910, and at the request of the widow—who became Mrs. Dakin in 1916—Dakin assumed charge of the laboratory; and afterwards at Scarborough-on-Hudson, where it was re-established when the Dakins moved there after the First World War. Here Dakin's researches, described by one of his collaborators as being of an "unhurried perfection and elegance", were continued in an atmosphere so congenial to Dakin's temperament.

Dakin's work on the intermediary metabolism of fatty acids, and the study of their β-oxidation *in vitro*, provided an explanation by which, it was suggested, fatty acids are metabolized by the animal, was outstanding in its quality and profoundly influenced biochemical thought at the time. Much of Dakin's work up to this time is reviewed in his "Oxidations and Reductions in the Animal Body", a famous treatise of which a second edition appeared in 1922. His work on the action of alkalis on proteins, and the examination of the amino-acids which these racemized proteins yielded on hydrolysis, revealed a difference in the chemical constitution of such closely allied substances as the albumins from the eggs of ducks and hens, and the globulins occurring in the serum of animals—differences which were confirmed by physiologists and immunologists. The examination of caseinogens and globulins from other animal species followed and, although Dakin's work on amino-acids is perhaps better known, this attempt to elucidate the structure of larger molecules is typical of Dakin's work and thought at a period when methods were few, and limited in their application.

Dakin's name is probably best known, especially to the present generation, by the solution which bears his name. On the outbreak of the First World War, Dakin came to Europe and ultimately became interested in the treatment of infected wounds at a French hospital for the wounded at Compiègne. Here Dakin devised and perfected the hypochlorite solution still known by his name, and still used. A little later he was overjoyed at being invited to go to the Dardanelles; by his exertions, the *Aquitania*, which had been converted to a hospital ship, was fitted with a tank adapted for the electrolysis of sea water, and thus unlimited supplies of Dakin's solution became immediately available. Chloramine T, and Cohen's participation in this great work, came later. Dakin's researches continued as long as his strength to pursue them remained, among his later endeavours being his experiments on the active principle of liver extract.

Dakin was elected a Fellow of the Royal Society in 1917 and was Davy medallist of the Society in 1941. In recognition of his work in France he was appointed to the Legion of Honour. He was an honorary graduate of Yale and Heidelberg, and an honour and recognition which gave him great personal satisfaction was the award of the honorary LL.D. by his old University, an award which enabled him to visit the scenes of his early triumphs and friendships. His marriage brought him great happi-

ness, and Mrs. Dakin's death last year, after a long illness which had made an unwonted strain on Dakin's small reserve of strength, proved too much for his frail constitution, and there has passed from our midst one whose attractive personality and charm will be greatly missed. He was a pioneer of biochemistry, and for half a century his work has profoundly affected thought and progress in this field. He worked on many subjects and brought adornment and distinction to them all.

Percival Hartley

We regret to announce the following deaths :

Prof. F. T. Brooks, C.B.E., F.R.S., emeritus professor of botany in the University of Cambridge, on March 11, aged sixty-nine.

Lord Lindsay of Birker, principal of the University College of North Staffordshire, and formerly master of Balliol College, Oxford, on March 18, aged seventy-two.

Prof. N. V. Sidgwick, C.B.E., F.R.S., formerly professor of, and reader in, chemistry in the University of Oxford, on March 15, aged seventy-eight.

NEWS and VIEWS

St. John's College, Cambridge : Mr. J. M. Wordie, C.B.E.

Mr. J. M. Wordie, who has been appointed Master of St. John's College, Cambridge, in succession to the late Mr. E. A. Benians, took the Natural Sciences Tripos in 1913, specializing in geology, in which he won the Harkness Scholarship. Events were to prevent his following the normal career of a geologist, for in 1914 he sailed with Sir Ernest Shackleton's *Endurance* expedition. Here he had time to begin his studies of sea-ice while the whole party lived for months on the floating pack-ice, after their ship had been crushed. Wordie was with the main party, living under an upturned boat for some weeks on a barren sub-Antarctic island, while his leader was making his memorable boat-journey to South Georgia for help. He returned to England just in time to see a little service in the First World War as an artillery officer. He then went back to Cambridge to take up what can best be described as an academic life with exciting interludes.

Becoming a Fellow of St. John's in 1921, and successively supervisor, tutor, senior tutor and president, he has been in close touch with undergraduates for thirty years. Almost at once he began that series of summer expeditions to the Arctic—six in all—by which he has exerted a lasting influence on polar exploration. Most of the young men in those parties under his leadership have gone farther with polar work and all have maintained an intense interest in it. Mr. Wordie's knowledge of polar history is nearly as comprehensive as his polar library. As an original member of the Colonial Office *Discovery* Committee, as chairman of the Committee of the Scott Polar Research Institute, and now as president of the Royal Geographical Society, he has been in constant touch with almost every aspect of scientific exploration. His wise and cautious counsel will, no doubt, continue in these fields.

Television in Scotland

A further step in the carrying out of the B.B.C.'s plan for a nation-wide service of television (see *Nature*, **167**, 617 ; 1951) was accomplished on March 14, when the fourth station in the network was formally opened at Edinburgh by Mr. James Stuart, M.P., Secretary of State for Scotland. The new station is at Kirk o' Shotts, near Falkirk, on a site 900 ft. above sea-level about midway between Glasgow and Edinburgh. The 750-ft. mast, similar to those used at Birmingham and Holme Moss, brings the total height of the sound and vision aerials to more than 1,600 ft. ; and this is an important factor in securing the greatest possible service area, particularly in hilly country such as that lying to the north of the new station. The sound and vision transmitters operate on frequencies of 53·25 and 56·75 Mc./s. respectively (wave-lengths 5·63 and 5·3 m.).

As at Holme Moss, the Scottish station is being equipped with high-power transmitters for the main service, with medium-power transmitters to be held in reserve against breakdowns. As there is likely to be some delay in the completion of the high-power installation, it was decided to inaugurate the service with the medium-power transmitters, which were built to B.B.C. specification by Marconi's Wireless Telegraph Co., Ltd. ; they form a completely separate installation and are housed in the annexe building. These medium-power transmitters are expected to provide a satisfactory television service over a considerable area of central Scotland, including Edinburgh and Glasgow ; but reception will naturally be more liable to interference, particularly in fringe areas, than it will be when the high-power transmitters come into service later in the year. It is estimated that the new station will then enable between three and four million people to use the service—more than half the population of Scotland ; with the other stations already in operation, television will be available to about three-quarters of the population in Great Britain.

The vision programme is conveyed to Kirk o' Shotts over the General Post Office distribution network, which consists of the 1-in. tube co-axial cable system from London to Birmingham, the $\frac{3}{8}$-in. coaxial cable from Birmingham to Manchester, and a radio relay link between Manchester and Kirk o' Shotts. This is the longest television relay system in Europe ; and the fact that viewers in the London area were able to witness the inauguration ceremony in Edinburgh, as re-radiated by the Alexandra Palace station, was a testimony to its efficient operation. At this ceremony, Lord Tedder, vice-chairman of the B.B.C., introduced Mr. Stuart in the presence of Mr. James Miller, Lord Provost of Edinburgh, and a distinguished gathering. More than one reference was made to the fact that the late Mr. J. L. Baird, the pioneer of British television, was born at Helensburgh, Dumbarton, about forty miles from the new station. In the area of the new station, reception of the opening ceremony and the evening's programmes was described as excellent.

British Coal Utilization Research Association : First Coal Science Lecture

In his presidential address to the British Coal Utilization Research Association last year, Sir Charles Ellis referred to the establishment by the Association of an annual Coal Science Lecture. It is now