Eminent medical men of Asia, Africa, Europe and America, who have advanced medical science; for the use of students and for the Vydians and Hakims of India / by Edward Balfour.

MEDICAL HINTS TO THE PEOPLE OF INDIA.

EMINENT MEDICAL MEN

OF ASIA, AFRICA, EUROPE AND AMERICA,

WHO HAVE ADVANCED MEDICAL SCIENCE;

FOR THE USE OF STUDENTS AND FOR THE VYDIANS AND HAKIMS OF INDIA;

BY

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——Seggendo in piuma
In fama non si vien ; ne sotto coltre ;
Senza la qualchi sua vita consuma
Col tal vestigio in terra di se lascia
Qual fumo in aere, od in acqua la schiuma.

DANTE.

PREFACE.

THIS has been written for the hindu Vydian, for the muhamdan Hăkīm, and for the students of the several Medical Schools of British India, all of whom will wish to see an outline traced of the progress of Medicine from the earliest times to the present day and learn something of the eminent men who have preceded them—Philosophers, Anatomists, Physicians and Surgeons—to whom medical science is indebted. I have here endeavoured to supply this information in the form of brief notices of the lives of the famous men of Asia, those of India, Arabia, Persia and Syria; of Africa, those of the famous school of Alexandria, and Europe's illustrious Philosophers of ancient Greece and Rome, the Moorish Physicians of Spain, and the modern authors of Italy, Germany, Holland, France, Britain and America. To obtain this information, the following works have been consulted:—

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INDEX.

MINENT MEDICAL MEN AND PHILOSOPHERS, PROMOTERS OF MEDICAL SCIENCE.

BB. C. 1200? **Chiron.** The date of the introduction oo Greece of a knowledge of the Medical Art is lost in ble. According to their mythology, the sun-god Apollo ss said to preside over Medicine, which was hence call- Ars Apollonea, and they have handed down the fanciful end that Chiron, one of the Centaur race, was metamor- osed into a horse, and while hunting in the mountains d forests along with the goddess Diana he acquired knowledge of medicinal plants and of astronomy. In e figures of him which have come down to us, he is presented with the face and form of a man, of mild ex- ession, and the body of a horse.

Chiron is supposed to have been a prince of Thessaly d to have lived prior to the acquisition of the Golden eece and the siege of Troy. He was the friend and rela- e, some say grandfather, of Peleus, father of Achilles, d was the wisest and most just of all the Centaurs, the ntaur-oi of the Greeks, who are supposed to have had ir original seat at Kandahar and to have used the horse war, which suggested to the Greeks the figure by which was represented. His grotto on the top of Mount Pelion came a famous school; he instructed the Argonauts in dicine, and all the heroes of that remote age have been med as his pupils, amongst them Bacchus, Hercules, son, Æsculapius, Machaon, Podalirius, Æneas and hilles. He taught them medicine and surgery, hunting, sic and gymnastics. His descendants in Magnesia, the ironidæ, were long distinguished for their knowledge of dicine. He is said to have used music as a remedial asure in sickness. Several books are attributed to him, ongst others precepts in verse for the instruction of hilles, and a treatise on diseases of the horse. He was ebrated for the treatment of eye diseases.

BB. C. 1200? **Æsculapius**, the Asclepios of the Greeks, s born at Epidaurus, a city of the Peloponnesus. In the ecian mythology, he is fabled to have been the son of

Cyrene and Apollo, the god of all the fine arts, of medicine, music, poetry and eloquence, of all of which he was deemed the inventor. Æsculapius is alleged to have been a pupil of Chiron, but to have so much improved on his teacher's knowledge of the Medical Art, that he was deified by the Greeks, yet whether during his life-time or after his death is uncertain: Pausanias says it was before his death. Numerous legends have been put forward regarding the person or persons of this name, for there are said to have been several, and the name has also served to designate a class or family whose members for several centuries practised medicine under the designation of Asclepiadæ. They were the priests of the shrines raised in honor of their ancestor, and the sick were brought to the temples for advice. His two sons Machaon and Podalirius by his wife Epione are said to have accompanied the army of Greece to the siege of Troy B. C. 1184. From circumstances mentioned in Homer's Iliad, it would appear that their practice was almost entirely confined to the treatment of wounds, and that charms and incantations formed a considerable portion of the curative means they employed. The temples of Æsculapius in Greece were erected in salubrious places on hill sides, outside of towns or near mineral wells famed for their medicinal properties. The chief temple at which he was worshipped was at Epidaurus in Argŏlis, in the figure of a serpent, and at this shrine originated the custom of the sick on recovery hanging up as votive tablets, a figure of the injured part. An accurate register was kept there of the more grave diseases and their remedies. Other important temples were at Pergamus, Athens and Smyrna. Medals of Æsculapius usually represent him as an elderly man, crowned with laurel, with a cup in his hand from which a serpent is drinking; or as an old man with a long beard holding in his left hand a staff with a serpent twining round it, and with his right hand holding his beard or pressing the head of a serpent, a serpent amongst the idolatrous Greeks as amongst the hindus of the present day being regarded as a beneficent deity. The several persons who took the name of Æsculapius are said to have invented the use of the probe, the mode of bandaging wounds, the use of purgatives, and the art of extracting teeth. The Greeks had other gods and goddesses of medi-

ne and of health, of whom the chief were Hygieia, elesphorus, Iaso, Panaceia, Alexenor, Aratus and Aegle.
B. C. 1100? **Dhanwantari** is regarded as the founder Hindu Medicine. He takes, in India, the place occupied Æsculapius among the Greeks, and a medical work aring his name is still extant and in use among all the adu physicians of British India. In pictures, he is usuy represented as a venerable man with a book or a cup of rita in his hand, but, unlike his Greek brother, he is ver with an attendant serpent. He is styled Deva-dasa, d is supposed to have been rajah of Kasi or Benares. s great-grandson (Deva-dasa, son of Bhimaratha, son of ttumat, son of Dhanwantari) was ruling there until ven from the throne on the occurrence of religious wars tween buddhist and intruding saiva religionists, on which va-dasa took a city on the banks of the Gumti river, ich he again lost, to be again recovered by his son atardana. So little, however, is known of the times and rying fortunes of the buddhist and saiva sects, while iving in those early days for mastery in India, that the era Dhanwantari can only be conjectured to have been about eleventh century B. C. In the time of Deva-dasa ddhism seems still to have been acting on the aggresee. In the brahmanical mythology of the vaishnava sect hindus, Dhanwantari is fabled to have been produced m the ocean when it was churned by the gods for the rpose of recovering for mankind the comforts and coniences lost during the Deluge; then Vishnu at his ond incarnation assumed the form of a tortoise and took unt Mandara on his back, as a churning rod, around ich the gods twisted, as a thong, the serpent Vasuki iled also Sesha or Ananta), and from their efforts, fourn precious gifts were restored to mankind. One of se was "the health-bestowing Dhanwantari, the celestial sician, who arose from the sea when churned for the erage of immortality." The fable further indicates that science of medicine was revealed by Brahma to Dhanutari who became physician to the gods, and in a second th, as the son of Dirghatamas, he taught the knowledge had of the healing art to his pupil Susruta.
B. C. 1000? **Charaka** and **Susruta** are the oldest dical practitioners known to the hindu people, and their

