quarries of this neighbourhood are seen to peculiar advantage the closeness and hardness of their mass, and the inexhaustible supply for the use of man, made available by the application of new mechan-On this primitive soil the botanist and zoologist will ical powers. be attracted only by a limited range of plants and animals, but they are the very species which the extension of agriculture and increase of population are gradually driving out of many parts of the coun-On those blue hils the red deer, in vast herds, holds undisturbed trv. dominion over the wide heathery forest, until the sportsman invades In return for the help which science has afforded him, the moor. the sportsman can supply the naturalist with many facts which he alone has opportunity of observing, and which may assist the solution of some interesting problems suggested by the life of the deer. Man, also, the highest object of our study, is found in vigorous, healthy development, presenting a happy mixture of the Celt, Goth, Saxon, and Dane, acquiring his strength on the hills and the sea. The Aberdeen whaler braves the icy regions of the Polar Sea, to seek and to battle with the great monster of the deep. He has materially assisted in opening these icebound regions to the researches of science; he fearlessly aided in the search after Sir John Franklin and his gallant companions, whom their country sent forth on this The city of Aberdeen itself is rich in interest for the mission. philosopher. Its two lately united Universities make it a seat of learning and science. The collection of antiquities, formed for the present occasion, enables him to dive into olden times, and, by contact with the remains of the handiwork of the ancient inhabitants of Scotland, to enter into the spirit of that peculiar and interesting people, which has always attracted the attention and touched the hearts of men accessible to the influence of heroic poetry. Gentlemen, this is the 29th anniversary of the foundation of this Associa-tion; and well may we look back with satisfaction to its operation and achievements throughout the time of its existence. On the 27th of September, 1831, the meeting of the Yorkshire Philosophical Society took place at York, in the theatre of the Yorkshire Museum, under the Presidency of the late Earl Fitzwilliam, then Viscount Milton; the Rev. W. Vernon Harcourt eloquently set forth the plan for the formation of a British Association for the promotion of science. Mr. Harcourt summed up the disiderata in graphic words, which have almost identically been retained as the exposition of the objects of the society, printed at the head of the annually-appearing volume of its transactions :- 'To give a stronger impulse and more systematic direction to scientific inquiry-to promote the intercourse of those who cultivate science in different parts of the empire with one another, and with foreign philosophers-and to obtain a more general attention to the objects of science, and a removal of any disadvantages of a public kind which impede its progress.

## (2) THE NATURE OF SCIENCE, AS DEFINED BY THE PRINCE.

To define the nature of science, to give an exact and complete definition of what that science, to whose service the Association is devoted, is and means, has, as it naturally must, at all times occu-pied the metaphysician. He has answered the question in various ways, more or less satisfactorily to himself or others. To me, science in its most general and comprehensive acceptation, means the knowledge of what I know, the consciousness of human knowledge. Hence to know is the object of all science ; and all special knowledge if brought to our consciousness in its separate distinctiveness from, and yet in its recognized relation to, the totality of our knowledge, is scientific knowledge. We require, then, for science—that is to say, for the acquisition of scientific knowledge—those two activities of our mind which are necessary for the acquisition of any knowledge -analysis and synthesis; the first, to dissect and reduce into its component parts the object to be investigated, and to render an accurate account to ourselves of the nature and qualities of those parts by observation; the second, to recompose the observed and understood parts into a unity in our consciousness, exactly answer-ing to the object of our investigation. The labours of the man of science are therefore at once the most humble and the loftiest which man can undertake. He only does what every little child does from its first awakening into life, and must do every moment of its existence; and yet he aims at the gradual approximation to Divine truth itself. If, then, there exists no difference between the work of the man of science and that of the merest child, what constitutes the distinction? Merely the conscious self-determination. The child observes what accident brings before it, and unconsciously forms its notion of it; the so-called practical man observes what his special work forces upon him, and he forms his notions upon it with reference to this particular work. The man of science observes what he intends to observe, and knows why he intends it. The value which the peculiar object has in his eyes is not determined by accident. nor by an external cause, such as the mere connexion with work to be performed, but by the place which he knows this object to hold in the general universe of knowledge by the relation which it bears to other parts of that general knowledge. To arrange and classify

that universe of knowledge becomes, therefore, the first, and perhaps the most important object and duty of science. It is only when brought into a system, by separating the incongruous, and combining those elements in which we have been enabled to discover the internal connexion which the Almighty has implanted in them, that we can hope to grapple with the boundlessness of His creation, and with the laws which govern both mind and matter. The operation of science, then, has been systematically to divide human knowledge, and raise as it were the separate groups of subjects for scientific consideration into different and distinct sciences.

