and Dr. Pole, it appears, wrote for him the rather jejune algebraic investigation of the principles of such machines, which, when we come to examine it, we find is merely what we may find in any elementary book on pneumatics; and owing to the omission of all the *structural conditions producing loss of effect* in blowing machines, exists, in fact, as a mere parade of useless symbols, of no value to the constructor or the purchaser or the user of such apparatus.

Now we are wholly unable to see the necessity for thus cumbering with a needlessly hooked-on subject a book on Iron Metallurgy at all; but if otherwise, then it should have been gone into thoroughly, and in a way to be of real value to the constructor. To have done this, however, would have required some fifty pages or more, so that a far better mode, in our judgment, would have been to have simply confined the point to a reference to the great monographs which exist on this special subject, both theoretic and practical. Neither Dr. Percy nor Dr. Pole seems to have been aware of the fact that a quite exhaustive investigation of the theory of blowing machines (omitting none of the conditions of practice) and of high merit, was published as long ago as 1805, by Herr J. Baader, Counsellor of Mines of the Kingdom of Bavaria, and which was specially and by the authority of Napoleon I. translated into French and published in the *Annales des Mines* in 1809. There may be such a thing as apparent completeness, which yet is only the piling together of incongruity or of incompleteness.

But this want of the sense of balance and of relative importance is not confined to such collateral subjects of practice. Dr. Percy, in the volume here noticed, devotes nine pages to the physical properties of lead, in commencing, and of these we find four (under the head of Resistance to Pressure) are occupied with details of Coriolé's fruitless attempts in 1829 to construct weighing machines, whose indications were to be derived from the compression suffered by known volumes and forms of lead pieces—a subject as indirect and foreign to the physical properties as it is far away from the metallurgy of lead.

One statement made in this part of the volume is undoubtedly incorrect, where it is said, "by hammering lead becomes harder, but acquires its original softness by annealing." The actual fact is, that lead cannot be made harder by hammering, for its annealing temperature is so low (that of every metal being a function of its fusing point), and it suffers so large a deformation by reason of its softness when hammered, that enough heat is evolved by internal work to cause the metal to anneal itself,—in other words, never to become harder. This has been fully ascertained, and the fact has even been taken practical advantage of by those engaged in "drawing lead pipe" by the older methods, who are well aware that a hard pinch at first or rapid reduction in diameter in passing through the holes of the draw-plate, heating the lead, enables it to be drawn into finished pipe with a less total expenditure of power than if drawn slowly and with so gradual a reduction in diameter as that the lead should remain always nearly cold. Were the lead hardened here by a compression quite the same in effect as hammering, the very reverse must be the case. This volume comprises a very good account of the Pattinson process for separation of silver, and also of Parkes's zinc process. What can have induced Dr. Percy (who is, we believe, fond of

scholarship) to employ such barbarous compounds as "lithargefication," "desilverisation," and "decopperisation," in place of "disargention," "decupuration"? What would be thought of "desugarification" as a substitute for "desaccharisation"?—but these are matters of taste and no more.

The chapter on the ores of lead and that on the assay of lead ores are amongst the very best in the volume, which is beautifully printed with the clearest of type and paper, and with good indices. There are nine pages near the end devoted to poisoning by lead, which, though certainly not the metallurgy of lead, may prove of some use to those employing work-people in lead smelting or manufacturing operations; though we think here, perhaps, the wisest instructions might have been simply, "send the patient to the doctor." We have little confidence in amateur or improvised medicine on the part of "laymen," in such cases as lead-poisoning, at any rate. On the whole, though, as we have had to point out, this work of Dr. Percy's is not free from faults, it is, we think, in several ways the best of all those on Metallurgy which have appeared from under his pen, and in the collection and discussion of a vast array of facts is a noble volume, the very best that yet exists in English on its subject.

NEWMAN'S BRITISH BUTTERFLIES

An Illustrated Natural History of British Butterflies.

By Edward Newman, F.L.S., F.Z.S., &c. 8vo. (London: W. Tweedie, 1871.)

THE British Butterflies form a small but striking group of insects, and hence not only are they as a general rule the first objects on which the collecting spirit of the

RED ADMIRAL (*Pyrameis Atalanta*). Upper side.

Under side.

young entomologist is exerted, but they also offer one of the best means of commencing the study of entomology. Thus they are easily collected and preserved, their appear-

ance is pleasing and often beautiful, their characters are generally very clear and distinct, so that the discrimination of the species is by no means difficult, and their

PAINTED LADY (*Pyrameis Cardui*).

