pasted on the back of the horn only, like one used five-and-forty years ago by a friend, when a boy, at Bristol.

Such was the rudeness of the "dumb teacher" formerly employed at the dame-school, and elsewhere. It was, in all probability, superseded by Dr. Bell's sand-tray, upon which the children traced their own letters. Next came the "Battledore" and "Reading-made-Easy;" though the Spelling-book is considerably older than either. The Battledore, by the way, reminds us of a strategy of tuition mentioned by Locke: "By pasting the vowels and consonants on the sides of four dice, he has made this a play for his children, whereby his eldest son in coats has played himself into spelling."

CVII.

PROGRESS OF EDUCATION IN THE REIGNS OF GEORGE IV. AND WILLIAM IV.

There is little to interest the reader in the early personal histories of these sovereigns. George the Fourth, the eldest son of George the Third and Queen Charlotte, was born at Buckingham House, in 1762. At the age of three years he received an address from the Society of Ancient Britons, and was made a Knight of the Garter. In a few months after, he was appointed by a King's letter, addressed to the Lord Mayor, Captain-General of the Honourable Artillery Company of the City of London. He learned his nursery tasks at Kew-house, or the old palace at Kew, where the royal family lived, as Miss Burney says, "running about from one end of the house to the other, without precaution or care." The prince's first governor was the Earl of Holdernesse; Dr. Markham, Bishop of Chester, (afterwards Archbishop of York,) was the prince's preceptor; and Mr. Cyril Jackson, sub-preceptor. These gentlemen, however, suddenly resigned their offices, it is believed from their having found some political works, which they considered objectionable, put into the hands of their pupil by direction of the King. His next preceptor was Dr. Hurd, Bishop of Lichfield and Coventry, afterwards of Worcester; with the Rev. William Arnold as sub-preceptor; both these tutors being Cambridge men. The prince was kept by his father in a state of unmitigated pupilage till he was nearly eighteen, soon after which he appeared in public, and fell into dissolute habits, which deeply embittered his after life.

George the Fourth affected patronage of painting and architecture; the results of the latter are best seen in the highly embellished western quarter of London. His encouragement of letters and learned men was narrow and partisan; he was the first patron of the Literary Fund, to which he contributed upwards of 5000*l.*; in the Society's armorial bearings is "the Prince of Wales's plume." By his bounty, the Latin manuscript of Milton, discovered in the State Paper Office, in 1823, was edited, and a translation published. The King also chartered, in 1826, the Royal Society of Literature, and contributed from the Privy Purse 1100 guineas a-year to its funds; though it should be added, that he was committed to this large annual subscription by a misconception of Dr. Burgess, Bishop of Salisbury, the King intending a donation of 1000 guineas, and an annual subscription of 100 guineas; though his majesty cheerfully acquiesced, and amused himself with the incident. He also granted the Society the Crown land upon which their house is built in St. Martin's-place; and as if to show that he did not restrict his patronage to the higher aim of letters, there is prominently inscribed upon the exterior façade of the Parochial Schools of St. Martin's, "built upon ground the gift of His Majesty King George the Fourth."

In this reign, in 1826, was founded the Society for "the Diffusion of Useful Knowledge," under the chairmanship of Lord Brougham. This was followed by the founding, in London, of University College and School, in 1828, for affording "literary and scientific education at a moderate expense," divinity not being taught; and in the same year was founded King's College and School, for education in the principles of the Established Church.

William the Fourth, next brother to George the Fourth, was born at St. James's Palace, in 1764, and was educated at Kew. When a child at play, his favourite amusement was floating a toy-ship, which one day led him to say, with prophetic boast, "If ever I shall become a king, I will have a house full of ships, and no other king shall dare to take them from me!" The King, his father, encouraged him to enter the naval service; and at the age of fourteen, he swung his first hammock on board the *Prince George*, 98 guns, under the command of Admiral Digby, where he was furnished as scantily as any youngster of the mess. His entire service at sea extended nearly to eleven years; its most interesting incident was his intimacy with the galant Nelson, from whom, in the prince's own words, his "mind took its first decided naval turn." This predilection lasted throughout his long life: he was some time Lord High Admiral, and after his accession to the throne was familiarly styled "the Sailor King."

In his reign, in 1833, greatly through the influence of Lord Brougham and his party, upon the report of a Parliamentary Committee, the first annual grant or educational purposes was made by the Government; and in 1836 was formed the Home and Colonial Infant School Society, upon the principle that education must be based on the knowledge of the Holy Scriptures, and as set forth and embodied in the doctrinal articles of the Church of England. In the following year was formed a "Central Society of Education," principally for the collection and publication of facts, and bringing prominently forward the distinction between general and special religious instruction.

(To be continued.)

Suggestive Hints towards Improved Secular Instruction.

BY THE REV. RICHARD DAWES, A. M.

XI.

NATURAL PHILOSOPHY.

(Continued from our last.)

The subject of heat is one of great interest, and one on which the teacher may bring to bear a variety of experiments not attended with much expense, and having this additional recommendation, that they have an intimate relation with many of the comforts and conveniences of life.

Heat is present everywhere and in every kind of matter: we cannot measure its quantity; but we can measure the quantity in one body relatively to that of another.

The general effect of heat upon matter is to expand it, that is, an increase of heat in the same body produces an increase of volume, in some proportion to the increased temperature.

This increase of volume for a given increase of temperature varies in different kinds of matter; air and gases expand most, fluids next, and then solids.

Instances of each have been mentioned—as a full kettle swelling and flowing over before it boils—a round piece of iron fitting exactly into a ring when cold, when heated is too large.

Then, again, heated bodies impart heat to every thing around them until all have acquired the same temperature; as the heater for a box-iron for ironing linen, when put into the fire becomes red hot like the cinder; when taken out it is put into the box, communicates heat to it, and so to the linen; and, when used for a certain time, becomes of the same temperature with the things around it.

We call things which we touch, hot or cold, according as they are hotter or colder than the human body, but in this the sense of touch deceives us; when we touch a body hotter than the hand, we receive heat from it—when we touch one colder than the hand, it receives heat from us; but experience tells us that all the things in a room, when measured by a thermometer, have an equal temperature, yet they do not feel equally so to the hand.

The different degrees in which bodies conduct heat have been ascertained by experiment; air and gases, when confined, are very bad conductors; metals varying in degree among each other are good ones—generally the more dense the body, the better conductor it is.

Porous bodies are bad conductors, as are any bodies which contain air confined in cells. such as the feathers of birds—the fur of animals—the bark of trees. All these how beautiful a provision for the preservation of animal and vegetable life!

Then, again, straw, reeds, etc., are bad ones; so that a thick covering of thatch is a much better covering for a cottage, so far as warmth in winter and coolness in summer are concerned, than either tile or slate.

Tile, being rather a thick and a porous substance compared with slate, is better than the latter; and every one who is in the habit of visiting the cottages of the poor will have observed that the bedrooms of those covered with slate are in the summer extremely hot, and in winter equally cold.

Slate, again, would be better than iron.

The teacher would do well to observe the variety of fur and hair in animals, varying with the climates they inhabit; in warm climates the hairy coat of animals being short and thin, in the