

comet, discovered in 1770 by Lexell, which was distant only 1.40 million miles from the earth's surface. Some recently discovered minor planets have come fairly close to the earth; Amor, discovered in 1932, came within ten million miles, and 1932 HA within six million; but all records, cometary or planetary, have been broken by the minor planet 1936 CA discovered by Delporte at Uccle on February 12 of this year. This tiny object passed within 1.38 million miles of the earth on February 7. It has proved extremely difficult to determine the elements of this minor planet's orbit, and in particular, the period is hard to ascertain, so that it is difficult to predict the next approach. Since the object passes close to several major planets, large perturbations in its orbit may be expected. It is not impossible (though the possibility is remote) that the object may ultimately collide with the earth; there is a wide margin of safety at present. The view has been expressed that this object may belong to the same group as the great meteorites of Siberia and Arizona. On the other hand, far from colliding with a major planet, the object may eventually be thrown into a very long orbit with a very long period, or even ejected from the planetary system altogether. Should a collision occur, the damage will be very severe over an area having a diameter of a hundred miles or so, judging by the Siberian meteorite.

#### Snuff-Taking

At a meeting of the Society for the Study of Inebriety and Drug Addiction held on April 21, Dr. J. D. Rolleston read a paper on snuff-taking, which he said has increased enormously within the last five years as the result of letters to *The Times* by Sir Buckston Browne advocating the use of snuff as a protection against colds. On its first introduction into Europe in the middle of the sixteenth century by Jean Nicot, the French ambassador at Lisbon, snuff was used for the treatment of headaches and colds in the head. It soon, however, passed from being a drug to the rank of a luxury, and snuff-taking became general throughout Spain, Italy and France during the early part of the seventeenth century. Snuff-taking was introduced into Great Britain at the time of the Restoration by the courtiers and officers of Charles II in France, and its popularity increased considerably after the Great Plague. Henceforward until about the middle of the nineteenth century, the snuff box played an important part in the social life of the time, and medical and lay writers were equally extravagant in their praise or denunciation of the new habit. The most serious complication of snuff-taking, to which numerous references are to be found in the medical works of the last century, was the occurrence of plumbism due to the accidental adulteration of the snuff by lead in the packing. Numerous other adulterants which were not only detrimental to the revenue but also injurious to health were described by an Analytical Sanitary Commission in 1853. The Commission, however, was of opinion that the constitutional effects of snuff-taking were much less than in the

case of smoking and chewing tobacco, the effects in most cases being mainly local. In conclusion, Dr. Rolleston said that there is no recent information as to how far snuff-taking might become an addiction, but that most probably it should be ranked with other forms of consumption of tobacco, voluntary or enforced cessation of the habit causing considerable discomfort in some cases and little or none in others.

#### William Weston and Early American Engineering

At meetings of the Newcomen Society held almost simultaneously in London and New York on April 22, a paper by Prof. R. S. Kirby of Yale University was read entitled "William Weston and his Contribution to Early American Engineering". Weston was an Englishman, possibly born in Oxford in 1753, who before he was forty years of age had gained a reputation as a civil engineer sufficiently high for him to be engaged to go to the United States as engineer to the Schuylkill and Susquehanna Navigation Co., of Pennsylvania, which proposed to connect the Susquehanna by canal with the Schuylkill, and canalise the Schuylkill from Reading to Philadelphia. He sailed from Falmouth on November 23, 1792, and arrived at Philadelphia early in January 1793. The researches of Prof. Kirby have brought to light much information about Weston's connexion with the above schemes and with the Philadelphia and Lancaster Turnpike, the Middlesex canal connecting the Merrimack with Boston, the Potomac River Locks, the Western Inland Lock Navigation, the Schuylkill River Bridge and lastly the New York City water supply. Weston returned to England probably in 1799 or 1800. The only English work of his of which there is certain knowledge is the bridge over the Trent at Gainsborough, built in 1787-91; but strangely enough, practically nothing is at present known of his early career or of the activities of his later years. He inspired confidence in those with whom he came into contact in America and, says Prof. Kirby, he had a considerable influence on American engineering.

#### Exploration by Aeroplane

AN aerial survey over that part of Papua recently explored by Mr. Jack Hides, an assistant resident magistrate (see NATURE, Aug. 17, p. 251, Aug. 24, p. 290, 1935), by clearing up obscure points in the previous record, once more has illustrated the advantages of this aid to exploration in difficult country. Its assistance in giving speed and enlarging the range of vision was strikingly and conclusively demonstrated a few years ago by the aerial reconnaissance made by Dr. S. P. Morley of the Carnegie Institution, Washington, D.C., over the forest country of Central America, when in the course of a few hours flying, a large number of previously unknown ruins and archaeological sites were located in forest areas of Yucatan and Honduras, which it would have been possible to reach only after weeks or even months of travel, if at all, by the ordinary means of transport. In Papua, the country covered by Mr. Hides in eight months was traversed in flights lasting

only two days, while the limestone plateau on the approach to the Leonard Murray Mountains, the "cruel tract" of needle points and razor edges, which cost him eleven days arduous and painful travel, was crossed in fifteen minutes. No less significant was the accuracy with which it was possible to observe and distinguish the tracts and types of country described in the record of the original exploration. The account of the survey given by Mr. Lewis Lett (*The Times*, April 25) fully bears out Mr. Hides' description of the country as "a wonderland". In its isolation, it should prove the happy hunting ground of the future for the indomitable anthropologist.