writings are still the standard books on medicine and surgery in daily use amongst the hindu practitioners. The legends related of them are almost inseparably interwoven with others descriptive of the origin of the Ayur-Veda, which is the most ancient medical work known to the hindus, though neither its author nor the age in which it was written is known, and only fragments of it have come down to the present day, embodied in the commentaries of subsequent writers. The Ayur-Veda, however, retains its fame; so high indeed is this, that legends carry its origin back to pre-brahmanic times, and modern hindus ascribe its authorship to their gods, some to Brahma and some to Siva, and thus unconsciously render divine honors to the first teachers of medicine. It has ever been a favorite practice of the brahmanical hindus, as it was with the Greeks, to represent their great religious teachers as incarnations of particular divinities; but the hindus allege, as regards medical science, that it was the great original deities themselves who studied and taught and practised medicine with the benevolent object of alleviating the miseries of the human race. Amongst the many gods who were worshipped in the far off Vedic ages, who are fabled to have possessed a knowledge of the Medical Art, the legends make mention of Indra, king of heaven; the Aswin Kumara, twin-physicians of the gods, and of Surya, the sun deity, who, like Helios or Apollo among the Greeks, was supposed by the hindus to be the fountain of medical knowledge; associated with these was Daksha, a prajapati, one of the progenitors of mankind. Leaving the far-back Vedic ages and approaching brahmanical times, we find Brahma the creative principle, and Dhanwantari, a deified king of Benares, credited with an acquaintance with medicine and surgery and with having beneficently employed themselves in imparting a knowledge of the healing art and in curing the diseases of mankind.

Some of the shastras, or philosophic writings of the brahmanical hindus, ascribe the authorship of the Ayur-Veda to Siva, and the earlier and generally accepted brahmanical legend relates that in the first pure age of their mythology, the Satya or Krita-Yuga, man was virtuous, prosperous, happy, and free from sickness, and all the knowledge then required by the human race was contained

the four immortal Vedas, the Rig, the Yajur, the Sama
l the Atharva Veda which, as hindus allege, were Brah-
's gifts and contained the original code of divine laws.
t in the succeeding Treta Yuga, a third of the world
ame reprobate, diseases appeared, life was shortened and
mory impaired: in the Dwapara Yuga, or third age,
f mankind fell into depraved habits, while during the
esent age, the Kali Yuga, the corruption of the human
ee was such as to cause a still further curtailment of life
d to leave it embittered by numerous ailments. Brahma,
mpassionating man's weakness and sufferings, furnished
e four supplementary books, one of which, the Ayur-
eda, contained instructions how to live so as to prevent
e occurrence of sickness and, if illness arose, how to cure
and thereby permit the due performance of all the duties
this life and ensure happiness in a future state.

This legend indicates the epoch of the Ayur-Veda, as
termediate between vedic and brahmanical times. Siva
no is mentioned in it, is spoken of by the prophet Amos
, 26) whose prophecies were delivered not later than
. C. 798-784. The precise age cannot, however, be stated,
r no dates have been determined as to the composition of
e four Vedas, and those of their four supplements, the
pa-Veda, have not even been conjectured. The centuries
hich saw the Vedas produced, have been variously esti-
ated from the 16th to the 10th and 9th centuries, B. C.,
d even so late as the 7th century before the present era.

The other legend, as to the later origin of the Ayur-Veda,
related with slight modifications in the writings of
haraka and Susruta. But both of these authors bring its
mposition to post-Vedic times yet mingle vedic and brah-
anic deities. The later tradition is to the effect that
Daksha, after obtaining from Brahma instruction in the
Ayur-Veda, wrote the Chikitsa Darsana or School of Medi-
ine, which he communicated to the Aswin twins who then
ecame physicians to the gods and were the authors of two
edical works, the Chikitsa-Ratna-Tantra and the Bram-
agya. The Aswin were originally Vedic deities, who are
abled to have attained celebrity alike as physicians and
urgeons. They cured the paralysed arm of Indra, who,
ncited by what he saw of their skill, at his own request,
was taught the medical art from the Ayur-Veda, and when

the fifth head of Brahma was hewn off by Bhairava, the Aswin caused it to reunite: they also healed the wounds of the gods after the battle between the Devata and Asura.

As there is in the above a two-fold account of the origin of this ancient book, so the legends as to the mode it reached mankind are likewise two. One of these takes us into far back Vedic times, many centuries prior to the introduction of the prevailing brahmanical worship. It mentions that when mankind in consequence of their wickedness had become ignorant and sickly, the sacred sages, the Munis grieved at the melancholy spectacle, assembled on the Himalaya mountains to devise a remedy. This is the earliest sanitary commission on record. At what period of the world's history it met, is unknown, but the names of its fifty members have no resemblance to those now in use amongst the modern hindus, almost all of whom are called after some one or other of the brahmanical deities or their incarnations. The commission consisted of Abarkshi, Agasta, Angira, Aswanayan, Aswaranya, Atreya, Bamadeva, Barisa, Bharadwaja, Bhargaba, Bhikshuratreya, Bhrigu, Chyabana, Devala, Dhauma, Galavo, Gautama, Gautamayani, Gargya, Hiraniyakshyo, Jamadagni, Kusika, Kasyapa, Kapya, Katayayana, Kapinjala, Kankayana, Kaikasaey, Kaundilya, Lokakshyo, Maitreyao, Marichi, Markandeya, Narada, Obhijit, Osita, Paingi, Parikshi, Pulastya, Sandilya, Sankritya, Sankya, Sakuneya, Saraloma, Sarkarakshyo, Saunaka, Vashisto, Vaijavapi, Vadarayana, and Visvamitra. Of these, Atreya and Bharadwaja took a prominent part and the commission resolved to send both of them to Indra to be instructed from the Ayur-Veda in the principles of Medicine. At the conclusion of his studies Bharadwaja returned to the sages to whom he communicated all he had learned, and Atreya subsequently taught six pupils, Agnibesa, Bhela, Jatukarna, Parasaro, Harita, and Kshyarapani, each of whom wrote a treatise on medicine and the sages selected that of Agnibesa as the most practical. This was subsequently modified by Charaka, under whose name it became known, and his book is undoubtedly the most ancient and continues to be the most celebrated medical work in the possession of the modern hindus. It is in Sanscrit.

