

symbol of the struggle of the Indian against conquest and absorption by the white race. Sitting Bull was a shaman or religious leader rather than a war chief in accordance with the dichotomy of function usual among these peoples. Authentic relics of this chief are rare, although pairs of moccasins said to have belonged to him are found in collections scattered widely over America and Europe. The authorities of the Smithsonian Institution hitherto have allowed authenticity to one relic only in their collections, a sawed-off flint-lock taken at the time of his surrender. To this is now added a red clay tobacco pipe and buckskin tobacco pouch presented by the widow of Major-General James McArthur, who obtained them from the chief when he himself was a lieutenant in the Seventh U.S. Infantry. The pipe is of catlinite, the red clay of the Upper Missouri, commonly used by the Indians for this purpose, and has a long rectangular wooden stem. The pouch is 17 inches long with characteristic Sioux decorative work in glass beads and dyed porcupine quill.

New Fossil Primate from Sterkfontein, South Africa

FURTHER study of the large human-like third upper molar of which the discovery at Sterkfontein was recorded recently by J. C. Middleton Shaw in the columns of *NATURE* (143, 117; 1939) and a comparison with remains of the fossil Plesianthropus and Paranthropus of Broom have led to some interesting conclusions as to the possible significance of this new Sterkfontein primate. These further considerations have been discussed by Dr. Shaw in a communication to the *Annals of the Transvaal Museum* (20, 2; 1940). There would appear to be no doubt that the new molar belongs to neither Plesianthropus nor Paranthropus; and it differs from the third molars in all the material from fossil apes which has been described by W. K. Gregory. If, therefore, it belonged to a fossil ape, it must be concluded that that ape differed, at least so far as the upper third molar is concerned, from any ape hitherto described.

Evidence of the character of the corresponding tooth in fossil man, unfortunately, is inadequate. Dr. Shaw, however, detects certain resemblances between his tooth and that in Sinanthropus, except that it is larger and presents certain differences as to the crown, while there is, again with the same proviso as to size, a resemblance in the moderate taurodontism and smooth simple crown surfaces to certain Neanderthal specimens. Although no fossil human remains have been discovered at Sterkfontein, Dr. Shaw puts forward the tentative suggestion that the tooth of his discovery may be a relic of an early African human type, possibly of Pleistocene age and, therefore, a contemporary of Plesianthropus and Paranthropus. If this should be confirmed by further evidence, this is the first fossilized remains of man discovered in the Union of South Africa.

Excavation at Gnezdovo, U.S.S.R.

SOVIET archaeologists have recently made interesting discoveries during excavations at the village of Gnezdovo, near Smolensk. The vicinity is a veritable

treasure-house of Slavonic monuments; in it are up to 7,000 tumuli, numerous settlements and small towns relating to the first 1,000 years before our era. Excavations have been completed of the central town at Gnezdovo, considered by many archaeologists as the original town of Smolensk. An area of 120 square yards was uncovered up to an average depth of 6½ ft. In one half of the excavated area was revealed an ancient Slavonic earthen dwelling place with a stone fireplace and hearth and many utensils. There were found bone, flint and iron implements, and primitive clay pots. Copper articles (clasps and buckles) found there indicate that the dwelling place relates to the middle of the first 1,000 years of our era.

In the other half of the site excavated was discovered a very rare burial; lying on a funeral pyre was a half-burned woman in full attire and wearing many ornaments. Around her throat was a valuable necklace; suspended from a silver chain was a golden Byzantine coin, six highly ornamented gold medallions and five silver medallions. Below the medallions hung a number of multi-coloured beads, including silver ones. It is believed that the burial relates to the tenth century, and that the ornamentation is of Byzantine origin.

Gold Mining in Wales

MINING for gold has been carried on in various parts of Wales during the past two thousand years, but has experienced many vicissitudes and has frequently lapsed for long periods at individual workings. An attempt was made some three years ago to bring again into commercial production the Roman Deep mine at Pumpsaint, Carmarthenshire, but circumstances were adverse to the venture. According to *Engineering* of September 20, the plant has now passed into the hands of Messrs. George Cohen, Sons and Company, Ltd., for disposal. Local tradition says that the name 'Pumpsaint', which means five saints, is linked with a stone, having in one surface five small depressions, supposed to have been caused by the heads of five saints who used it as a pillow. Messrs. Cohen suggest that the hollows were caused by primitive ore-crushing stamps, and that the stone was part of the very early plant used at the mine.

The Start of Education

"ELEMENTARY Education: What is It?" (U.S. Office of Education, Bulletin 1940, No. 4, Part 1) is the first of four summaries which have followed a conference in 1938 on the subject. It is planned to give a bird's-eye view with relation to later studies and is valuable as presenting the views and criticisms of many teachers, though a little heavy in its methods of exposition. The general public needs to realize in simple language that the word 'education' means not pushing in information but drawing out the best that a child can do. To note among the experiences to be included in an elementary school "analysing" and "evaluating" seems rather advanced for a tender age, unless the child's determining of values provides

hints for the teacher; one of Mark Twain's clever children valued her mother most and the new kitten came next. Elementary schools hold the centre of the stage so far as numbers are concerned. There were in the United States nearly 23 millions of the teachable in 1936, and between that date and 1930 a decrease of 4 per cent in attendance is noted. But States vary widely in the opportunities they supply.

