

of Sciences, gives a well-documented account of the manuscripts, documents, prints and other Polish works produced in early times on present German territory. It is clear that in the Middle Ages Polish culture played an important role in those lands now comprising eastern Germany, for many of the Polish kings and noblemen were patrons of learning. Also many scientific and other works by Polish authors were printed in towns as far west as Strasbourg. In the same volume there is an introductory note on the scientific and cultural relations between Germany and Poland by Prof. Aleksander Brückner, of the University of Berlin.

Science in Poland

VOL. 19 of *Nauka Polska* (issued simultaneously with vol. 18) contains articles on science in ancient times; problems in writing biographies; current scientific work at Lwów; the position of science in Italy, Greece, Rumania and Lithuania; and a full account of recent activities in England of the British Science Guild, the Association of Scientific Workers and the Parliamentary Science Committee. The volume concludes with a comprehensive international bibliography (20 pages) of "works concerning the psychology and sociology of science" for the years 1928-31. From Prof. T. Mańkowski's report on scientific and cultural life in Lwów at the present time it is clear that, in the faculties for pure science and medicine, modern equipment has been installed and everything is being done to encourage research workers and to see that they are not hampered by lack of facilities. Since the establishment of the Polish Republic, Lwów has become an increasingly important scientific centre in south-east Poland. A polytechnic and medical school existed before the War, but all cultural life came to a standstill in 1914 and it was not until 1920 that circumstances were favourable for the re-establishment of a university in this city.

Antarctic Exploration

THE *Penola*, the vessel of Mr. J. Rymill's antarctic expedition, according to the *Times* of August 10, was commissioned at Southampton last week and carried out preliminary trials preparatory to sailing for London, where the stores and scientific instruments will be taken on board. The expedition's aeroplane, a three-seater De Havilland Fox Moth, about sixty tons of stores and some sixty Greenland dogs have already been sent out to the Falkland Islands by cargo-steamer. The *Penola* is due to leave London on September 2 for the Falkland Islands, calling on the way at Monte Video. The staff of the expedition will themselves constitute the crew under command of Lieut. R. E. D. Ryder, R.N. The *Penola* is a three-masted topsail schooner with two 50 H.P. Diesel engines. Most of the members of the expedition have already had arctic or antarctic experience. While the work will be primarily exploratory, attention will be paid to various scientific problems including plankton, the occurrence of 'heavy water', the sociology of penguins and meteorological work.

It is hoped to trace the southern extensions of the Antarctic Andes which are known as the Graham Land islands. Although the expedition hopes to be away for more than two years, the total cost is not expected to exceed £15,000, which is considerably lower than that of any other previous expedition. There is also news of Admiral Byrd's antarctic expedition; Admiral Byrd himself has been living alone at an observation hut some 120 miles south of his base camp in the Bay of Whales in order to secure continuous meteorological records. He had recently asked to be relieved owing to illness, and a rescue party succeeded in reaching him on August 13.

American Trans-Antarctic Flight

THE original plan of the Ellsworth Antarctic Expedition for a flight across Antarctica from the Ross Sea to the Weddell Sea and back to the base had to be abandoned last January owing to serious damage to the aeroplane on the pack-ice. Mr. Ellsworth now proposes new plans for the southern summer of 1934-35, and explains them at length in *Natural History* of July-August 1934. His ship, *Wyatt Earp*, will reach Deception Island about November 1. From there, Messrs. Ellsworth and Balchen propose to fly southward along the unknown western edge of the Weddell Sea to the ice-barrier at its head and then straight across Antarctica to the Bay of Whales on the Ross Sea, a total distance of 2,800 miles over virtually unexplored areas. The ship will go round to the Ross Sea to pick up the expedition, which will no doubt have the use of Byrd's base in the Bay of Whales. The plane has a maximum speed of 210 miles an hour, and it is proposed to fly at 150 miles an hour. Fully loaded, with pontoons in place of ski, its cruising radius is 3,200 miles. The use of pontoons, which materially increases the weight, is necessary because Deception Island does not offer a land surface sufficiently extensive for a 'take off' for this heavy machine.

American Indian Land-Tenure

A MOVEMENT has been initiated in the United States for the reform of the terms of land-tenure among the Indians. Under the law of 1887, lands were allotted to the Indians on individual tenure, a system of which they had had no experience under tribal institutions. No sooner had allotment been made than land dealers began to acquire holdings from the Indians, in many instances in exchange for a few bottles of whisky or other articles of little or no value. It is estimated that in less than fifty years the Indians have lost two thirds of their lands, and whole tribes have been reduced to pauperism. A conference has been summoned, it is announced by Science Service, Washington, to discuss this situation, as well as other problems affecting the Indians. It will be attended by representatives of the Indian Rights Association, the National Association on Indian Affairs and many other bodies interested in the welfare of the Indian. The Commissioner of Indian Affairs, Mr. John Collier, will also attend. Special attention will be given to drafting proposals

for the amendment of the land laws. Among the reforms it is intended to propose is the reintroduction of the system of tribal tenure. It is understood that this proposal has the approval of the Indian Office. Suggestions are also to be considered for the establishment of a system of credit for the Indians in order to enable them to equip and stock their farms, as they are not otherwise in a position to work any land which may be assigned to them. It is certainly desirable that something should be done to establish on an economic basis the half-detribalised Indians who at present are largely parasitic on the fringes of white communities. The passing of a revised land-law which would restore the Indian to the land without the power of alienation would probably prove a substantial advance in that direction.