If we turn now to the later brahmanical legend describing how the Ayur-Veda reached the human race, we find

rselves brought to the fabled time when the Vedas were
t in the Deluge and the Devata, using Mount Mandara
a rod and the serpent Ananta as a thong, churned the
ean for their recovery. What they did obtain was fourteen
ecious gifts, amongst them Dhanwantari, a physician,
ssessor of the amrita, the water of life. This legend like
ny others in hindu mythology, is far from clear; but it
mingles vedic and brahmanic gods; it first relates how
anwantari was instructed by Indra, in a knowledge of
Ayur-Veda, and subsequently practised medicine with
eat success in heaven. Witnessing, however, the ignor-
ce and misery of mankind and the frequency and fatality
the diseases afflicting them, he descended to the earth to
ieve their maladies and to instruct them in the preven-
n and cure of disease. He became king of Kasi (Benares)
der the title of Devadasa, and was so celebrated for his
ccessful treatment of disease that the sages sent eight
pils to Benares to study under him. Their names, as
ong the first students of medicine, are worthy of record,
y were Aurabhra, Baiturana, Goupuraa, Karabirja,
pudhnuba, Poushkalabata, Rukeeta, and Susruta. On
ir arrival, they learned that Dhanwantari had left his
ital and retired into the forest, whither, however, they
owed and arranged with him that Susruta, son of Visva-
tra, a contemporary of Rama, should be allowed to ask
estions and record Dhanwantari's replies. At the outset,
anwantari told Susruta that the Ayur-Veda was too
ky to be useful and recommended him to abridge and
ange it into parts so as to facilitate its study: this
sruta did.

Thus, as will have been seen, there exist throughout
dia, almost a purely vedic account of the origin and dis-
bution of the Ayur-Veda, in which Indra, Surya and the
win took part in making it known through Charaka,
l, also, a brahmanical account of its reaching mankind
ough Susruta, in which, however, the vedic Indra also
ds mention.

Through the fragments of it that have come down to us
he writings of Charaka, Susruta and their commentators,
learn that the Ayur-Veda originally consisted of 1,000
tions, each of a hundred stanzas, making a lakh or
),000 verses (sloka) arranged into eight books, as under:

Salya, Surgery.

Salakya, External surgical ailments of parts above the collar-bones, diseases of the nose, mouth, ears, &c. These two divisions constitute the surgical diseases of modern schools.

Kaya-Chikitsa, Diseases affecting the whole body, as fever, dysentery, mania, diabetes, &c. This may be considered as constituting the modern practice of physic.

Bhuta-Vydia, mental ailments, demoniacal possessions, to be removed by prayers, offerings, ablutions, medicines, &c.

Kaumara bhritya, Infantile ailments and nursing.

Agada-tantra, Antidotes for poisons, and poisonous snake bites.

Rasayana-tantra, chemistry, alchemy, medicines to cure diseases in general and restore youth.

Vaji karana-tantra, Reproduction; diseases of organs of generation, local diseases.

From the above legends it is clear that of the two ancien authors who commented on the Ayur-Veda, Charaka wa the earlier, and seems to have lived during, or towards th close of, the vedic age; while Susruta wrote as brahmanism was being introduced, but probably long prior to the grea buddhist revival to which the preaching of Sakhya gave rise Professor Wilson, however, seems to entertain the opinio that both Charaka and Susruta wrote during the 10th o 9th Centuries B. C., grounding his belief on the fact tha Dhanwantari, Charaka and Susruta are named in th Puranas, also in poems written during the reign of the raja Nala. Charaka appears to have been a person of varie thought and culture and to have had an earnest desire t teach men how to preserve their healths and lead virtuou lives.

Neither Charaka nor Susruta, nor any of the ancient com mentators on the Ayur-Veda, had the prejudices that no exist amongst hindus against touching the dead body; an nothing was allowed to interfere with the important an necessary branch of knowledge which can only be acquir by dissection alone. The anatomical parts of the ancie books appear to have been prepared from actual dissecti and all the ancient hindu sages, or Rishi, are said to ha recommended the dissection of the human body as prop and necessary. There are now, in brahmanic times, sever

ees belonging to one or other of the many current sects
modern hinduism who unhesitatingly study practical
tomy, and such students were doubtless more numerous
the ancient vedic times, when Charaka and perhaps even
sruta lived, centuries before modern hinduism was thought

At what era the races who form the higher castes of
dus took their present attitude of standing aloof from
study of practical anatomy cannot now be ascertained.
extreme views which they now entertain do not find
pport from their great Lawgiver Manu, who is supposed
have lived B. C. 900. Manu speaks lightly of the cere-
nial defilement resulting from contact with the dead; he
(77) "should a brahman touch a fresh human bone,
is purified by bathing; and if it be dry, by stroking a
or by looking at the sun, having sprinkled his mouth
with water." And again, (85) "one who has touched
orpse, is made pure by bathing."

Charaka and other ancient physicians say "that a prac-
oner should know all the parts of the body, both exter-
and internal, and their relative positions with regard to
other; without such a knowledge he cannot be a pro-
practitioner."

