to increase its cogency. It is probably the only instance of a theory which has sprung from its author's brain fully grown, and armed at every point against its opponents; and it is in remarkable contrast to that great engine of mathematics which was invented by such men as Newton and Leibnitz, and which, nevertheless, has waited until comparatively recent times to be placed upon a thoroughly sound basis.

It is seldom that the press of any country brings out so poor an example of book-making as 'Darwin und seine lehre.' Its ostensible reason for existence is some recent action of the Prussian Diet; but the Prussian delegate must be a curious man, if he can shape his political course from any information which this book contains. There is no connection between the successive 'aphorisms,' and there is no reference to the volume or page from which they are taken. The extreme irksomeness of reading elegant extracts on any subject is naturally greatly intensified when the subject is one which depends for its interest on the cumulative nature of the evidence brought to bear upon it. One is surprised to find how Platonic an air sentences of Darwin's may have when separated from their context. No one would have believed that he has uttered so many fine sentiments. A selection from this selection would make a very respectable Darwin birthday-book. The extracts from predecessors and contemporaries, instead of making it plain just what had been said in the direction of Darwinism before Darwin's time, are also totally without any order or connection. They consist in such passages as these, — "Man is the great dash (*gedankenstrich*) in the book of nature" (*Jean Paul*); "Every being is as happy as it feels itself, not as I, with my intelligence, would feel in its place" (*Hartmann*); "Man was developed, not created" (*Oken*); "He who exists not, feels no kind of pain; annihilation, therefore, is not an evil" (*Fichte*), — together with others somewhat more to the point, chiefly from Haeckel and Büchner.

HOUZEAU AND LANCASTER'S METEOROLOGY.

Traité élémentaire de météorologie. Par J. C. Houzeau and A. Lancaster. 2e ed. Mons, *Manceaux*, 1883. 324 p., illustr. 24°.

The *Bibliothèque belge* for popularizing the sciences and arts includes this small volume as its second number. The authors have not succeeded in making it a very notable book, for it has about all the faults common to the many works of its class. It is essentially old-fashioned, except in the chapters on weather-services, which have a more modern flavor, although not of the best. Valuable space is given to the description of such instruments as the thermometer and barometer, which must already be familiar to a reader who has studied physics enough to appreciate the mention of expansion, radiation, and many other terms that receive no special explanation. The encyclopedic method is attempted: there seems to be a desire to say something of every thing, and consequently all mention of the *bora*, *mistral*, *föhn*, *sirocco*, *solano*, and *norther* is crowded into seven lines. It is a great mistake to suppose that the readers of popular scientific books will be content with such unsatisfying statements. The *föhn* may be a 'dry and warm wind,' but why is it so? The explanation involves some of the most recent and important applications of physics to meteorology, and a deliberate description of it would well replace the chapter on terrestial magnetism. But besides these errors, as they seem to us, in the plan of the book, there are implicit and explicit errors of fact. The low temperature of winter is regarded as the effect of the greater thickness of atmosphere through which the solar rays then pass, and no mention is made of their oblique incidence on the ground. The old error of two northern poles of minimum annual temperature is repeated. The less area of ice in the arctic than in the antarctic seas "must be attributed to the neighborhood of great continents which extend to the equator, and which transmit from point to point the heat thrown on the tropics." The maximum density of sea-water is given as 4° C. The equatorial current of the Indian Ocean is described as passing round the Cape of Good Hope, up and across the Atlantic Ocean, through the Gulf of Mexico, and thence as the Gulf Stream to Norway, without a word about the many branches on the way. Cloud-particles are considered chiefly vesicular; and their suspension in the air is said, before all, to be due to their electricity, which repels them far from the ground. The oblique motion of the trade-winds is wrongly explained, as usual, and part of their velocity is incorrectly regarded as an effect of the earth's rotation: they would flow faster if the earth stood still. The strength of storms is represented to be the simple direct action of the low pressure at their centre. 'Cyclone' is applied only to the Indian Ocean, and is said to be synonymous with 'tornado' in the United States. We cannot recommend the book.