

tion of weights and measures. Whatever difference of opinion there may be as to the comparative merits of decimal and duodecimal division, there can at all events be none as to the importance of assimilating the systems of measurement in different countries. Science suffers by the want of uniformity, because valuable observations made in one country are in a great measure lost to another, from the labour required to convert a series of quantities into new denominations. International commerce is also impeded by the same cause, which is productive of constant inconvenience and frequent mistake. It is much to be regretted that two standards of measure so nearly alike as the English yard and the French mètre should not be made absolutely identical. The metric system has already been adopted by other nations besides France, and is the only one which has any chance of becoming universal. We in England, therefore, have no alternative but to conform with France, if we desire general uniformity. The change might easily be introduced in scientific literature, and in that case it would probably extend itself by degrees amongst the commercial classes without much legislative pressure. Besides the advantage which would thus be gained in regard to uniformity, I am convinced that the adoption of the decimal division of the French scale would be attended with great convenience both in science and commerce. I can speak from personal experience of the superiority of decimal measurement in all cases where accuracy is required in mechanical construction. In the Elswick Works, as well as in some other large establishments of the same description, the inch is adopted as the unit, and all fractional parts are expressed in decimals. No difficulty has been experienced in habituating the workmen to the use of this method, and it has greatly contributed to precision of workmanship. The inch, however, is too small a unit, and it would be advantageous to substitute the mètre if general concurrence could be obtained. As to our thermometric scale, it was originally founded in error; it is also most inconvenient in division, and ought at once to be abandoned in favour of the Centigrade scale. The recognition of the metric system and of the Centigrade scale by the numerous men of science composing the British Association would be a most important step towards effecting that universal adoption of the French standards in this country which, sooner or later, will inevitably take place; and the association in its collective capacity might take the lead in this good work, by excluding in future all other standards from their published proceedings.

The recent discovery of the source of the Nile by Captains Speke and Grant has solved a problem in geography which has been a subject of speculation from the earliest ages. It is an honour to England that this interesting discovery has been made by two of her sons; and the British Association, which is accustomed to value every addition to knowledge for its own sake, whether or not it be attended with any immediate utility, will at once appreciate the importance of the discovery, and the courage and devotion by which it has been accomplished. The Royal Geographical Society, under the able presidency of Sir Roderick Murchison, was chiefly instrumental in procuring the organization of the expedition which has resulted in this great achieve-

ment, and the success of the Society's labours in connexion with this and other cases of African exploration shows how much good may be effected by associations for the promotion of scientific objects.

The science of organic life has of late years been making great and rapid strides, and it is gratifying to observe that researches both in zoology and botany are characterized in the present day by great accuracy and elaboration. Investigations patiently conducted upon true inductive principles cannot fail eventually to elicit the hidden laws which govern the animated world. Neither is there any lack of bold speculation contemporaneously with this painstaking spirit of enquiry. The remarkable work of Mr. Darwin promulgating the doctrine of natural selection has produced a profound sensation. The novelty of this ingenious theory, the eminence of its author, and his masterly treatment of the subject have, perhaps, combined to excite more enthusiasm in its favor than is consistent with that dispassionate spirit which it is so necessary to preserve in the pursuit of truth. Mr. Darwin's views have not passed unchallenged, and the arguments both for and against have been urged with great vigor by the supporters and opponents of the theory. Where good reasons can be shown on both sides of a question, the truth is generally to be found between the two extremes. In the present instance we may without difficulty suppose it to have been part of the great scheme of creation that natural selection should be permitted to determine variations, amounting even to specific differences, where those differences were matters of degree; but when natural selection is adduced as a cause adequate to explain the production of a new organ not provided for in original creation, the hypothesis must appear, to common apprehensions, to be pushed beyond the limits of reasonable conjecture. The Darwinian theory, when fully enunciated, founds the pedigree of living nature upon the most elementary form of vitalized matter. One step further would carry us back, without greater violence to probability, to inorganic rudiments, and then we should be called upon to recognise in ourselves, and in the exquisite elaborations of the animal and vegetable kingdoms, the ultimate results of mere material forces left free to follow their own unguided tendencies. Surely our minds would in that case be more oppressed with a sense of the miraculous than they now are in attributing the wondrous things around us to the creative hand of a Great Presiding Intelligence.

The evidences bearing upon the antiquity of man have been recently produced in a collected and most logically-treated form, by Sir Charles Lyell. It seems no longer possible to doubt that the human race has existed on the earth in a barbarian state for a period far exceeding the limit of historical record; but notwithstanding this great antiquity, the proofs still remain unaltered that man is the latest as well as the noblest work of God.

I will not run the risk of wearying this assembly by extending my remarks to other branches of science. In conclusion, I will express a hope that when the time again comes round to receive the British Association in this town, its members will find the interval to have been as fruitful as the