Susruta says that a jogi should dissect, in order that he
know the different parts of the human body, and that
rgeon and physician should not only know the external
earances but also the internal structure of the body, in
er to possess an intimate knowledge of the diseases to
ch it is liable, and to perform surgical operations so as
void the vital parts. It is, he says, by combining a
wledge of books with practical dissection that the prac-
oner will alone attain an intimate knowledge of his pro-
ion. These sound views afford the explanation why the
ent system of Hindu Medicine was so complete in all its
s and has been so permanent in its character. All the
e recent medical works of the hindus are based on the
ks of Charaka and Susruta, and the commentators have
lly adhered to the classifications and general details of
originals. But these imitators being ignorant of ana-
y and of the usual causes of disease are more defective
eir descriptions, particularly when they have not closely
owed the more ancient writers. The Greeks objected to
study of practical anatomy, in reverence of the dead;

but the objection of the modern hindus is merely that it may occasion a ceremonial uncleanness.

The work of Charaka is still regarded as of the highest rank, but from the author's want of exact anatomical and pathological knowledge, in his manner of treating his subjects, and arrangement of diseases, he is often obscure though his descriptions may be accurate. He is superior to Susruta in the plan of treatment which he recommends while Susruta is principally celebrated for his anatomical descriptions and the judicious principles of surgery which his work contains. Charaka's pupils practised as physicians those of Susruta followed surgery, and the ancient hindu writings recognize the importance of surgery and surgical dexterity when they state that "the first, best, and most important of all implements is the hand."

Susruta's work, next to that of Charaka, is the oldest book of medicine possessed by the hindus. He re-arranged the eight books of the Ayur-Veda into six chapters, viz. :-

Surgery, Sutra St'hana, in forty-six chapters.
Nosology, Nidana St'hana, in sixteen chapters.
Anatomy, Sarira St'hana, in ten chapters.
Therapeutics, Chikitsa St'hana, in forty chapters.
Toxicology, Kalpa St'hana, in eight chapters.
Local diseases, Uttara St'hana, in sixty-six chapters.

It was king Dhanwantari who suggested this course : when Susruta with other pupils visited him near Benares Dhanwantari asked them on what he should first lecture they answered, on surgery, on the principle that, formerly there were no diseases among the gods and wounds were the first injuries which had required treatment. Besides they said, the practice of surgery is more respected, as affording immediate relief and is connected with the practice of medicine; although the latter has no connection with surgery.

Professor Wilson was of opinion that the Arabians in the 8th century followed the hindu works on medicine even more than those of the Greeks, and that Charaka and Susruta and a treatise on Nosology (Nidana) were studied during the reigns of Harun ur Rashid and Mansur (A. D. 773) either from originals or from Persian translations.

The very ancient books named below are arranged according to their supposed eras :

haraka, and Agni Besa, on Medicine and Surgery, by raka.
hhanwantari and Susruta, on Medicine and Surgery, Susruta.
upadhanaha, on Surgery.
urabhra, on Surgery.
hhila Tantra, by Bhila, on Medicine, *lost.*
atukarna Tantra, by Jatukarna, on Medicine, *lost.*
arasara Sangita, by Parasara, on Medicine, *lost.*
he above, as also the Atri Sangita by Atreya and the ppari Tantra by Karpari (lost), are mentioned in the ent Mahabharata.
arita Sangita, by Harita, on Medicine.
hagavata, on Medicine.
hava Prakasa, by Ubhatta, on Medicine.
odrananda, on Medicine.
hakradatta, on Medicine.
rachara ratna bali, on Medicine.
aranga dhara, on Medicine.
ajanir ghanta, on Materia Medica.
akradatta, on Materia Medica.
rabya guna, a Commentary on Chakradatta.
adhaba Nidana, on Nosology.
angaja Ratnabali, on Pharmacy.
asa Ratnakar, on Metallic preparations.
asendra Chintamani, do.
asendra Kalpa Drumi, do.
adhumati, on Medicine.

he writings of the hindus show that at an early period heir speculations their philosophers reduced the mate- world to five elementary principles and primary quali- by the agency of which they explained the appearance, osition and condition of the world and the structure functions of the animal body. The five elements were , water, air, fire and ether, which they believed to be ined in every sort of food and to enter into the com- ion of all living bodies. They put forward the physio- al doctrine that air, bile, and phlegm are the three orts of the system; that without these three humours the blood the individual could not exist, and if de- ed disease and death resulted. Pathology was ex- ed by the hindus on the same principle as their phy-

siology. Nature, they believed, is liable to occasiona irregularities, from the impurities in, and the imperfec manner in which, the elements and qualities are mixe together. The harmony of the humours of the body, alsc they considered is liable to derangement, and that a one time disease arises from a relative increase of one c more of the principal humours, at another time from diminution of them. Holding these views the indicatio of treatment are to promote the just balance of the el ments and humours by a judicious choice of aliment a by such means as assist the vital principle in the compl tion of the assimilation, and if necessary ejecting t corrupted humours from the body by emetics, purgative or bloodletting. This doctrine of the humoural patholo seems, at one time, to have been believed over a great pa of the globe and led to the most pernicious preventi means being followed, and among the hindus and throug out Asia it is still as generally believed and acted on as was formerly in Europe.

Another plausible doctrine was that all ailments divi themselves into the two great classes, of sthenic asthenic disease, the former being an increase, the latte diminution, of excitement, between the extremes of wh health was supposed to be placed. This appears to ha been an early opinion among the hindus, is now genera believed in by all the Asiatic nations and has led them the division of remedies into stimulating and cooli which are employed according to the nature of the disea For the hot or sthenic diseases cooling remedies are us while hot remedies are exhibited to remove the cold asthenic ailments.

B. C. 570—504? **Pythagoras,** son of Mnesarch was the first to assume the title of philosopher. He born in the island of Samos B. C. 570, (although some B. C. 608 others 586 or 584.) Much related of hi doubtful. But he was educated in Greece, and su quently travelled, between B. C. 560—540, for twenty thirty years in Syria, Phœnicea, Egypt, Arabia, Chal India and Gaul. He is believed to have obtained m information from the priests of Egypt, and to have m himself master of the doctrines of the Chaldeans, of Persian magi and the gymnosophists and budd'hist

