CURRENT NOTES ON ANTHROPOLOGY.

THE PAPUANS AND MELANESIANS.

In a short article in *Globus* (Bd. 72, No. 9) Professor F. Müller sets in sharp contrast from the linguistic side the Papuans and Melanesians. The latter he considers to be Malayo-Polynesians, deeply tinged with Papuan blood, and speaking languages which are Malayan in grammar, but with a vocabulary containing a considerable residuum of Papuan roots. They have a decimal system, while the Papuans have only two numerals; the Melanesian dialects all have pronomial suffixes, which are wholly unknown in Papuan tongues; and other equally marked differences.

Like the negroes of Africa, the Papuans have a large number of widely distinct linguistic stocks; while it is well known that the Melanesians and Malayo-Polynesians are monoglottic. Physically the Melanesians are almost identical with the Papuans, but their tongues prove the deep influence of other blood. The purest examples of the Papuans are to be found in the interior of New Guinea, where they occupy a vast territory of which we know scarcely anything.

In this connection should be mentioned a paper on 'Observations on a Collection of Papuan Crania,' by Dr. George A. Dorsey, with notes on their decorative features by Professor Wm. H. Holmes, lately published by the Field Museum, Chicago. The measurements are most carefully done.

ETHNOGRAPHY AND HISTORIC SCIENCE IN AMERICA.

Under the above title Dr. F. Ratzel has an article in the *Deutsche Zeitschrift für Geschichtswissenschaft*, 1897, No. 3, appreciative of several recent works by American historical writers. He points out with force how the study of the aboriginal population of America has widened the range of historical views among us in the last quarter of a century. "Prescott described ancient Mexico as a curiosity which might have belonged to another planet. To-day the pre-Columbian culture of America pours light on the historic consciousness of Americans. Far beyond colonial history stretches the indefinite expanse of aboriginal history. This close relationship of history and ethnography forces the problems of the histories of races and peoples on the attention of every historical student."

Just how that relationship is to be understood and brought into the writing of history is a question which is not yet fully answered, as is easily evident from Dr. Ratzel's paper and the appendix to it by Dr. K. Lamprecht, one of the editors of the *Zeitschrift*. Enough, however, that it is recognized by such high authorities as one which can no longer be neglected.

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BOTANICAL NOTES.

ENUMERATION OF THE PLANTS OF EUROPE.

Seven years ago (1890) Dr. K. Richter brought out the first volume of a work entitled 'Plantæ Europææ,' which was intended to enumerate all the flowering plants growing spontaneously in Europe. The death of the author brought the undertaking to a standstill, and threatened to leave the work unfinished and fragmentary. Fortunately this calamity has been averted, and we are likely to see the work completed within a few years. Dr. M. Gürke, of the Berlin Botanical Museum, has recently issued the first fascicle of the second volume, and a second fascicle is promised within a few months.

The original plan of the work, which is practically unchanged by the new editor, included the systematic arrangement of all the European species under their proper orders and classes. The first description of

each species was to be carefully cited, and a full list of synonyms given. The original author adhered to the 'law of priority' with considerable rigidity, and therefore cited the dates of the accepted specific names and all synonyms. His initial date for the present system of nomenclature was that of the publication of the first edition of Linnæus's 'Species Plantarum,' viz.: 1753, and he discarded absolutely all earlier names. Dr. Gürke apparently does not so fully sanction the strict application of the law of priority, although he follows it in nearly all cases, his practice agreeing with that of the other Berlin botanists, who would except certain long-used names from the application of the law.

Volume I. included the Monocotyledons, which number 1839 species, 840 sub-species, and 122 hybrids. These are divided among 259 genera. The largest orders are the Gramineæ (751 species), Liliaceæ (342), Cyperaceæ (287), Orchidaceæ (170), and Iridaceæ (105).

The first fascicle of Volume II. includes a number of orders of apetalous plants, arranged in the Engler and Prantl sequence, viz.: Juglandaceæ (1 species), Myricaceæ (2), Salicaceæ (234), Betulaceæ (24), Fagaceæ (34), Ulmaceæ (7), Moraceæ (22), Loranthaceæ (4), Santalaceæ (26), Balanophoraceæ (1), Aristolochiaceæ (16), Rafflesiaceæ (1), Polygonaceæ (138), and Chenopodiaceæ (unfinished, 89). In many of the foregoing orders the numbers include many hybrids. This is especially true of the Willows, of which there are 48 distinct species and more than three times as many hybrids (178); of the Oaks there are 21 species and 11 hybrids, but here there are included under the 21 species no less than 52 sub-species.

