tion of urea, he says, "As urea is highly soluble, it is never spontaneously deposited. It varies in amount with different diseased conditions: e.g., in febrile and inflammatory affections it is increased in the forming stage, and diminished in that of defervesence; in diabetes mellitus and simplex it is excessive in the urine; while in acute yellow atrophy of the liver it may be entirely absent. In acute and chronic Bright's disease there may be a decided falling-off from the healthy proportion, causing a lower specific gravity. In such cases there is more or less danger of uræmia." These clinical notes are well and concisely written, and increase the value of a book which is in all other respects excellent.

NOTES AND NEWS.

DR. EMIL BESSELS, the eminent Arctic explorer, died suddenly on Saturday, March 31, at Stuttgart. His death was reported here on Monday, but not confirmed until Wednesday. He was well known to American scientists, as he lived in Washington after his return from the 'Polaris' expedition, of which he was a member. He died while in his native country, where he was about to publish a number of works.

— The incessant endeavors of the Providence Franklin Society to organize a geographical survey of the State of Rhode Island have at last been successful. The Legislature of that State has voted a sum of five thousand dollars for a topographical survey, and appointed a commission of three to contract for and superintend the work. Prof. Winslow Upton, Mr. Mills, and David W. Hoyt were appointed commissioners.

— Th. Macfarlane, in the third 'Bulletin of the Laboratory of the Inland Revenue Department of Canada,' comments upon the adulteration of coffee in Canada. Among eighty-five samples collected in various cities of Canada, only forty-four, or fifty-two per cent, were genuine, while the rest were to a greater or less extent mixed with chiccory and roasted grain and peas. Among the samples occurred some described as "chiefly roasted grain with chiccory and a little coffee." As these samples were bought by revenue officers, it is probable that in reality the percentage of adulterated coffee is still greater than the above figures indicate.

— Dr. Götz Martius of the University of Bonn publishes a lecture upon the aims and results of experimental psychology, in which he makes a high claim for the admittance of this science to an acknowledged place upon the curriculum of every university. The immediate occasion of the address was to arouse an interest in this line of research among the members of the university at Bonn, and to urge the establishment of a laboratory where Professor Lipps, the well-known psychologist, and himself, can have the opportunity of contributing to the advance of this growing science. There are several indications that the leading educational institutions of this country will advocate a similar department in the near future.

— The Imperial Observatory of Rio de Janeiro plans the publication of a universal dictionary of climatology. For this purpose, the director, Mr. L. Cruls, has prepared and sent out a circular soliciting information from all official and private sources as to the climatic elements of places at which observations have been or are being carried on. A table is attached to the circular, in which the results of observations are to be inserted. The mean temperatures of the months of the year, the mean maxima and minima, humidity, days and amount of precipitation, cloudiness, frequency of gales, days of frost, prevailing winds, the absolute maxima and minima, the mean annual barometric pressure, and the mean annual oscillation of the latter, are the points on which information is solicited.

— Last summer Prof. B. W. Evermann of the State Normal School, Terre Haute, and Prof. O. P. Jenkins of De Pauw University, spent their vacation at Guyamas, Mex., on the Gulf of California, collecting fishes. They packed their specimens and shipped them for home, but they did not arrive until recently, having been lost somewhere. Professors Evermann and Jenkins will arrange the collection this summer, and prepare the results of their work for publication.

— In *Science* for March 9, p. 119, 1st column, 5th line from bottom, for 'homogeneous' read 'homonymous,' for 'image' read 'images,' and for 'it' read 'they.'

LETTERS TO THE EDITOR.

Dr. Edward Tyson and the Doctrine of Descent.

ONE of the things most strongly emphasized by the recent publication of Charles Darwin's letters is his conscientious recognition of the claims of others to the first discovery of either the law of descent with variation or the principle of natural selection. The pains he took to prefix to the later editions of his work on the origin of species an historical sketch, is evidence of his earnest desire to do full justice to all previous explorers in his field. He, however, did not consider it incumbent on him to look beyond the narrow circle of those who had distinctly and explicitly expounded a doctrine of derivation. Nevertheless, for the future historian of scientific belief, the mere foreshadowings and beginnings of the modern idea of the origin of species, which Darwin set upon a firm basis of inductive proof, cannot but have an enduring interest and importance.

In this view of the matter, I feel that I may perhaps claim space in your journal to call attention to the work and writings of a man who does not seem to have been mentioned heretofore in connection with this subject, but who undoubtedly had at least a vague presentiment of the coming theory of the descent of man, derived from anatomical investigations, which, even at the present time, would probably be regarded as skilful and exact. I refer to Dr. Edward Tyson, fellow of the Royal Society and of the College of Physicians, and otherwise distinguished in his day as a man of learning and ability, who published, in 1699, his treatise entitled '*Orang-Outang, sive Homo Sylvestris; or the Anatomy of a Pygmie compared with that of a Monkey, an Ape, and a Man.*'

It is pleasing to observe in this book not only the carefulness with which Dr. Tyson traced the differences and resemblances between the parts and organs of the little monkey brought to him from Africa and the homologous parts in the higher primates, particularly man, but also the ingenuity and insight with which he drew inferences, which, if freed from the repressing influences of the seventeenth century, we can hardly doubt would have extended to the clear discernment and acceptance of the general law of development. The details of his anatomical comparisons there is not room for here; but some of his theoretical views may, I think, be referred to without exceeding proper limits.

In the first place, he seems to have perceived, though dimly, the main basis of evolution; for, amongst other similar reflections, he says, "I find there are intermediate *Species* of *Beings* between *Vegetables* and *Animals*, as the *Zoophyta*; the *History* of which I could extreamly desire might be given us; and cant but think that regularly in compiling a *History* of *Animals*, one should commence from them; and amongst these, no doubt, but that there are several degrees of Perfection, till we come to what might be properly called an *Animal*." And in another place, with still more particularity, he tells us, "Tis a true Remark, which we cannot make without Admiration; That from Minerals to Plants; from Plants to Animals; and from Animals to Men; the Transition is so gradual, that there appears a very great Similitude, as well between the meanest Plant, and some Minerals; as between the lowest Rank of Men, and the highest kind of Animals. The Animal of which I have given the Anatomy, coming nearest to Mankind; seems the Nexus of the Animal and Rational."

As if it were not enough to thus skirt along the edge of the doctrine of derivation, our author appears to have actually had a prophetic eye upon the great leader in the scientific renaissance of the nineteenth century, when he exclaims that "it would be the Perfection of Natural History, could it be attained, to enumerate and remark all the different *Species*, and their *Gradual Perfections* from one to another." And with the same irresistible impulse which Darwin possessed, to philosophize as well as observe, he further on explains with reference to his own comparative survey of his pygmy with a monkey, an ape, and a man, that, "by viewing the same Parts of all these together, we may the better observe *Nature's Gradation* in the Formation of *Animal* Bodies, and the Transitions made from one to another."

It is interesting to observe, also, that Dr. Tyson not only anticipated, in a measure, the methods and conclusions of the Darwinian period, but even, in some cases, made use of the very terms and