dia. Heraclitus and all authority bear testimony that thagoras was a man of extensive research and acquired truction. He was amongst the first to travel in the East, lowed by Anaxarchus and Pyrrho, and by Thales, Crates l Eudoxus into Egypt; Pliny says "certe, Pythagoras, pidocles, Democritus, Plato, ad hanc discendam navigare iliis verius quam peregrinationibus susceptis." His eek name is supposed to be derived from the words as or budd'ha, αγορευω, to expound, and Prinsep, Colebrook l Pococke believe that he was a disciple of Sakya, the dd'ha, with whom he was contemporary and of whom he s an ardent apostle. Shortly after his return to Samos visited Crete and Sparta, but finally settled at Crotona the south of Italy where he opened a school which has n called the Italian or Doric. At one time there were ee hundred students in it, forming a school of philo- hy, a religious brotherhood and a political association, ich continued to flourish to near the close of his life, but s then broken up during a civil commotion. He himself l to the Locrians, then to Metapontum, and then for ge to the temple of the Muses, where he died at the age 80, in want. The ethics of the Pythagoreans were of loftiest and most spiritual character. He was amongst first of the Greek philosophers who investigated the ucture and functions of the animal body, and his fol- ers, Democritus and Heraclitus, appear to have added siderably to the knowledge of anatomy and the prac- of medicine. They were amongst the most illustrious the Pythagoreans, and their contemporary Herodicus t introduced the practice of gymnastic exercises which erwards formed so large a part of medical treatment. mocritus paid attention to comparative anatomy, and is posed to have dissected the human body, and Hippo- tes was the pupil of Heraclitus and Herodicus. Several he philosophical views of Pythagoras seem to have been t enunciated by him. His theory, however, of the five ments, fire, air, water, earth and ether, is that of the ient hindu philosophers still current amongst the people India, the budd'hists of Burmah, and people of China of present day. He entertained a numerical theory: he ieved in the metempsychosis or transmigration of souls, ich he is supposed to have obtained from the priests of

Egypt or from the gymnosophists or budd'hists of India, a doctrine in which the hindus and budd'hists still believe, and he held the eating of animal food to be unlawful. He had married a lady at Crotona and had two sons, Telauges and Mnesarchus, who were his scholars and successors, also two daughters, Damo and Myia. After the breaking up of the school at Crotona and the dispersion of the inmates, Lysis and Archippus collected the doctrines of their master in a systematic treatise; but the books were still kept secret, and Plato had to purchase from Philolaus a writing of Pythagoras, and received from Archytas his commentaries on the verses and treatises of his master.

B. C. 500? **Agastyer,** is celebrated as a philosopher and physician who labored among the Tamil race in the south of India. Little is known regarding him, but he is alleged to have introduced the literature and religion and science of the northern hindus among the Tamil people. His era is not known, but it is supposed to have been about 500 B. C. Professor Wilson says he is named in the Ramayana. His writings are all in verse in the Tamil language, and he is believed to have written the many esteemed books, philosophical and medical, as under:—

	Stanzas.	
Vydia Vagadum..	1,500	on Medicine.
Kanda Puranam..	1,000	on Ancient History.
Toruvaliadal Puranam.....	3,367	on Moral Philosophy.
Pasāvedi.....	200	Religious Rites of the Hindus.
Diksha Avédi.....	200	Magic, Enchantment; Education of Youth.
Pernul.....	10,000	on all Diseases; on Regimen.
Purāna Nul.....	200	Exorcism; Forms of Prayer.
Purāna Sutram...	216	Materia Medica, Regimen, Devotion, Initiation of disciples.
Karma Kandan...	300	on Diseases, the result of sin and crime.
Agastyer Vydia	150	on Purification; Sanctification; on Poisons and their preparations.
,, ,,	205	on Medicine, on Chemistry.
,, Vagadam	48	on the cure of Gonorrhœa.
,, ,,	16	on Head diseases & treatment.
Kalig-ghianam...	200	on Theology.
	50	on Leprosy and the cure.
Agastyer Vydia	1,200	on Botany, Materia Medica.
,, ,,	500	on many Diseases, with many Formulæ.
,, ,,	300	on Pharmacy.

He is regarded by the modern Tamil race as a maha rishi, great saint. It is possible that some of the books of hich he is now the reputed author have been written by s followers, but of this, all is surmise.

B. C. 500—428? **Anaxagoras** was born at Clazo-enæ, one of the Greek towns of Ionia, three years before e death of Pythagoras and ten years before the battle of arathon. He was a pupil of Anaximenes, and from his th to his 50th year resided at Athens, where Pericles, ripides, Socrates and Archelaus, and some say Democri-s, were amongst his hearers. On a charge of impiety, he as expelled from Athens B. C. 431, when Socrates was 37 ears old, and went to Lampsacus on the Hellespont, where ter a short residence of three years he died B. C. 428, ed 72. He wrote a book on Nature and explained the cessity of separating mind (νους) from matter. He dopted the theory that all bodies are formed of atoms of e same nature, put in motion by νους or Intelligence. efore him Anaximander (B. C. 610—546) son of Prax-des, a disciple of Thales, born at Miletus, had adopted e theory of an original indestructable matter from which ll emanates and all returns; and Anaximenes, likewise a tive of Miletus (B. C. 556?) had taught that the air is e indefinite, divine, perpetually active, first principle of ll things.

B. C. 468—399? **Socrates,** a philosopher of Greece, hose name, as Sokrat, is familiar to the muhammadans of ssia. He was born at Athens B. C. 468. His father was sculptor and his mother a midwife. He served bravely a soldier in the Peloponnesian War and, at the siege of otidæa B. C. 432, he saved the life of Alcibiades, and at e disastrous battle of Delium B. C. 424, that of Xenophon, nother of his pupils, his own life being saved by Alcibi-des. He had several disciples who attained eminence, the ost famous amongst whom were Plato, Xenophon and lcibiades. He does not seem to have committed any of is views to writing, but Plato digested his discourses in e form of philosophical conversations, making, however, many improvements that Socrates one day hearing Plato epeat his Lysia exclaimed "Ye gods! how many fine ings has this young man made me say which I never agined!" The authorities for his doctrines are the

Memorabilia and the Apology of Socrates by Xenophon, the Dialogues of Plato and the strictures of Aristotle. When far advanced in years, Socrates was accused of treasonable schemes for which he was condemned to die by the poison of hemlock juice. The solemn celebration of the Delian festival of Theora delayed for a month the carrying out of the sentence, and during the interval he was often urged to escape, but he refused saying, "where am I to go to avoid death?" At the close of the festival, B. C. 399, surrounded by his friends, he poured from the poison cup a libation to the gods, then drank off the contents with perfect composure. He walked about the room for a while, and when unable to do so longer, he lay down on a couch and before his heart ceased to beat exclaimed "My friends we owe a cock (the emblem of life among the Greeks) to Æsculapius.' After he had said these words, he covered himself with his cloak and expired. His person and appearance were ungainly. Plato his pupil says he had the head of a Silenus, but mental grace ennobled him and attracted the virtuous. He was unfortunate in his wife Xantippe who was a woman of a violent unruly temper.