Painted Lady. Var. 1.

Natural History is easily studied; whilst the small number of the species renders it an easy matter for the beginner to procure in a season or two by far the greater proportion of the known forms.

Although there are already many books treating specially of the British butterflies, some of them expensive, and others so cheap as to come within the reach of every one, we cannot blame Mr. Newman for adding one more to the number, especially as his work is distinguished by the great prominence given in it to the Natural History of the species. Upon this subject, as also upon the distribution of the species in Britain, Mr. Newman has long been publishing details from his own observations and those of other naturalists, in his periodicals the "Zoologist" and "Entomologist;" and the whole of the information thus accumulated is here summarised and supplemented with observations derived from other sources. Another useful feature in the present work is the insertion of notices, and frequently of figures of the more important varieties of each species, which will often relieve the young student from a state of puzzled suspense in the determination of his specimens. The classification adopted is founded, in its broad outlines, upon the preparatory states of the insects, but it leads pretty nearly to the same results as the system more generally followed.

The illustrations are very numerous, including figures of all the species and of both sexes when there is any difference either in the upper or lower surface. They are all woodcuts, and are generally well executed, as may be seen from the examples which we are enabled to give.

W. S. DALLAS

OUR BOOK SHELF

The Western Chronicle of Science. Edited by J. H. Collins, F.G.S., Secretary to the Royal Cornwall Polytechnic Society. January to June, 1871. (Falmouth. Pp. 96.)

WE are glad to afford space for a short notice of this cheap scientific journal, which, although specially intended for the benefit of the mining population of Cornwall and West Devon, deserves a wide circulation in all our mining districts. Each monthly number contains one or two original articles, either on general subjects, as "The Practical Value of Scientific Knowledge," or giving descriptions of various forms of machinery, followed by notices of books, and a monthly chronicle of science. From one of the editorial articles on "The Practical Value of Scientific Knowledge," we learn that a good stoker may effect an annual saving of nearly 35% per annum over a bad one, and that it is a common Cornish habit to hang heavy jackets, great coats, &c., on the lever of the safety valve of engines devoid of a pressure gauge; while the farmers, with the view of giving their ground two good things at once, mix lime with their guano some days before spreading the manure. A very remarkable natural-history statement is made by Mr. Williams, of Hayle, in his paper on "Scientific Nursing." "I have (he says) in my possession a double chick, the produce of an egg laid by a barn-door fowl, one half being the natural species, the other half composed of the sparrow-hawk!" Until this remarkable chick appears *in propria persona* at the office of NATURE, or, at all events sends us its photograph, we must, with much regret, decline to accept the fact.

Medizinische Jahrbücher. Herausgegeben von der K. K. Gesellschaft der Aerzte, redigirt von S. Stricker. Jahrgang, 1871, Heft I. und II. Mit 26 Holzschnitten und 2 lithographirten Tafeln. (Vienna: Braumüller; London: Williams and Norgate, 1871.)

THE two parts before us are the continuation, in a new form, of an old and valuable periodical, and, under Prof. Stricker's able editorship, its tendency, instead of being, as heretofore, chiefly clinical, will be so far modified as to embrace all the results obtained in the physiological laboratory. A glance at the table of contents is sufficient to prove the truth of this statement. Thus putting aside the first paper by Prof. Stricker, entitled "Pathology and Clinical Observation;" the rest, nine in number, are nearly all devoted to the results of microscopic research. Thus, Dr. Genersich contributes a paper on the Serous Canals of the Cornea; Dr. Heiberg one on the Regeneration of the Corneal Epithelium; Dr. Güterbock one on Inflammation of Tendons; Dr. G. F. Yeo one on the Structure of Inflamed Lymphatic Glands; Dr. Lang one on the First Stages of Inflammation in Bone; Dr. Albert and Dr. Stricker one on Surgical Fever, and the latter author another on the nature of the Poison of Pus, and so on. The journal leads off with a good start, and if it continues as it has commenced, will probably take up a leading position. We notice one or two of the papers that appear to be of general interest. H. P.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his Correspondents. No notice is taken of anonymous communications.]

Cotteau's "Echinides de la Sarthe"

A NOTICE of Cotteau et Triger's *Echinides de la Sarthe* in a recent number of NATURE (June 15, p. 120) is likely to convey a false impression of the accuracy of M. Cotteau, and throws considerable doubt on the value of his work. It is not often that French scientific men are as conscientious as he is in the examination of authentic types. There is hardly a collection of fossil Echini which M. Cotteau has not examined; and his