Editors' Table.

MRS. SOMERVILLE.

By the death of Mary Fairfax Somerville, the world of science has lost one of its brightest ornaments. Her life was a noble example of great talents and industry devoted to lofty ends; and this example remains as an encouragement to others, and especially to students of her own sex, who have long been able to point to this distinguished authoress as an evidence that the cultivation of the exact sciences is not, as some would pretend, beyond the province of woman, and is compatible with every womanly excellence.

Mrs. Somerville was the daughter of an officer of the British navy, who had married a Scottish lady. She was born on December 26th, 1780, near Edinburgh. Her education comprised a knowledge of the classics, and the accomplishments of painting and music. She learned Euclid surreptitiously while quite a girl, and at the same time got up a knowledge of Latin in order to read Newton's Principia. She prosecuted her studies with the encouragement and aid of her first husband, who took pleasure in the development of the extraordinary powers which she displayed, and which soon enabled her to surpass her preceptor.

Becoming a widow, she removed from Edinburgh to London, where she married Dr. Somerville, and under her new name became celebrated. Lord Brougham had so much confidence in her talents that he entrusted to her the important office of preparing for the "Library of Useful Knowledge" an abridgement of Laplace's great work, on "Celestial Mechanism." Her book proved too voluminous for the intended purpose, and was published separately in 1831, under the title of "Mechanism of the Heavens." Its excellence added greatly to her reputation. She was elected a member of the Royal Astronomical Society of England in 1835, and received from the government a pension of £300 a year.

The work by which Mrs. Somerville is best known is her "Connection of the Physical Sciences," which was published in 1834, and had reached its eighth edition in 1855. The extent of knowledge and the wide grasp of thought displayed in this work, set off by a lucid and attractive style, have excited the admiration of scholars throughout the world. In the opinion of competent judges, among whom may be mentioned the high authority of Sir Henry Holland, this work of Mrs. Somerville, though not so extensive in its plan as the "Cosmos" of Humboldt, which it preceded and foreshadowed, was not, within the scope to which it extended, inferior to the great work of the illustrious German.

In 1848, Mrs. Somerville published a work on "Physical Geography," in two volumes, presenting an interesting scientific history of the globe, and forming, with her previous work, an excellent compendium of the physical sciences. She also prepared a chart, exhibiting all the physical phenomena on a plan of great originality, which has called forth high commendation from scientific critics.

Mrs. Somerville's later years were spent with her family in Florence, where she continued her researches, and was recently engaged in preparing a work on the results of microscopic studies, in which she was greatly interested. In 1869 appeared her last work, "On Molecular and Microscopic Science," which, to quote a writer in the *Edinburgh Review*, "contains a complete conspectus of some of the most recent and most abstruse researches of modern science, and describes admirably not only the discoveries of our day in the field of physics and chemistry, but more especially the revelations of the microscrope in the vegetable and animal world." The fact that Mrs. Somerville was close on her 90th year when she published this work may give one some idea of the undying vigor and clearness of her mind, as well as of her intense love of science. A wide circle of friends and correspondents attested the esteem in which she was held for her goodness of heart, as well as for her intellectual powers. She has left a reputation which will long be prized as a proof that the highest talent and the most profound research may accompany, in the feminine character, every social charm.

THE CONNECTION OF THE PHYSICAL SCIENCES.

We have before us a book which, in our younger days, impressed us with a sense of admiration and wonder so vivid that we shall try to give some account of it. It is Mrs. Somerville's "Connection of the Physical Sciences." We have spoken in this month's Table of the authoress, and of the sensation produced by her work when it first appeared; and we may add that, under her revision, it has retained a foremost place among scientific treatises. The scope is enormous. As the title indicates, the whole field of physical science is opened, the main conclusions of each branch clearly stated, and the connection between them indicated.