Socrates was eminent amongst the ancient Greeks, the ablest race of whom history bears record, and of the sub-races that of Attica was the ablest. In the space of the one century between B. C. 530 and 430, Athens produced five illustrious statesmen and commanders, Themistocles Miltiades, Aristeides, Cimon son of Miltiades, and Pericles son of Xanthippus, the victor at Mycale; four literary and scientific men, Thucydides, Socrates, Xenophon, and Plato four poets, Æschylus, Sophocles, Euripides, Aristophanes and the sculptor Phidias; and the 2,300 years that have elapsed since Socrates and Phidias passed away, have not produced their equals.

B. C. 460—357? **Democritus,** a philosopher of Greece, was born B. C. 460 either at Abdera in Thrace or at Miletus in Ionia, and died B. C. 357 at the advanced age of 104. He was a great traveller and continued journeying till 84 years of age, travelling into Egypt, Ethiopia Persia, Babylonia, dwelling, also, with the gymnosophists in India, and learning from their priests, geometricians, physicians and magi. He is also said to have studied astrology and theology under the magi whom Xerxes had left behind

ee is described as having written on the nature of man, n pestilential diseases, on prognostics, on diet, on the uses of disease, on seeds, trees, fruits, and animals; on hics, physics, mathematics, general literature and arts. emocritus and Heraclitus were amongst the most illus- ious followers of Pythagoras, but they became famous tther from the ingenuity with which they supported their rticular hypotheses than from the additions they made actual knowledge. Democritus paid attention to the udy of comparative anatomy, and it has been conjectured at he even ventured on the dissection of the human body. ee is said to have been a friend of Hippocrates.

B. C. 460—361? **Hippocrates** is known to the uhammadans of Asia by the name of Bukrat. He was rn at Cos, B. C. 460, son of Heraclides and Phænarete, the Asclepiadæ family, members of which for nearly three ndred years followed the medical profession and pro- ced seven celebrated physicians who are supposed to be e authors of many of the treatises that are usually attri- ted to Hippocrates alone. It is to the Asclepiadæ that e science of medicine is indebted for a separate existence Europe. Before their time the knowledge of medicine as confined to the priesthood who kept it secret, or it was llowed by the philosophers as a scientific pursuit. He is puted to have been a lineal descendent, in the 18th de- ee, from Æsculapius, but of all the family, Hippocrates the most famous among the Greek physicians, and is garded as the founder of scientific medicine. He is stated have been the pupil of Heraclitus and Herodicus, and he therefore classed among the followers of Pythagoras. In s philosophical views he was a Pythagorean, and of the ct or school of Heraclitus. He travelled for a considera- e time throughout Greece, also in Scythia, Colchis, Asia inor, and, perhaps, Egypt, and over a great part of Asia. e taught that the body is composed of four primary ements, fire, water, earth and air; that these elements riously combined produce the four cardinal humours, and ese again the different organs of the body. These ctrines are principally developed in a treatise "On the ature of Man," and it is to him that Galen attributes the thorship of this theory which was afterwards more widely ade known by the genius of Plato. At his time, the dis

tinction between Surgery and Medicine had not been made, but amongst the works attributed to him are treatises on fractures, on wounds of the head, and on ulcers. His knowledge of anatomy was little if at all superior to that of his contemporaries, and his knowledge of true physiology and of the functional action of the organs of the body during health and disease was extremely limited, but in the accuracy with which he observed the symptoms of disease and in the fidelity of his descriptions he has rarely, if ever, been surpassed. It is upon these grounds that he has justly obtained the title of the Father of Medicine, and will at all times continue to command for him the respect of medical men. By the ancient Greek and Latin and Arabian physicians, his writings were held in the highest esteem, and have been translated into Arabic and all the languages of Europe; the Greek and Roman writers Plato, Celsus, and Pliny speak of Hippocrates with great respect and Galen with an almost enthusiastic admiration. In his treatment of disease, he acted on the great and fundamental truth that in medicine, probably even more than in any other science, the basis of all true knowledge is the accurate observation of actual phenomena, and the correct generalization of these phenomena, is the sole foundation of all our reasoning. He accurately described the leading features of diseases, and introduced the inductive plan of observing the phenomena of nature and of deducing conclusions from them. Hence his descriptions of particular diseases, after all the revolutions of centuries, customs and habits, are still found to be correct representations of nature, while his indications of cure and the treatment derived from them are generally rational and practical. It was Hippocrates who introduced the practice of narrating individual cases of disease, and he was the first to deduce the indications of cure from his observations of the properties of remedies. His system has never received a name but numerous as have been the systems that have been projected since, mankind has always returned to his principle of making observation the only rule in the treatment of diseases. It is in his writings that the first traces are observed of physiology; he supposed the existence of a principle called nature (φυσις) possessed of a kind of intelligence, influencing all parts of the corporeal frame and

superintending and directing its motions, and he conceived
lesser and subordinate powers (δυναμις) which are more
particularly concerned in the various functions of the body.
One of the leading pathological doctrines of Hippocrates,
was that the fluids are the primary seat of disease, a doc-
trine which, under the denomination of the humoural
pathology, became, in Europe, the prevailing opinion of all
sects and of all theorists until the commencement of the
19th century. The body was supposed to consist of four
elements, fire, water, earth and air, combined in different
proportions in different individuals, so as to produce an
original difference in the constitutions of the body, giving
rise to the four temperaments. The combinations of the
four elements with the four states or qualities with which
they are affected, of heat, cold, moist and dry, gave rise to
the four fluids or humours of the body,—blood, phlegm,
yellow and black bile, which originally tended to produce the
four temperaments and which in their turn contributed to
the excess or defect of each of the humours.

Another of the most important doctrines of Hippocrates
was that of crises, or the natural tendency of diseases to a
change at certain stated periods depending on a natural train
of actions, which, when proceeding in their due course,
terminate in the removal of the morbid action. These
supposed crises were, for the most part, evacuations of
various kinds, especially by the bowels or the skin, and
hence the regulation of these evacuations led to his most
important indications and became a main part of his prac-
tice. He believed therefore in critical evacuations and
critical days. In his treatment of the sick he paid great
attention to suitable regimen, particularly urging the
necessity of careful dieting in acute disease. He mentioned
that auscultation would distinguish between pus and serum
in the chest, and 2,200 years afterwards Laennec quoted
that observation.