## (3) PROGRESSIVE TENDENCY TO CREATE NEW SCIENCES.

The tendency to create new sciences is peculiarly apparent in our present age, and is perhaps inseparable from so rapid a progress as we have seen in our days, for the acquaintance with and mastering of distinct branches of knowledge enable the eye, from the newly gained points of sight, to see the new ramifications into which they divide themselves in strict consecutiveness and with logical necessity. But in thus gaining new centres of light from which to direct our researches, and new and powerful means of adding to its everincreasing treasures, science approaches no nearer to the limits of its range, although travelling further and further from its original point of departure. For God's world is infinite; and the boundlessness of the universe, whose confines appear ever to retreat before our finite minds, strikes us no less with awe when, prying into the starry crowd of heaven, we find new worlds revealed to us by every increase in the power of the telescope, than when the micriscope discloses to us in a drop of water, or an atom of dust, new worlds of life and animation, or the remains of such as have passed away. While the tendency to push systematic investigation in every direction enables the individual mind of man to bring all the power of which he is capable to bear on the specialities of his study, and enables a greater number of labourers to take part in the universal work, it may be feared that that consciousness of its unity which must pervade the whole of science if it is not to lose its last and highest point of sight may suffer. It has occasionally been given to rare intellects and the highest genius to follow the various sciences in their divergent roads, and yet to preserve that point of sight from which alone their totality can be contemplated and directed. Yet how rare is the appearance of such gifted intellects ! and if they be found at intervals, they remain still single individuals, with all the imperfections of human nature. The only mode of supplying with any certainty this want is to be sought in the combination of men of science representing all the specialities, and working together for the common object of preserving that unity and presiding over that general direction. This has been to some extent done in many countries by the establishment of academies, embracing the whole range of the sciences, whether physical or metaphysical, historical or political, and in this country by this Association, which embraces in its sphere of action, if not the whole range of the sciences, yet a very large and important section of them, those known as the inductive sciences.

## (4) LABOURS OF THE BRITISH ASSOCIATION.

It is with facts only that the Association deals. We proceed here by the inductive process, taking nothing on trust, nothing for granted, but reasoning upwards from the meanest fact established, and making every step sure before going one beyond it, like the engineer in his approaches to a fortress. We thus gain, ultimately, a road-way, a ladder by which even a child may, almost without knowing it, ascend to the summit of truth and obtain that immensely wide and extensive view which is spread below the feet of the astonished beholder. This road has been shown us by the great Bacon; and who can contemplate the prospects which it opens without almost falling into a trance similar to that in which he allowed his imagination to wander over future ages of discovery ? From among the political sciences it has been attempted in modern times to detach one which admits of being severed from individual political opinions, and of being reduced to abstract laws derived from well-authenticated facts. I mean political economy, based on general statistics. If, then, the main object of science—and I beg to be understood, hence-forth, as speaking only of that section which the Association has under its special care-viz., inductive science-if, I say, the object of science is the discovery of the laws which govern natural phenomena, the primary condition for its success is accurate observation and collection of facts in such comprehensiveness and completeness, as to furnish the philosopher with the necessary material from which to draw safe conclusions. Science is not of yesterday. We stand on the shoulders of past ages, and the amount of observations made, and facts ascertained, has been transmitted to us and carefully preserved in the various storehouses of science; other crops have been reaped, but still lie scattered on the field; many a rich harvest is ripe for cutting, but waits for the reaper. Economy of labour is the essence of good husbandry, and no less so in the field of science. Our Association has felt the importance of this truth, and may well