The mutual help afforded by the sciences was never more clearly displayed; while yet the hierarchy of her subject, so to speak, is preserved. Thus Mathematics come first, then Mechanics, then Astronomy, then Physics, and so on up to Sociology, in a scale arranged for us by the increasing complexity of the topics, and by the necessity in each of using the results of its predecessor. It has been given to few women to comprehend so clearly the scheme of the universe, and in fewer still is the power of imparting in such clear and forcible diction, the results of their long study. We have selected a few lines from the book, on themes which have never, before or since, been better illustrated than by Mrs. Somerville. The first describes the sublime simplicity of the central law of nature:—

"Whatever the laws may be that obtain in the more distant regions of creation, we are assured that one alone regulates the motions not only of our own system, but also the binary systems of the fixed stars: its action, even at the distance of the sun, may therefore be regarded as instantaneous; yet so remote are the fixed stars that it may be doubted whether the sun has any sensible influence on them.

"The curves in which the celestial bodies move by the force of gravitation are only lines of the second order; the attraction of spheroids, according to any other law of force than that of gravitation, would be much more complicated; and as it is easy to prove that matter might have been moved according to an infinite variety of laws, it may be concluded that gravitation must have been selected by Divine Wisdom out of an infinity of others as being the most simple, and that which gives the greatest stability to the celestial motions.

"It is a singular result of the simplicity of the

laws of nature, which admit only of the observation and comparison of ratios, that the gravitation and theory of the motions of the celestial bodies are independent of their absolute magnitudes and distances; consequently, if all the bodies of the solar system, their mutual distances, and their velocities were to diminish proportionally, they would describe curves in all respects similar to those in which they now move, and the system might be successively reduced to the smallest sensible dimensions, and still exhibit the same appearances."

We have not space for the interesting applications of astronomy to chronology or to hieroglyphics given by Mrs. Somerville. A single sentence must suffice, the subject being a papyrus sent from Egypt by Mr. Salt: "The manuscript was found in a mummy-case; it proved to be a horoscope of the age of Ptolemy, and its antiquity was determined from the configuration of the heavens at the time of its construction." We close the work with feelings of the strongest admiration towards Mrs. Somerville as a mistress of scientific topics, which her sex has sometimes been pronounced unable to comprehend. She is the enduring example in science, as George Eliot is in literature, that the heights of attainment may be scaled by the footsteps of women.

A NOTABLE LIFE.

AT the age of eighty-three, the distinguished English physician Sir Henry Holland has given to the world the record of a life remarkable in many respects, but chiefly, as it appears to us, for the evidence it affords of the reward, in health and happiness, which a well-balanced mind, a kindly temper, great intellectual activity, and strict self-control, may insure.* Sir Henry was born in 1788, at Knutsford, in Cheshire. He came of a stock noted for mental capacity, and numbering among its members Josiah Wedgwood, of Etruria, the inventor of "Wedgwood Ware"—Charles Darwin, the distinguished naturalist, and Mrs. Gaskell, the well-known authoress. By marriage Sir Henry was nearly connected with Lord Macaulay. Residing in London, his professional eminence, which was attained in early life, and which brought him into the best society of England, made him familiar with almost all the distinguished personages who have lived in that country during the last sixty years; while the habit, which he has constantly kept up, of spending two months of every year in travel, has made him acquainted with the most notable characters in Europe and America. There is hardly an individual who has been highly distinguished during the present century, or rather during the earlier part of it—for with his customary discretion, the author avoids much mention of living persons—of whom he has not something interesting to tell. Among these political and literary celebrities of the past day whom he mentions, we find the names of Canning, Mackintosh, Sydney Smith, Romilly, Byron, Sir Walter Scott, Moore, Campbell, King Leopold, Lord Palmerston, Sir Joseph Banks, Sir Humphry Davy, Sir Philip Francis (whom he evidently believes to have been "Junius") Humboldt, Bunsen, and many others of equal note. In our own country, which he has often visited, he knew intimately Edward Everett, Webster, Clay, Calhoun, President Lincoln, and others of like eminence, to whom he refers with friendly interest. In a certain general and liberal way of regarding other countries and their people, Sir Henry Holland reminds one of Washington Irving, though differing very widely from him in intellectual traits. The great English physician is a cultivator of the natural sciences, and a student of the classics, with, at the same time, a strong taste for metaphysics. In lively narrative, humor, and the graces of style, which have made Irving famous, he has little inclination or capacity. But in a good-natured readiness to discover and appreciate excellence, wherever it may be found, their writings show a near likeness between them. The tone in which Dr. Holland habitually speaks of this country is especially agreeable, when contrasted with the sour and supercilious comments of visitors of another stamp. Thus, after mentioning some amusing demands made upon his professional skill on behalf of Turkish pashas and princesses, he continues: "My several visits to the United States have brought me patients of a very different stamp, to whom it was a pleasant office to render aid, as some return for the many and warm kindnesses I have received in that country. Such aid, however, is really little needed, when both the principles and practice of medicine are derived from schools of distinction and a medical literature in no-wise inferior to our own."