THE DISEASES OF BERMUDA LILIES.

THE beautiful lilies which are annually grown in enormous quantities, to be used for decorative purposes during the Easter services, have become seriously affected by some obscure diseases which threaten to drive out their cultivation. For some time Mr. A. F. Woods, the Assistant Chief of the Division of Vegetable Physiology and Pathology, in Washington, has been studying these diseases, in the hope of finding their cause and cure. The diseased condition is characterized by the spotting and distortion of the leaves, flowers and bulb-scales, and the stunting of the plants. In severe cases the leaves, as they appear above the ground, are marked with small, yellowish-white shrunken spots, which finally dry out and collapse. Occasionally the disease appears to be somewhat local, the leaves on one side of the stem, or of particular whorls, alone being affected. It is estimated that from twenty to sixty per cent. of the entire hot-house crop of these lilies is annually destroyed by disease.

Many theories have been suggested as to the cause of the trouble, some attributing it to the growth of the bulbs upon worn-out soils, some to the weakening of the vitality of the plants by unscientific treatment, as premature removal of leaves, premature harvesting of the bulbs and want of care in the selection of bulbs for propagation. Others again suggest that bad treatment of the bulbs in the forcing house is the principal cause, while still others think that insects produce the trouble.

Mr. Woods finds, upon investigation, that, instead of one disease, we have to deal with several. The lilies are suffering from a complication of diseases. He summarizes his results as follows: "The work done shows that the disease is due to a combination of causes. In the first place, the bulbs have become weakened through improper selection and improper propagation, and this weakening is further increased by the attacks of mites and certain fungi and bacteria. Bulbs which have

been weakened in this way might regain their strength if the mites and fungi could be kept down; but those which are naturally weak cannot be made strong. During the time plants are being forced they may also be weakened by overwatering and consequent asphyxiation of the roots, or by allowing the roots to become too dry and then overwatering. The foliage of such plants may be free from spots and distortions, but usually the leaves are badly diseased. The spotting and distortion of the foliage is often due to the direct attacks of several genera and species of aphides and of the young of the bulb mite; to the injection of water into the young leaves in watering or syringing, and to the presence of water between the young leaves of plants having soft foliage. The injuries from the attacks of organisms are always more severe in the susceptible or naturally weakened bulbs."

No single course of treatment can be recommended to help this trouble. Careful selection of the bulbs, rotation of crops, avoidance of premature cutting of the stems or digging of the bulbs, the use of aërated soil, care in watering, the careful destruction of aphides and mites and the use of chemical fertilizers, instead of those derived from animal excrement, are recommended as likely to materially check the disease.

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NOTES ON INORGANIC CHEMISTRY.

A recent number of the *Zeitschrift für anorganische Chemie* contains a review of the recent work on the genesis of petroleum and other natural hydrocarbons. Engler's hypothesis is that petroleum is formed by the distillation of animal fats at high pressure. Lobry de Bruyn has described a demonstration of this method of formation as a simple laboratory experiment. Heusler calls attention to the fact that Engler's distillate contains a considerable quantity of unsaturated hydrocarbons, which is not the case with petroleum. By treatment with aluminum chlorid these hydrocarbons are changed into a high-boiling lubricating oil; hence it is probable that petroleum formation took place in two stages, the first distillate being changed by metallic chlorids into petroleum. According to Ochsenius, petroleum was formed from plant and animal remains by heat and pressure under the influence of the salts derived from sea water. On the other hand, Moissan finds in his work on the metallic carbids, a confirmation of the theory first proposed by Mendeleef, that petroleum originates from the action of water on metallic carbids in the interior of the earth. Uranium carbid, for example, yields with water both solid and liquid hydrocarbons. These are, indeed, in part unsaturated, but at a higher temperature saturated hydrocarbons might be formed from them by the action of hydrogen, which is often evolved from carbids by water. Aluminum carbid and glucinum carbid, indeed, give with water pure methane (marsh gas). Viola believes that the asphalt and the petroleum of Castro de Volci, near Rome, in Eocene limestone and sandstone is of intratelluric origin, and has been distilled from great depths. The region shows decided evidence of volcanic phenomena. On the other hand, van Werweke holds that the petroleum of Pechelbronn, in Lower Alsace, has originated in Tertiary strata and has not come from below.

In a polemic article in the *Zeitschrift für angewandte Chemie*, D. Holde claims that the theory that petroleum has originated from animal remains should be known as the Engler-Höfer theory, Höfer having first proposed the theory in 1888 in his 'Das Erdöl und seine Verwandte,' and Engler having