There is no internal evidence of any morbid origin, how­ever, for the poem is full of a healthy and virile energy. As a boy he was delicate and precocious, with a facile gift of verse, which already won him a certain notoriety, of not the best effect haply, at Durham school, whither he had been sent on leaving a preparatory school at Maidstone. During a holiday visit to Raby castle his boyish gifts attracted the interest of the duchess of Cleveland, who made him an allowance of £40 a year, which was con­tinued until her death, and which possibly served further to weaken his self-reliance. At Cambridge, where he was entered at Pembroke Hall in 1739, he led a rather dissi­pated life, getting heavily into debt, and, while he easily excelled in certain congenial branches of study, he paid little attention to the usual college routine. In spite of his irregularities, he was made a fellow of his college in 1745, and at a later date won the newly instituted Seaton prize for an English poem,—the subject each year being one of “the attributes of the Supreme Being.” Smart gained this prize five times in all. Resorting then to London and marrying there a daughter-in-law of Newbery, the publisher, the poet attempted to make a living by literary hack-work and journalism, but sank gradually into difficulties through his improvident and dissipated habits, so that his wife and children were at last obliged to leave him. His misfortunes seem to have culminated in the fit of insanity associated with *A Song to David,* which was published in 1763, and in 1771 Smart died from the effects of poverty and disease.

Amid all his miseries Smart must have been fairly industrious if his journalistic work was at all proportionate to his more sub­stantial literary productions. Of all that he wrote, however, *A Song to David* will alone bear the test of time. Unlike in its simple forceful treatment and impressive directness of expression, as has been said, to anything else in 18th-century poetry, the poem on analysis is found to depend for its unique effect also upon a certain ingenuity of construction, and the novel way in which David’s ideal qualities are enlarged upon. This will be more readily under­stood on reference to the following verse, the first twelve words of which become in turn the key-notes, so to speak, of the twelve succeeding verses :—

“ Great, valiant, pious, good, and clean,

Sublime, contemplative, serene,

Strong, constant, pleasant, wise!

Bright effluence of exceeding grace ;

Best man !—the swiftness, and the race,

The peril, and the prize.”

The last line is characteristic of another peculiarity in *A Song to David,* the effective use of alliteration to complete the initial energy of the stanza in many instances. But in the poem throughout is revealed a poetic quality which eludes critical analysis and gives its writer an exceptional interest hardly maintained by his other works.

*A Song to David* is found in somewhat shortened form in Ward's *English Poets,* vol. iii., and Smart’s other poems are given in Anderson’s *British Poets (1794),* vol. xi., which contains also a full account of his life.

SMEATON, John (1724-1792), English civil engineer, the son of an attorney, was born at Austhorpe Lodge, near Leeds, on 8th June 1724. He received a good education at the grammar-school of Leeds, displaying special proficiency in geometry and arithmetic. At a very early age he evinced a great liking for the use of mechanical tools, and in his fourteenth or fifteenth year contrived to make a turning-lathe. On leaving school in his sixteenth year he was employed in his father’s office, but, after attending for some months in 1742 the courts at Westminster Hall, he earnestly requested to be allowed to follow some mechani­cal profession. He became apprentice to a philosophical instrument maker, and in 1750 set up in business on his own account. Besides improving various mathematical instruments used in navigation and astronomy, he carried on several experiments in regard to other mechanical appliances, amongst the most important being a series on which he founded a paper—for which he received the Copley medal of the Royal Society in 1759—entitled *An Experimental Inquiry concerning the Native Powers of*

*Water and Wind to turn Mills and other Machines depend­ing on a Circular Motion.* In 1754 he made a tour of the Low Countries to study the great canal works of foreign engineers. Already by his papers read before the Royal Society and his intercourse with scientific men his abilities as an engineer had become well known, and in 1756 application was made to him to reconstruct the Eddystone lighthouse, which had been burnt down in December of the previous year (see Lighthouse, vol. xiv. p. 616). Smeaton now began to be much consulted in regard to all kinds of important engineering projects, including river navigation, the drainage of fens, the designing of harbours, and the repair and construction of bridges, owing to the thorough engineering skill he displayed in every operation he under­took. In judging of his achievements it ought to be remembered that he was the precursor of the great modern engineers. James Watt said of him, “His example and precepts have made us all engineers.” He combined in a remarkable degree theoretical with practical skill, much of his success being due to the fact that, as Stevenson states, “he was an incessant experimenter.” A considerable portion of his time was also devoted to astronomical studies and observations, on which he read various papers before the Royal Society. In order to prepare an account of the various works on which he had been engaged as an engineer, Smeaton resolved to retire from his profession, but he only lived to complete in 1791 his *Narrative of the Building of Eddystone Lighthouse.* He died at Austhorpe, 28th October 1792, and was buried in the old parish church of Whitkirk.

See *A Short Narrative of the Genius, Life, and Works of the late Mr John Smeaton,* 1793 ; and Smiles, *Lives of the Engineers.*

SMELL is a sensation excited by the contact with the olfactory region of certain substances, usually in a gaseous condition and necessarily in a state of fine subdivision. The sense is widely distributed throughout the animal kingdom. The lower animals, especially those breathing in water, become cognizant of the presence of odoriferous matter near them without touch, vision, or hearing, and we suppose that they do so by some sense of taste or smell, or a combination of both. In such cases smell has been appropriately termed “ taste at a distance,” by which is meant that particles of matter may be diffused through the water so as to come into contact with the terminal organ and give rise to a sensation such as would have been excited had the matter from which the particles emanated come directly into contact with the nerve-end­ings. It is therefore of no great importance whether such sensations in humble aquatic organisms are termed taste or smell. In the higher air-breathing animals, however, the senses are differentiated : that of taste is found at the entrance of the alimentary canal, whilst that of smell guards the opening of the respiratory tract. This view assists in the interpretation of various structures met with in the lower forms which have been fairly regarded by naturalists as olfactory organs.

*Comparative View of Olfactory Organs.—*In various *Medusæ* pit-like depressions, lined with ciliated epithelium, on the dorsal side of the excavation in which the “marginal” bodies are found, have been called olfactory regions. In many *Arthropoda* the sense of smell is located in delicate tubular structures, or conical projec­tions, found on the antennæ and connected with nerves. Similar organs are met with in *Crustacea.* In *Cyclops (Copepοda), Isopoda,* and *Thoracostraca* olfactory hairs are present as delicate appen­dages of the anterior antennæ, chiefly in the male sex. In *Schizopoda* the anterior antennæ have a comb-like prominence bearing a great number of olfactory hairs. *Insecta* have olfactory organs largely developed, usually in the form of hairs, cones, or knobs on the antennæ, and connected with gangliated nerve-end­ings. Olfactory organs are also met with in *Mollusca* : in *Larmelli­branchiata* they appeal· as hairs on the margin of the mantle ; in aquatic *Gasteropoda* as tufts of hairs scattered over the sur­face of the body and specially aggregated in those parts where