As a specimen of the author's style, and of the character of his reminiscences, we give a passage relating to Mrs. Somerville. It belongs to the portion of his work in which he refers to the many distinguished women whom he had known. The list includes Miss Edgeworth, Joanna Baillie, the Princess Lieven, Lady Blessington, Mrs. Marcet, Mrs. Siddons, Mrs. Barbauld, and many others of similar note:—

"Though Mrs. Somerville is yet living, and therefore not within the scope I have consigned to my narrative, I cannot forbear saying a few words about this remarkable woman; sanctioned by a friendship of fifty years, and by the fact that her long absence from England has left to a few only the recollection of those other qualities and accomplishments which would have signalized her, apart even from her mathematical and other scientific attainments. A stranger might have sat by Mrs. Somerville at table, and admired her gentle and pleasing conversation, without a suspicion that she had rendered into English the 'Mécanique Céleste' of Laplace, and written the best book we possess on the 'Connection of the Physical Sciences.' I venture to claim for myself a slight merit in relation to the latter work. When she explained to me the first outline of her plan, limited to the connection of Astronomy with Optics and the phenomena of light, I suggested—holding in view the more general connection of all the physical sciences—that she should extend her scheme to the form in which the work now appears, and the suggestion, seconded by her own judgment, was adopted. The value of the volume is well attested by the numerous editions it has gone through, each one corrected up to the latest dates of scientific discovery." "Less ambitious in title and form than the 'Cosmos' of Humboldt, the work of Mrs. Somerville embraces really the whole scope of his design, and, as I think, with a more lucid definition and arrangement of the subjects it includes. The latest work is that on Molecular Science, published when she had reached her eighty-eighth year."

Besides keeping up a large practice, and spending two months of every year in travel, Dr. Holland has found time for pursuing classical and scientific studies more largely than many educated men of leisure are able to do. He has written much, including a volume describing his travels in Greece and Turkey, and several medical works, besides many review articles, chiefly on subjects connected with natural science. In all that he has done, it is evident that his object has been not so much personal distinction as usefulness.

"Proud to be useful, scorning to be more,"

is a motto which he might fairly claim for his own. He has found his reward in a long life of healthful and cheerful occupation and professional success, accompanied, as Shakspeare tells us that length of years should be, by "honor, love, obedience, troops

* Recollections of Past Life. By Sir Henry Holland, Bart., M.D., F.R.S., etc. New York: D. Appleton & Co., 1872.

of friends." His present volume of reminiscences is a work well deserving to be read, not only for the interesting nature of its contents, but for the valuable lessons which it embodies.

WHAT DREAMS SIGNIFY.

THE absurd interpretations of dreams, which were once so much in vogue, even among people who should have known better, are now recognized by all as fit food for jest. We are all diverted when our comic friend *Punch* assures us that "to dream about a bear signifies mischief which is a Bruin." But it is no less true that dreams have a real significance, which is often important, and sometimes startling.

Medical men have long recognized this fact, though perhaps it has hardly received from them sufficient attention. A professional writer, in a recent work, gives us some of the conclusions which may be drawn from this source. Lively dreams, as might be supposed, are in general a sign of nervous action. Soft or pleasant dreams are a sign of slight action of the brain, often in nervous fever announcing the approach of a favorable crisis. Frightful dreams are an evidence of determination of blood to the head. Dreams about blood and red objects are signs of inflammatory conditions. Dreams about rain and water are often, it is said, signs of diseased mucous membranes and dropsy. Dreams in which the patient sees any part of the body suffering indicate disease of that part. Furthermore, dreams about "distorted forms," we are told, frequently indicate internal obstructions or disease of the liver.