He was not aware of the indications to be drawn from
the pulse. He employed purgatives largely; he prescribed
diuretics and sudorifics; he drew blood both by the lancet
and the scarifiator; he administered injections, inserted
pessaries, applied ointments, plasters and liniments, and
watched the temperature of the body and the air. Most
of the articles of his Materia Medica were of vegetable

origin. He was skilful in prognosis. While there are fe
persons of any age or nature who attained to greater dis
tinction among their contemporaries or whose memory ha
been more cherished by posterity, there has perhaps been n
one whose fame was more merited or established upon a firme
foundation. The essays attributed to him are 72 in num
ber, but only 15 or 20 are supposed to be genuine. Th
most esteemed are the essays on Air, Water and Locality
on Prognosis; on Wounds of the head; and on Diet i
acute diseases. Herophilus, Asclepiades, Rufus Ephesianus
Celsus, Galen and others wrote commentaries on hi
writings, but those by Galen still extant are De natu
hominis; De salubri victus ratione; De ratione victus i
morbis acutis; De aere, aquis et locis; De fracturis; D
articulis; De officini medici; De alimento; De Humoribus
Prænotiones; Prædictiones; Aphorismi; De morbis vulg
ribus. The most ancient commentator was Herophilus
but the most ancient commentary extant is De articul
by Apollonius Citiensis. A complete edition of his worl
was published in Germany.

The people of Athens conferred on Hippocrates gre
honors and decreed a public maintenance for him and h
family. He is said to have died at a very advanced ag
(99?) at Larissa in Thessaly. The improvements whi
he made were so considerable that for many centurie
his successors appear to have been content to follow hi
in reverential imitation. It is said that while giving valu
ble assistance during the plague of Athens, B. C. 430, wi
which the inhabitants of Persia were also afflicted, Artaxerx
Longimanus invited Hippocrates to his court, but that
declined to leave his countrymen in their trouble. Neith
the invitation nor the reply have come down to us, b
the tradition is sufficient to show the high estimation
which the Greek physicians were then held. The do
trine of Hippocrates was blended by his immediate su
cessors with the platonic philosophy from which arose t
system of the dogmatics founded by his sons Thessal
and Draco and his son-in-law Polybius, the most renown
of his followers. The medical school of the Dogmatics he
that disease could only be securely treated on a knowled
of the healthy structure and action of the organs of t
body, and of the influence of remedies and the effects

ease upon it. These views were opposed by the Empi-
s who maintained that such knowledge was not only un-
cessary but unattainable, and that simple experience
uld be the only guide to practice. In Alexandria B. C.
5, medicine had degenerated into mere dialecticts and
k learning. The dogmatic school was followed by the
piric school (B. C. 286,) then by the methodic school
. C. 100) subsequently by the pneumatic school (B. C.
) and at length by the Eclectic school (A. D. 81) which
k from all the others. Galen's views then assumed great
minence, until the time of Avicenna who for a period was
med superior to Galen. Western Medicine begins with
establishment of the medical school at Salerno, perhaps
sting since the 9th century, but well established in 1147
l 1238, where medicine was taught according to the
nciples of the Greeks. The fall of the Galenic school
s completed in the 16th century (1526) by the chemico-
osophical system of Theophrastus Paracelsus.

B. C. 460—? **Acron,** a physician of Sicily, whom
ny regards as the founder of the Empiric sect. He was
or to or a contemporary of Hippocrates.

B. C. 429—347? **Plato,** an illustrious philosopher of
eece, called Platon by the Greeks and Iflatun by
hammadan writers. He was born at Athens in the
nth of May, B. C. 429. His father Ariston was a des-
dant of Codrus; his mother Perictione a descendant of
on. His first teacher was Dionysius the Grammarian:
subsequently received instructions in gymnastic exer-
es from Ariston the Argive wrestler, who gave him the
ne of Plato on account of the breadth of his forehead.
eight years from the age of 20, he studied under
rates, a great part of whose discourses he committed to
ting, but Euclid, Metellus, Draco and Damon are also
ned as his teachers at various times. On the death of
rates he travelled to Cyrene, where he studied geometry
other branches of mathematics. He then took up his
dence for a long time in Egypt, obtaining information
n the priests, but afterwards dwelt at Tarentum in Italy.
visited Italy to study the volcanic phenomena of Mount
a, and on his return to Athens he settled and taught in
neighbourhood at a place called the Academy, from
ich his school was styled the Academic. On the invita-

tion of the elder Dionysius he went to his court, but hi free discourse offended the tyrant who is said to hav ordered him to be sold as a slave. His purchaser wa Anniceres a native of Cyrene, who freed him, and h returned to Athens. Though he had had ample warnin from the elder tyrant who died B. C. 368, he is said to hav revisited Sicily on the invitation of the younger Dionysiu whose conduct, however, was such as to compel Plato agai to return to Athens where he taught, and at the age of 8 he died at Ceramicus. Aristotle was for many years a pup of Plato, but their teaching was very widely different i mode. The works of Plato that have come to hand, consi of a long series of dialogues, the chief interlocutor bein Socrates. His dialogues are dialectical, ethical and phys cal. Ethics were then associated with politics. In physic he observes that fire, water, air and earth must natural be in the composition of all bodies. The philosophy Plato is sublime, his morality pure, and his views of th divine being and of a future state clear. His book have been printed in the original Greek and translatio made of them into English, French and German. Th subjects of the dialogues were elementary, the applicatio of principles, and the union of theory and practice. Neith Plato nor Aristotle composed any treatises on medici strictly so called, but they make frequent allusions to it various parts of their writings. Plato in his dialog styled Timæus and in his treatise De Republica, enters in various physiological discussions respecting the functio of the body, and the supposed effect of their derangeme in producing the morbid conditions of the system, and h offered various incidental observations on the practice his contemporaries, but it does not appear that either t theory or the practice of medicine received any impro ment from this philosopher.