What is said of a broad interpretation of the curriculum and of mental growth is excellent. Dramatic play, begun naturally by children as individuals, should be organized as a regular part of the school programme. It is well to take long views about later life, where education goes on steadily among the wise. The main business is to discover a child's special aptitudes and get over a reluctance to tackle subjects which may appear difficult, such as arithmetic. But, while there is talk of a "stable and desirable type of personality" as one of the aims to be achieved, and of democracy and good citizenship, we find nowhere any declaration whether the child is to be educated to meet the current standards in business, or to reach a higher morality which is dissatisfied with them. Culture has in practice little chance of competing with the attractions of that broad way, the *via dollarosa*.

Recent Earthquakes

FOUR strong distant earthquakes were registered at Kew Observatory during September. They were on September 12, 19, 21, and 22. The second of these was the greatest, having a ground amplitude at Kew of 47 μ , and being estimated at a distance of 17,400 km. The second was at a distance of 6,100 km. with an estimated depth of focus of about 390 km., whilst the third, probably distant about 140°, had a depth of focus of approximately 500 km. News from other observatories is awaited before the epicentres and depths of focus can be given with precision.

On September 4, two local earthquakes were felt in Palestine each of which lasted about 10 seconds. No damage has been reported and the shocks were not registered at Kew. It is reported in the Press that an earthquake was felt in Copenhagen early on September 28. No damage was reported. Earthquakes are rare in this district and the shock may have been caused by fault slipping in the Sound separating Denmark from Sweden.

The coast of Chile in the neighbourhood of Iquique was shaken by a violent earthquake about 6 a.m. (local time) on October 4. Reports of damage and details of the shock are not yet to hand. Chile as a whole is very liable to earthquake shocks, and Iquique has been affected on a number of occasions in the past, notably on May 9, 1877, when there was widespread destruction due to large sea waves caused by the earthquake in addition to the extensive damage done by the earthquake itself, and on January 23, 1878.

During April, May, June 1940 forty-seven earthquakes were registered at the Riverview College Observatory, New South Wales, as compared with fifty-six in the first quarter of the year. The Observa-

tory is equipped with two Wiechert horizontal 1,000 kgm. instruments, one Wiechert vertical seismometer of 80 kgm., two Mainka 450 kgm. seismometers and three Galitzin aperiodic seismometers with galvanometer registration, orientated north-south, east-west and vertical. The largest two shocks of the period appear to have been on April 1 when an amplitude of 23 mm. was obtained and on May 28 when an amplitude of 22 mm. was reached. The shock of April 18 was felt in the region of the Duke of York Islands, New Britain, etc. The shock of May 24 is reported to have had its epicentre in Peru, and the earthquakes of June 18 and June 22 were deep focus shocks. The instruments are occasionally affected by microseisms which are at times severe. The microseisms do not often preclude the accurate reading of the seismograms, details of which are given in the Observatory report.

Research on Juvenile Leisure

THE Socio-Psychological Department of the Manchester and Salford Council of Social Service is engaged in research into the problems of leisure time activities of juveniles. The research at present is centred around the psychological difficulties of juveniles in taking up educational leisure-time occupations. The department wishes to get in touch with those who have conducted similar research in order to co-operate and co-ordinate the research done. Information can be obtained from G. Wagner, Manchester and Salford Council of Social Service, 16-18 Queen Street, Manchester 2.

Announcements

PROF. A. EINSTEIN, who has been professor of theoretical physics in the Institute for Advanced Studies at Princeton since 1933 has been admitted to American citizenship.

DR. MILAN A. LOGAN, assistant professor of biochemistry at Harvard University, has been appointed Andrew Carnegie professor of biochemistry in the College of Medicine of the University of Cincinnati, in succession to Dr. Albert C. Mathers.

DR. W. A. CLEMENS, director of the Pacific Biological Station at Departure Bay, a branch of the Fisheries Research Board of Canada, has been appointed head of the Zoology Department of the University of British Columbia.

THE Academy of Sciences of the U.S.S.R. has awarded the Pavlov Prize for 1940 to Prof. Maria K. Petrova, of the Pavlov Institute of Physiology and the Institute of Evolutionary Physiology and Pathology of the Higher Nervous Activity. The annual Pavlov Prize of 20,000 roubles, for the best work in the field of physiology, was instituted by the Soviet Government in 1936. The winner of the Prize this year is known for her study of experimental neuroses, their mechanism and therapy. She has written a treatise on this subject, one volume of which has been published, and the other is in the press.