If a bear may be regarded as a distorted form, *Punch* was wiser than he knew in suggesting that to dream about one portends mischief brewing. Seriously, the study of our dreams, for the purpose of ascertaining what mental or bodily condition they indicate, may give us some useful self-knowledge, which we could not attain in any other way.

NOTES AND NOTICES.

PROGRESS IN SIAM.—The readers of Mrs. Leonowen's interesting account of her residence at the Siamese court are aware of the efforts which some of the rulers of that country are making to improve themselves and the people. It will still surprise most persons to learn that in that far eastern land, which we have been accustomed to consider semi-barbarous, a flourishing school for young women exists, in which they are taught all the ordinary branches of a good education. A newspaper, published in Siam in the English language, gives an account of a recent examination of the "Petchaburee Industrial School." According to this authority, "the young ladies were examined in reading, arithmetic, and geography, and in original composition. They took their turns at the blackboard, and read their original pieces, without evincing any particular embarrassment, although the school-room was crowded, and at the head of the audience were seated the mother and wife of the Governor, and the Lieutenant-Governor and his wife. This was the more remarkable, too, because but a few months ago these young women were not able to read a word even of their own language." It is a satisfaction to see that the Siamese rulers have already learned the truth, of which many persons in what are deemed more enlightened countries are hardly yet conscious: that there can be no real and permanent improvement among any people unless it begins with, or at least includes, the education of women.

A JUST VERDICT.—The Western papers record with satisfaction that the landlord of a hotel in one of their cities has had to pay a considerable sum in a suit for damages brought by a respectable young lady traveller, who was turned away from the hotel because she came unaccompanied by a gentleman.

This act, so little in accordance with Western hospitality, and with the ideas and manners of our country—where women of all classes constantly travel alone, safe from annoyance in the courtesy and consideration of all they meet—has been visited with very proper condemnation, not only by the court, but by the organs of public opinion. No doubt an innkeeper would have the right to refuse admission to a person of notoriously bad character, that is, to a person whose presence in the hotel would be likely to be injurious to the other guests. But it will be an evil day for our country when the fact that a lady is travelling without the protection of a gentleman, a condition which ought to insure her the more special attention and kindness, shall be made the reason for refusing her the common shelter of the traveller's home.

AUTOGRAPHS.—The verdict of posterity, or at least of that part of posterity which collects autographs on the merits or popularity of noted persons, is curiously shown by the different values attached to their handwriting. At a late sale of autographs in London, a letter of the poet Cowper brought twenty-three dollars, and one of Gibbon something more, while a letter of the Duke of Wellington was sold for less than a dollar, and one of the great orator and statesman, George Canning, went for a shilling. A letter of Mrs. Siddons brought five guineas, and one of George the Fourth only one guinea. It was remarked, as a general result of this sale, that the letters of military heroes sold for less than those of statesmen; the letters of statesmen went cheaper than those of literary celebrities; while the autographs of famous players and singers produced the best prices of all. Perhaps, however, the chief lesson to be derived from this sale is the knowledge it gives of the tastes and fancies of autograph collectors.

OTTILLE VON GOETHE.—Germany has lately lost a well known authoress, bearing a name distinguished as well by her own abilities as by her near connection with the greatest of German authors. Madame Ottille von Goethe, the widow of Goethe's only son, died recently at Weimar in Saxony. For many years she did the honors of the mansion of her illustrious father-in-law, who, as is well known, was not only at the head of the world of letters in Germany, but also held a high political station, being for a long time Prime Minister of Saxe-Weimar. In his house his daughter-in-law presided at many a social gathering, marked by the presence of the most eminent authors and politicians of the age. She edited at one time a literary periodical, and Goethe, who was proud of her talents, was accustomed to speak of her as being one of the best critics of the time. She lived to an advanced age, retaining the vigor of her mental faculties and the charm of her conversational powers to the last. She leaves two sons, both unmarried, so that the great name she bears, like the names of Shakspeare, Milton, and many other illustrious authors, is likely to die out.

A LIBERAL CHAMPION.—Mr. Walter Thomson, of London, has given the munificent contribution of £1000 to be devoted, firstly, to the payment of the legal charges attending the prosecution of the claim of women to the highest medical education obtainable in the University of Edinburgh or elsewhere,