Grading of Empire Hardwoods

A SMALL brochure has been prepared by the Imperial Institute Advisory Committee on Timbers entitled "Grading Rules and Standard Sizes for Empire Hardwoods" (Imperial Institute, South Kensington, Oct. 1933). The Sub-Committee, appointed by the Advisory Committee, decided that these inquiries should be confined to overseas Empire square-edged hardwoods. The grading rules and memorandum on sizes recommended by it will be subject to amendment from time to time, as further experience is gained. The grading rules for Empire hardwoods (square-edged) intended for shipment to the United Kingdom are considered under: A. Hardwoods from Countries other than Canada and New Zealand, I Standard Grades. II Wormy Grades. III Grades for shorts, squares, strips, quarter-sawn stock. B. Canadian Hardwoods. C. New Zealand Hardwoods; and appendixes. This piece of work was overdue and should prove of great value to all concerned in this matter of hardwood imports. The danger of laying down hard and fast grading rules for any particular item of imports may result, however, in great waste at the source of origin—a waste which has to be seen on the spot to be fully realised. For example, under "Squares" it is stated, "*First Quality or Prime Squares* must be free from all defects, except that, when squares are sold specifically for turning, slight defects on one or more corners which will turn off will be admitted". In the case of mahogany, to obtain the flawless squares, sections of logs of 2-4 ft. will be cut off and left to waste in the forest owing to some small flaw which the manager on the spot will not risk sending home since he will be censured by the management. The latter will not have this type of material sent home since they know it will be objected to by the buyers. Is it necessary to waste annually thousands of cubic feet of so magnificent a timber as mahogany because the specification of import laid down by the purchaser approaches an ideal?

Wireless Communication at Mount Everest

A paper entitled "Wireless Communications with the Mount Everest Expedition, 1933", read before the Royal Society of Arts by Mr. D. S. Richards, has now been published (*J. Roy. Soc. Arts*, May 11). The

plans provided for the installation of a main fixed station at Darjeeling, the starting point of the expedition, and two mobile transmitting and receiving stations to be erected at the Base Camp and Camp III at altitudes of 16,800 ft. and 21,000 ft. respectively. The distance from Darjeeling to the Base Camp was about 111 miles, with a further 10 miles to Camp III, from which a telephone line was to be laid to Camp IV about 1½ miles distant and at a height of 22,800 ft. Communication was carried out by telephony when possible, with recourse to Morse telegraphy when conditions were less favourable. Wave-lengths in the region 40-60 metres were found to be the most successful, and the best time for communication was in the early morning when fading and interference from atmospheric were reduced to a minimum. On the whole, the wireless equipment worked satisfactorily, and the service provided was of great value to the climbers. Weather reports were delivered to Camp IV within an hour or two of their being originated in Calcutta. Radiotelephony proved a great success on occasions, notably when H.E. the Governor of Bengal spoke to some members of the expedition from Government House, Darjeeling, and also when the Civil Surgeon in Darjeeling was consulted about some medical cases. Dr. Greene also carried out a diagnosis by radio between Base Camp and Camp III when there was no doctor in the latter Camp. Not least among the advantages provided was that of the reception at Base Camp of broadcasting programmes and news bulletins.

Road Construction in New Germany

If we leave the United States out of account, it is at first sight curious that countries overburdened with financial liabilities take the leading part in promoting road construction. During a period of great prosperity, the United States built a gigantic network of highways. Yet when unemployment increased, further energetic steps were taken to increase the road work being done. During the former period, maximum use was made of machinery, but now the tendency is to employ manual labour as much as possible. In *Roads and Road Construction* of April, there is an interesting paper by Prof. K. Kruger, of the Technical High School, Charlottenburg, describing the latest German *autobahn* (super-highway) scheme. At the motor exhibition in March at Berlin, Herr Hitler urged the encouragement of motor-vehicle traffic as this would provide work for hundreds of thousands of men. The *autobahn* project has been fostered, and the construction of powerful high-speed vehicles—almost semi-aircraft—is being encouraged. It is intended that the high-speed traffic should be collected on the *autobahn*. The ordinary roads not built for the present dense heavy and rapid traffic would be saved from the necessity of constant repairs and efforts would be made to improve them. The super highway will enable the motorist to speed up to at least 90 miles per hour. A lorry driver will be able to travel between two distant cities twice a week instead of making only one return trip. The deterioration of