

Cassowary men, for instance, are pugnacious, long-legged, and good runners.

Though marriage is strictly forbidden within the totem clan, its regulation belongs to kinship rather than to totemism. The phratry system, so common in Australia, seems to have formerly existed. A man sometimes lives with his wife's people, a case apparently due to circumstances which have no connection with maternal descent. The custom of the levirate is known, but it is not obligatory, and there is nothing to show it to be a survival of polyandry. It is wrong to marry an old woman. The eldest daughter is always married first. Young men rub their bodies with "sweetheart medicine" to attract the notice of the girls. It is the universal custom for the women to propose to the men.

The heads of dead persons are cured, painted and kept by the nearest relatives. It is to be noted that no worship is paid to them. Ancestor worship is unknown; the custom in question is solely due to affection. One of their funeral customs is a remarkable parallel to the ancient Roman practice; persons carefully "got up" to represent dead relatives dance at the burial.

Very interesting features are presented by the customs



FIG. 2.—The Cave of Augudalkula in the Sacred Island of Pulu.

which have to do with property. There is no group or clan ownership of land; every inch of ground is owned by some individual. A man's property is divided at his death among his children. In default of male issue, a daughter may inherit. They have a system of leasing their gardens. If a man wants to buy a canoe he can pay by instalments with immediate possession, the *Times*' scheme being here anticipated.

The account of the native religion gives an impression of incomplete study. We are told that there is no supernatural sanction for morality; even the totems are not really worshipped. We hear incidentally that the natives pray to their "heroes." An analysis of their habits of prayer would have been instructive. More information about the chief hero, Kwoiam, would have been welcome. A folk-tale speaks of the first created man: is this idea borrowed from missionaries? The concluding sentence of the volume is, "unless the above-mentioned heroes be regarded as gods, I think it can be definitely stated that the western islanders had no deities, and certainly they had no conception of a Supreme God."

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We have only mentioned a few of the many facts which will assist in throwing light on old problems. That so much was done in so short a time speaks well for the energy of the expedition. But could not the hundred odd pages of folk-tales, fully reported, have been reduced? A précis of such seems adequate.

The volume is a fine monument of English anthropology, and reflects great credit on the enterprise and devotion of Dr. Haddon and his colleagues. It is by such work as this that the "science of man" is justified.

ERNEST CRAWLEY.

PROGRESS IN WIRELESS TELEGRAPHY.

IT is eighteen months or more since Mr. Marconi succeeded in establishing wireless communication across the Atlantic. On that occasion a few congratulatory messages were exchanged, a great deal was written on the subject in the Press, and the more timorous of cable shareholders were reported to be much troubled. A little later the attempt was made to demonstrate that this achievement was not merely a firework display, but was capable of direct commercial application; the Marconi Co. entered into a contract to supply the *Times* with news from America by wireless telegraphy, and for a day or so there appeared items of news in that paper under the heading "By Marconigraph." But after a few messages something went wrong, and the public were given to understand that a piece of auxiliary machinery had broken down. It is to be presumed that this piece of machinery has at length been repaired, for Mr. Marconi has once again come very much to the front with long-distance transmission work. The announcement, which we published last week, that he had been successful in maintaining a supply of news to the *Campania* on her voyage across the Atlantic with a regularity sufficient to allow of the publication of a daily paper on board that vessel affords evidence that he is still steadily pushing forward the practical development of wireless telegraphy. We have repeatedly urged in these columns that the real work of wireless telegraphy

lay in communication with ships, and it is therefore a greater pleasure to record this latest development than it would be to announce the reopening of Transatlantic communication.

The experiments on board the *Campania* appear to have been thoroughly successful in all respects. Not only was the vessel never out of touch either with one or other of the three large power installations, but she was also for a considerable period in touch with both sides. It seems, however, that the communication was only one sided; this is, of course, only what was to be expected, but it is to be hoped that Mr. Marconi's efforts will be directed to making it reciprocal, and that before long we shall hear the announcement of this further success. It is stated that the other ships of the Cunard line are to be installed with apparatus similar to that on the *Campania*, and that a regular news service will be established to all of them. There can be no question but that this will tend very greatly to enliven the voyage across the Atlantic, and that in many other respects it will be of great practical utility.

In other directions wireless telegraphy is showing that it has won the right to consideration as a thoroughly practical means of communication. The extract from a letter from the "wireless" correspondent of the *Times* in the Far East which was printed in last week's NATURE shows to how great an extent it is being used in the Russo-Japanese war. The letter also shows that, whatever may be said to the contrary, syntonisation in the true sense is still a problem awaiting solution. The most that can be done at present seems to amount to this: a receiving station can be syntonised sufficiently well to enable it to pick up messages from a particular transmitting station in preference to, or with greater ease than, those from any other, and thus it may be enabled to work over greater ranges. It does not, however, seem in the least possible so to tune the transmitter that interception of messages is impossible, nor does it seem likely that this will ever be accomplished until experimenters have succeeded in producing continuous trains of undamped oscillations, a direction in which many are working. It is noteworthy that Dr. de Forest recently expressed the opinion that without this syntonisation is only partially possible; in this limited sense we believe all systems are making use of the principle with more or less success. The system designed by Dr. de Forest appears from many accounts to be the most efficient of those at work at the seat of war, as it has already been one of the most successful of those tried in America. The lengthy wireless messages transmitted with marked regularity in trying circumstances from the *Haimun* to the *Times* afford evidence of this, and it is noteworthy also that a speed of about thirty words a minute seems to be easily attained, which is a high speed for wireless telegraphy. The comparisons which the *Times* correspondent makes between the working of his system and that on the British warships at Wei-hai-wei, though much to the detriment of the latter, are hardly fair to the Marconi system, as the naval installations are not of the latest date.

