

able extent to the great development of the glabella and supra-orbital arches. Now these processes are well known to present very striking variations in existing human races. They are usually supposed to be developed as buttresses for the purpose of affording support to the large upper jaw and enable it to resist the pressure of the lower jaw due to the contraction of the powerful muscles of mastication. These processes, however, are usually feebly marked in the microcephalic, prognathous and macrodont negro skull, and may be well developed in the macrocephalic and orthognathous skulls of some of the higher races. Indeed, their variations are too great and their significance too obscure for them to form a basis for the creation of a new species of man. Both Huxley and Turner have shown that the low vault of the Neanderthal calvaria can be closely paralleled by specimens of existing races.

If the characters of the Neanderthal calvaria are so distinctive as to justify the recognition of a new species, a new genus ought to be made for the Trinil skull-cap. In nearly every respect it is distinctly lower in type than the Neanderthal, and yet many of the anatomists who have expressed their opinion on the subject maintain that the Trinil specimen is distinctly human.

Important and interesting as are the facts which may be ascertained from a study of a series of skulls regarding the size and form of the brain, it is evident that there are distinct limits to the knowledge to be obtained from this source. Much additional information as to racial characters would undoubtedly be gained had we collections of brains at all corresponding in number and variety with the skulls in our museums. We know that as a rule the brains of the less civilized races are smaller, and the convolutions and fissures simpler, than those of the more cul-

tured nations; beyond this but little more is definitely determined.

As the results of investigations in human and comparative anatomy, physiology and pathology, we know that definite areas of the cerebral cortex are connected with the action of definite groups of muscles, and that the nervous impulses starting from the organs of smell, sight, hearing and common sensibility reach defined cortical fields. All these, however, do not cover more than a third of the convoluted surface of the brain, and the remaining two thirds are still to a large extent a *terra incognita* so far as their precise function is concerned. Is there a definite localization of special mental qualities or moral tendencies, and if so, where are they situated? These are problems of extreme difficulty, but their interest and importance are difficult to exaggerate. In the solution of this problem anthropologists are bound to take an active and important part. When they have collected information as to the relative development of the various parts of the higher brain in all classes of mankind with the same thoroughness with which they have investigated the racial peculiarities of the skull, the question will be within a measurable distance of solution.

JOHNSON SYMINGTON.

#### SCIENTIFIC BOOKS.

*The Alchemist.* By BEN JONSON, edited with introduction, notes and glossary by CHARLES MONTGOMERY HATHAWAY, JR. New York, Henry Holt & Co. 1903. Pp. vi + 373. 8vo. This comedy was first produced in 1610, and proved a most severe satire on alchemy and an effective exposure of many of the swindles associated with it; in this satisfactory edition Dr. Hathaway has given his readers a text based on the folio of 1616, together with variants of several other early and rare editions.

Prefixed to the text are sections on the history and on the theory of alchemy; these

include its status in England at the period of the production of the play and narratives showing its adaptability to swindling credulous persons at all periods. The editor then points out the originality of Jonson and his slight indebtedness to previous writers; he also draws a picture of Simon Forman, a notorious London quack flourishing in Jonson's day, who probably furnished the author one of the characters of the play (Subtle).

The editor gives many instances of the swindling operations in recent times by pretended alchemists, especially dwelling on the tricks of Morrell and Harris in New York, of Pinter in London, and of the Rev. Mr. Jernegan, of Connecticut (in connection with the fraudulent extraction of gold from sea water), and he gives references to the daily press for particulars. Elsewhere he names the three principal branches of astrology and refers to some of the modern aspects of this pseudo science. In a note on Jonson 'taking in of shaddows with a glass' he writes of catoptiomancy, and refers to the notorious Kelley who acted as 'skryer' for Dr. Dee, in Queen Elizabeth's day.

Following the text are one hundred pages of notes, partly taken from preceding editions, notably Gifford and Whalley; a bibliography of works consulted, in which one misses the names of Hermann Kopp ('Geschichte der Chemie,' 4 vols., 1843, 'Die Alchemie in älterer und neuerer Zeit,' 2 vols., 1886), of William Johnson ('Lexicon chymicum,' London, 1652), and the 'Chymicall Dictionary,' bound with Michael Sandivogius' 'New Light of Alchemie' (London, 1650), but perhaps these were not accessible to Dr. Hathaway.

There is also a glossary of forty columns, and finally an index. Each section is marked by thorough work and painstaking study on the part of the editor; the glossary in particular may be of much assistance in explaining archaic and obsolete terms in the alchemical writings of other authors than Jonson.

The notes refer to passages in a variety of languages, show judicious selection and a wide acquaintance with literature. The deep study of alchemical jargon has familiarized

the editor with incomprehensible gibberish to such an extent that he himself is not always perfectly clear. (See note on page 288, last three lines.) And he is sometimes tempted to substitute conjectures for more definite information, especially in discussing the signification of impossible words.

Dr. Hathaway shows the relations which Jonson's comedy bears to John Lyly's 'Gallathea,' printed in 1592, to Gower's and Chaucer's well-known poems, to Lydgate's 'Secrees of old Philisoffers' and to the principal metrical treatises on alchemy preserved by Elias Ashmole in his 'Theatrum Chemicum Britannicum' (London, 1652), from which he gives many citations.

The editor has been very successful in demonstrating that 'Nothing in Jonson is done at random.' The whole work is creditable to the editor, and for its typographical excellence to the publisher.

HENRY CARRINGTON BOLTON.

#### BLATCHLEY'S ORTHOPTERA OF INDIANA.

IN the Twenty-seventh Annual Report of the Department of Geology and Natural Resources of Indiana, 1902, Mr. W. S. Blatchley, State Geologist, has devoted over 350 pages to the Orthoptera of his state, and under this modest title has given us one of the best pieces of entomological work that has come to us during the present year. Not only are all of the species known to the author to occur in the state fully described, some of them for the first time, but he has given in connection therewith every scrap of information relating to them that he has been able to obtain, either by observation, correspondence or found recorded in entomological literature. The list includes 148 species, many of which are figured, the illustrations consisting of 121 figures, one colored and two uncolored plates, which with a full bibliography and synonymy, keys to families, genera and species found in Indiana, sections relating to the external anatomy of the order, natural enemies, life zones of Indiana, a glossary of terms used in the text, together with a full index, gives the work a