

Hamburg powder company at Duneberg, is, however, attracting the most attention on account of the high initial velocities and low pressures which it has actually given in practice. The grains weigh about forty-two grams, have a specific gravity of 1.86, and have the hexagonal prismatic form so generally adopted in Europe, with one canal. They have the color of cocoa; and from this characteristic the powder has become known as 'cocoa' powder. The reddish hue seems to be due to red-burned charcoal. Powders heretofore made with red coal have been found to be readily inflammable, and to explode with dangerous brusqueness, producing high local pressures; and hence care has been taken to select only well-burned black coal for the manufacture of military gunpowders. In spite of the fact that 'cocoa' powder contains red coal, it has been found by experiment, that a grain of it burns slowly and with very slight deflagration, when ignited in the open air; and that a mass as great as fifty-five kilograms, when enclosed in a wooden box and ignited, burned slowly, without exploding, and simply raised the cover of the box without displacing it. This may be owing to the large percentage of charcoal, the low percentage of sulphur, and the high specific gravity; but the slowness of combustion is equally marked when a grain is crushed to meal-powder; and it is probable that there is a difference in the kind of charcoal, as well as in the quantity. In addition, it is claimed that this powder is but slightly hygroscopic, and yields very little smoke. The advantage of this last-mentioned property is shown by the recent experience at Alexandria, where the English were compelled from time to time to cease firing, to allow the smoke from their guns to clear away; and in the Sudan, where the English were blinded by the smoke, under which the enemy crept upon them. On the other hand, it is stated that 'cocoa' powder fouls badly.

With gunpowder, as with all mechanical mixtures, the uniformity of the product depends largely upon the thoroughness of the incorporation. To test gunpowder for this most important condition, it is customary to flash a quantity upon a plate of glass, and to examine the residue; but the deliquescent and perishable character of the deposit necessitates immediate examination, while long and frequent experience with the test is required in order to enable one to draw a proper conclusion from the observation. Col. Chabrier has proposed the use of paper, colored blue by starch and potassium iodide, upon which to make the flash, the color being discharged by the combustion of the powder. The test-papers of this process, however, are also evanescent, and the trained memory must be relied upon in reaching a decision. The writer has recently proposed the use of a paper colored with Turnbull's blue, such as is produced in the 'blue-print' process of photography; since the color of this paper is discharged by the action of such alkaline salts as are formed in the combustion of gunpowder. For use, the paper is dampened; the powder is placed upon it in a uniform heap, and then flashed. The paper is exposed to the action of the residue for half a minute, and then washed in running water,

and dried. The result is, that, wherever a globule has rested, the color is bleached. It is believed that these spots will be smaller and more uniformly distributed as the incorporation approaches completeness, provided the state of the different samples tested is otherwise the same. These test-papers can be preserved without change, and may be filed as standards for comparison, or forwarded to experts for examination.

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#### NOTICES OF ETHNOLOGIC PUBLICATIONS.

THE ethnology of the Eskimo, better called Innuít people, is to us of an ever-renewed interest, not only on account of the researches around the arctic pole, in the furtherance of which this race has been eminently helpful, but also for the peculiar ethnographic position of the people among the other American nations. Dr. Franz Boas has discussed the present seats of the Neitchillik-Eskimo, first seen by Sir John Ross (1829-33), and recently visited by Lieut. Schwatka, and illustrates his article by a topographic map.<sup>1</sup> Another article of singular interest, by Edward B. Tyler, deals with "Old Scandinavian civilization among the modern Eskimos," with two plates,<sup>2</sup> and contains a large amount of facts new to science. Bering's Straits, considered as the 'bridge' between the two continents and hemispheres, necessarily calls the attention of all ethnologists to the tribes inhabiting both sides of it. The ethnographic relations of these are expounded with minute care by Prof. G. Gerland of the Strasburg university, in a paper inscribed "Zur ethnographie des äussersten nordostens von Asien."<sup>3</sup> The tribes on the Asiatic side are described from the accounts given by the latest travellers, and old errors concerning them are refuted.

Rev. J. Owen Dorsey, formerly missionary among the Ponka Indians, and a specialist in the study of all tribes and languages of the Dakotan family, has given a lucid 'account of the war customs of the Osages'<sup>4</sup> as the result of a visit to that tribe, made in 1883. These interesting war and hunting customs are chiefly based upon the gentile or totem-clan system. The rules observed in encamping and other military acts were most rigidly and unalterably enforced, perhaps more so than our own military regulations, and through their archaic forms testify to a high antiquity. Customs like these may be traced among all the warlike tribes of the Mississippi plains, even at the present time, when they are hedged in within the narrow limits of Indian reservations. Numerous illustrations facilitate a clearer understanding of the practices described.

Dr. W. J. Hoffman presents us a "Comparison of Eskimo pictographs with those of other American aborigines,"<sup>5</sup> interspersing his article with numerous

<sup>1</sup> *Zeitschr. gesellsch. etn. Berlin*, xviii. 222.

<sup>2</sup> *Journ. anthrop. inst.*, 1884, 348.