As to the prospect of attaining thorough syntonisation, it is to be noted that Dr. de Forest is working on the lines of producing continuous oscillations on the principle of Duddell's singing arc, a method which, we pointed out in NATURE (vol. lxxviii, p. 248), seemed the most promising. Others, we believe, are also working on the same lines. It is noteworthy also that much progress has been made on the scientific side, and that we are in a better position now to make quantitative measurements of the energy transmitted and received. In this connection also Mr. Duddell has contributed towards our advance; he recently exhibited before the Physical Society an instrument (which we hope to describe on another occasion) which gave considerable deflections with the currents received in the aerial wires. As this affords the first means we have of accurately measuring these currents, it may prove of great value in the development of the science.

MAURICE SOLOMON.

REPORT OF THE METEOROLOGICAL GRANT COMMITTEE.

IN December, 1902, a committee was appointed by the Treasury "to inquire and report as to the administration by the Meteorological Council of the existing parliamentary grant, and as to whether any changes in its apportionment are desirable in the interest of meteorological science, and to make any further recommendations which may occur to them with a view to increasing the utility of that grant." The committee was composed of Sir Herbert E. Maxwell, Bart., M.P. (chairman), Mr.

J. A. Dewar, M.P., Sir W. de W. Abney, K.C.B., F.R.S., Sir F. Hopwood, K.C.B., C.M.G., Board of Trade, Sir T. H. Elliott, K.C.B., Board of Agriculture, Mr. T. L. Heath, Treasury, Dr. R. T. Glazebrook, F.R.S., and Prof. Joseph Larmor, F.R.S.

The report of the committee has just been published as a Blue-book (Cd. 2123, price 2½d.), and a summary of some of the points of scientific interest in it is subjoined.

SCIENTIFIC RESEARCH.

The committee of 1877 recommended that "the council should be at liberty to appropriate a part of their annual grant to the purposes of any special researches which they may think important, and in such cases it should rest with them to select the investigators and fix the remuneration."

The council, as might be expected of a body appointed by, and reporting annually to, the Royal Society, has never lost sight of this part of its functions; but the expansion of the routine work of the office, including therein the receipt, discussion and reduction of observations, the preparation and issue of forecasts and warnings, the supply of instruments and the annual inspection of observatories, &c., has absorbed nearly the whole of the grant, leaving a comparatively trifling sum—700l. to 800l.—to be devoted to meteorological research. The council has made a strong representation that, for the effective performance of this part of its duties, the staff requires strengthening by the addition of "a few assistants specially qualified by a knowledge of mathematics and physics for undertaking the investigation of such questions as are contemplated." The additional annual cost of three such assistants, with the incidental expenses, was estimated at 2250l. It appears from the evidence that it would be desirable for the council to have access to a meteorological laboratory properly equipped, which would serve as one of the first-order observing stations.

We believe that the time has arrived when one of two alternatives must be taken, viz. either to provide the Meteorological Office with the additional funds necessary for the effective prosecution of independent and cooperative research, or practically to confine the functions of the Meteorological Office to the ordinary routine work. In this latter case it would be necessary to rely upon members of the council who are appointed by the Royal Society to keep abreast of the advance in meteorology which may be achieved by British and foreign scientific societies and by the Governments of foreign countries independently of the office.

We do not believe that a middle course can be pursued with any advantage. The present grant is little more than enough to maintain the office, the five observatories depending thereon, and the library, and to provide for the superannuation of the staff. It would be better to circumscribe the operations of the council to routine than to expect them to undertake investigations for which they have not adequate means.

An example of the difficulty arising under present conditions may be cited in the invitation forwarded by the Foreign Office to the council in 1902 to join in an international scheme for investigating the upper atmosphere by means of kites and balloons. The invitation had to be declined for want of the requisite 500l. a year.

It is clear that, from the first, it was intended that the directors of the Meteorological Office should be chosen with a view to their capacity for directing experiment and research; otherwise their appointment would not have been committed to the Royal Society. On the other hand, we perceive strong objections to granting money for scientific research in meteorology, except on the direct responsibility of a Minister of the Crown. This brings us back to the repeated recommendation of the Royal Society that the Meteorological Office should form part of one of the Government departments—a recommendation which we have included among those now submitted to your lordships.

It appears that the present constitution of the Meteorological Office was never regarded by the Royal Society as a permanent one, but as "a temporary measure till some other organisation should be carried out." We regard this as a favourable opportunity for placing the Meteorological Office upon a permanent footing.