#### Mummification in Egypt

AN interesting discovery, which it is thought may prove of considerable importance for the history of mummification in Egypt, is reported from Cairo. In a tomb near one of the pyramids opened by Prof. Selim Hassan, of the University of Cairo, has been found the body of a pregnant woman completely wrapped in bandages. She was the wife of Sechem Nefer, governor of a province under Chefren, the king of the Fourth Dynasty (2650 B.C.), who built the second pyramid at Gizeh. This, it is stated by the Cairo correspondent of *The Times* in the issue of April 21, is believed to be the oldest mummy known. In another tomb, that of Knem Baef, a son of Chefren, is a large white sarcophagus, not yet opened, upon which was found a gold necklace three feet long, with beading of carnelians, amethysts and turquoises, and ivory and gold finger sheaths. A third tomb was found to contain the mummy of a man completely wrapped in bandages with the exception of the head. The earliest date at which mummification was practised in Egypt is at present somewhat obscure. It is possible that even so far back as the First Dynasty some attempt was made to ensure preservation of the body; and in the Second Dynasty the corrosion of the linen bandages in which the bodies are wrapped has been thought to be due to a practice of smearing the corpse with natron. Similar effects have been observed in burials of the Third and Fourth Dynasties. The full process, involving removal of the internal organs of the body, appears in the Fifth Dynasty. Details of the process applied to the preservation of the body of the wife of Sechem Nefer consequently will be of the greatest interest.

#### Telephones for Use in Apartment Flats

THE problem of installing a system of telephones in a block of flats differs in one important respect from a private telephone installation such as is used by a large business organisation privately owned. Flat dwellers, although resident in one building and indirectly employing a common staff, are independent members of the public. Hence in those countries where the provision of telephone communication is a monopoly either of the State or of companies acting under charter, the establishment of a system which enables tenants of flats to communicate with each other would be illegal. A telephone system for flats

does not provide for intercommunication between tenants. The objects are to obtain immediate communication with the hall attendant and in some cases with the kitchen, garage and administrative office. In the *Osram G.E.C. Bulletin* of February, a telephone system is described in which the connexions are made to a 'reply panel' and not to a switchboard. It is designed to operate on the standard A.C. mains supply, a small power unit supplying direct current for speech and lamps so that no batteries are required. The 'buzzer' is also operated from the A.C. mains and hence the possibility of interference with radio sets in the building is removed. A picture is shown of a typical reply panel equipped for forty lines to flats. In addition, there are four service lines enabling the flat lines to be connected with all service lines, and ten 'tie lines' giving connexion when wanted to other panels. Each flat has a connecting plug associated with a calling lamp: there is also a buzzer on the panel giving an audible signal and thus relieving the attendant from the necessity of paying attention to the board except when his services are actually needed.

#### Electrical Communication in Japan

IN the February number of *Nippon Electrical Engineering*, published quarterly in English by the Institute of Telegraph and Telephone Engineers of Japan, the present status of Japanese broadcasting is discussed. It started ten years ago, and there are now 2,300,000 subscribers. Japan has a long and narrow configuration consisting of several islands the centres of which are covered with mountain ranges, so that conditions for broadcasting are very unfavourable. In this case it is much more effective to distribute a large number of low-power broadcasting stations over all the region than to erect a few high-power stations. The plans based upon a low-power many-station principle are being progressively realised. At the same time, in order to compete with other countries in international communications and to protect Japanese listeners against local interference, it has been decided to instal two high-power broadcasting stations, with 150 kilowatts of antenna power each, on the outskirts of Tokyo. It is computed that the field strength in Tokyo will be more than 200 millivolts per metre and will be ample to overcome any background of noise. All the equipment required for the stations can now be made locally. The Japan Broadcasting Corporation (B.C.J.) has built a special laboratory for studying radio technique. It has investigated apparatus for noise elimination and has made a direction finder for detecting the origin of noises. It is engaged in researches on television and is carrying out special experimental investigations on photo-electric tubes.

#### Applications of Photo-Electric Cells

AT a meeting of the Illuminating Engineering Society held on April 8, three papers were read on the uses and characteristics of photo-electric cells. R. C. Walker described the various types of light-