<sup>3</sup> *Zeitschr. gesellsch. etn. Berlin*, xviii. 194.

<sup>4</sup> *Amer. nat.*, 1884, 113.

<sup>5</sup> *Trans. anthrop. soc. Wash.*, ii. 128.

illustrations and linguistic scraps. Another paper,<sup>1</sup> by A. S. Gatschet, discusses his ethnologic and linguistic observations made among the Shetmasha Indians of St. Mary's parish, La.

Ethnologic results of a visit, made in 1883, to two Iroquois reservations in New-York state, are published in French and in Dutch by Dr. H. ten Kate, who in the same year made somatological and other researches among the Indians of the south-west of the United States and the north-west of Mexico, including the peninsula of California.

Wood-carvings of the Haida and other tribes of the north-west coast of North America are figured upon thirteen splendidly colored plates, with descriptive letter-press, in a folio volume entitled 'Amerikas nord-westküste; neueste ergebnisse ethnologischer reisen.' The objects represented consist of masks of human and animal shape; of implements, such as spoons, vases, rattles; of troughs, posts, idols, and other wood-carvings, — all of which are now exhibited in the collection of the Berlin royal museum. This folio was published by Asher & Co., in Berlin, under the auspices of the direction of the ethnologic department in the museum in 1883 (Dr. Adolf Bastian); and an English edition was issued in the same year.

The political and social condition of the Liberian negroes, an immigration from North America into western Africa, is discussed in a long and very elaborate article read to the Geographical society of Berne, Switzerland.<sup>2</sup> The capital of this Ethiopian republic is Monrovia: the population consists of two elements quite distinct from each other, — the aboriginal negroes and the immigrated settlers. Slavery is nominally abolished by the constitution of the republic; but a substitute has been found in the so-called 'bushniggers,' whose only toilet consists in a handkerchief worn about their loins. The Liberia constitution proclaims full liberty of religion, conscience, of speech and press, and gratuitous education of children; and one of the more noticeable paragraphs precludes white people from acquiring any real estate, and from being intrusted with any public office. J. Bütkofer, the author of the article, gives many observations and personal experiences from his travels in the interior and on the coast of Liberia.

An excellent ethno-archeological publication on Bavaria, which deserves more than a passing notice, is published under the title, 'Beiträge zur anthropologie und urgeschichte Bayerns.' These contributions are the organ of the Munich society of anthropology, ethnology, and prehistories, being issued in four numbers to a volume of lexicon-octavo size, and profusely illustrated. Under the editorship of Joh. Ranke and Nic. Rüdinger, five volumes have been issued up to the present year. The most extensive and difficult topic now engrossing the attention of that scientific body is the publication of the archeologic map of Bavaria, — a land which covers an area of 75,000 □ kilometres, and has been in its more level parts thoroughly explored by archeologists for remains of antiquity. Of the fifteen sheets of the map, five have been

issued by the editor in charge, Prof. F. Ohlschlager, who uses over twenty colored sign-marks for the objects discovered, and adds a statistical and topographic register of the finds. The occurrence of all the 'hochäcker,' a relic analogous to the 'garden-beds' of the American north-west, has been represented on a separate map in the fifth volume: they are almost entirely limited to the southern parts of Bavaria, extending between Augsburg and Salzburg.

#### MENTAL EVOLUTION IN ANIMALS.

*Animal intelligence.* By GEORGE J. ROMANES. New York, Appleton, 1883. (International scientific series.) 498 p. 8°.

*Mental evolution in animals.* By the same. New York, Appleton, 1884. 384 p. 8°.

In the wide range of interesting facts collected and published a year ago in 'Animal intelligence,' Mr. Romanes laid a broad foundation for his present work, 'Mental evolution in animals;' and these volumes, we find, are preliminary to a forthcoming work upon 'Mental evolution in man,' which will complete the most extensive study of comparative psychology ever attempted. This subject has not hitherto received the comprehensive treatment which its importance deserves. One of the most vital questions of our times is the genetic continuity of the mind as well as the physical structure of man with that of the lower animals: it marks the point where the views of Darwin and Wallace, and of many of their followers, diverge; and, whatever our own opinions may be, we must regard this as the crowning problem of animal evolution in its broadest sense. In the first few pages of these two works, it is easy to discern the author's personal standpoint, and to foresee that the third volume will contain an elaboration of the psychology of the 'Descent of man.' Reserving, however, a complete discussion of the final question for the later work, he carries us here to the summit of the lower animal scale, ably following every line of inquiry. Although not a profound thinker, Mr. Romanes is a thorough and original investigator; and his previous labors, both in biology and psychology, qualify him peculiarly for this line of research. While as a philosopher he generally follows Hume, Mill, Bain, and Spencer, his position as a psychologist is often very independent. As a follower of Darwin, he naturally inclines strongly to his views on many questions; attributing to natural selection almost unlimited influence in the development of instinct and intelligence.

Based upon the generally accepted truth of the evolution theory, below the human scale,

<sup>1</sup> *Trans. anthrop. soc. Wash.*, ii. p. 148.

<sup>2</sup> *Jahresb. geogr. gesellsch. Bern*, v. 75.