B. C. 450? **Polybius,** or as sometimes written Po bus, a pupil and son-in-law of Hippocrates, lived abo the middle of the fifth century B. C., in the island of C He assisted Thessalus and Draco, the sons of Hippocrat in establishing the ancient Dogmatici school or Hippocra as it was sometimes called after Hippocrates, whose do trines it claimed to hold, also called Rationalist because professed to set out with certain theoretical princip

ech were derived from the generalization of facts and servations, and to make these principles the basis of ctice. He is supposed to have been the author of seve- of the works usually attributed to Hippocrates, amongst ers Peri gones; Peri phusios paidiou; Peri diaites ugiei- ; Peri pathon, and Peri ton entos pathon, and some n have attributed to him Peri phusios anthropou. Celsus Galen both mention him.

B. C. 440—370? **Ctesias,** son of Ctesiochus, was a eek physician who flourished about the end of the 5th ttury B. C. He belonged to an Asclepiad house at dos. He was a contemporary of Xenophon and Hero- us. He took service with the Greek mercenaries who ed Cyrus, son of Darius II, in his expedition against his ther Artaxerxes Mnemon by whom he was taken pri- er at the battle of Cynaxa B. C. 401, forty miles from bylon. He remained at the court of Artaxerxes Mne- n for seventeen years. He wrote a history of Persia ich he brought down to 398 B. C., also a history of ia, a treatise on Mountains; a description of Sea Coasts, ook on the revenues of Asia, and one on Medicine.

B. C. 384—322? **Aristotle,** the Aristoteles of the eeks and the Aristoun of the Arabs, one of the ablest men cience and philosophy. He was the son of Nichomachus, ysician to the Macedonian king Amyntas II, grandfather Alexander the Great, and was author of some medical and entific treatises since lost. Aristotle was born at Sta- ra in Macedonia B. C. 384. Both his parents, Nichoma- us and Phœstis, died while he was young. They were of race or clan of the Asclepiadæ, Nichomachus, his father, iming descent from Machaon son of Æsculapius. He ame a pupil of Plato at the age of 17 at Athens and was ded by Plato the intellect of his school. He remained re until the death of Plato B. C. 347. On this event, istotle went to the court of Hermias, at Atarna in Mysia, d subsequently married the sister of that prince; he ote an explanation of his reasons for the marriage, but was stigmatised for it by all writers up to the early turies of this era, their reasons for so doing being w unintelligible; possibly when he saved her life he d adopted her as a daughter. He became the teacher Alexander the Great, born B. C. 356. Philip, B. C.

343, is said to have invited Aristotle to accept the office of tutor in the following letter: "King Philip of Macedon to Aristotle greeting;—Know that a son has been born to me. I thank the gods not so much that they have given him to me, as that they have permitted him to be born in the time of Aristotle. I hope that thou wilt form him to be a king worthy to succeed me, and to rule the Macedonians." On Alexander departing for Asia, Aristotle returned to Athens where he taught and wrote. His school was called the Peripatetic. The greatest of his works was on Natural History, but his writings comprised treatises on Medicine, Generation, Destruction, Metaphysics, Philosophy, Ethics, Rhetoric, Poetry, Physics, Political, Economical and Mental Science. He had in his youth paid particular attention to anatomy and may possibly have practised medicine. He was the first writer who published any regular treatises on comparative anatomy and physiology, and his works on these subjects may be still read with much interest, after all the additions which have been made to them by the labours of the moderns. Later in life it was to the study of philosophy and the investigation of nature that he devoted his whole time, and he was largely aided in his researches by his former pupil Alexander, who sent him the animals of the various countries he overran. Aristotle, being accused of atheism, left Athens with his pupils, and he is supposed to have died of disease of the stomach at Chalcis B. C. 322, aged 63. Some said he took poison voluntarily on being summoned to appear at Athens to answer an accusation of complicity in the death of Alexander, but this is not credited. His writings were very voluminous, but few of them have come down to us. They were partly elaborate works, composed in a strictly scientific manner; and partly popular treatises, written with the object of enlightening the public as to his own views, the Platonic philosophy being at that time so widely diffused through all classes that it was deemed almost a duty for every educated man to be a follower of Plato, and the philosophy of Aristotle differed greatly from that of Plato. The latter gave a free scope to his imagination and by his doctrine of ideas, independent of the objects which they represent, opened a wide door to the dreams of mysticism. But Aristotle was a close and strict observer of both mental and

ysical phenomena, avoiding all the seductions of the acy, and following a severe, methodical, and strictly scien- ic course of inquiry, founded on data ascertained by perience. Aristotle's mode of reasoning is that now own as induction, or that of drawing inferences from all e available particulars, ascending from the parts to the cole. Plato's mode, that of deduction, was exactly the rerse, reasoning from the whole to the part. The induc- e, or as it is often called, the Aristotelian process, is that ich commends itself to most scientific minds. He was e head of the Peripatetic sect, and is sometimes called e Stagerite, because born at Stagira. In later times, erhoes and Avicenna were the great expositors of his ttem. He had weak health, but marvellous industry, was ttless, and taught as he walked, hence the name of the ipatetic school. He was very particular about his dress. as wealthy. His grandson, Nicomachus, was considered some to have been the author of the Nicomachean nics, generally attributed to Aristotle. His uncle's ndson, (uncle's daughter's (Hero) son) Callisthenes, the llosopher who accompanied Alexander the Great to the st, was an imprudent man, wanting in tact, but otherwise e.

3. C. 371 ?—285. **Theophrastus** was born at esus in the island of Lesbos, B. C. 371. He studied at ens under Plato, and became the friend of Aristotle, o gave him the appellation by which he is known, his e name being Tyrtamus. He succeeded Aristotle in the cēum, where the number of his pupils at one time eeded 2,000. He combined the knowledge and pro- dity of Aristotle with the fascinating eloquence of Plato. wrote on Metaphysics, on Botany, and on the History Plants ; but only fragments of many of his works have ne down to us.

3. C. 323 ?—283 ? **Herophilus,** a native of Chalce- , was one of the most celebrated of the physicians of Alexandrian School, and lived in the reign of the first lemy of Egypt (B. C. 323—283). His books appear to e been very voluminous, but the only remains of them extracts made by Galen and Cælius Aurelianus, in ch, however, they are so interwoven with those of his temporary Erasistratus, that it is almost impossible to

say what portion of the progress made in their time was owing to the labors of each. The chief feature relating to Herophilus in the progress of medicine, was his commencement of the study of anatomy from dissections of the human body, and he is said to have dissected 700 subjects. He was an accurate anatomist, also a good botanist. It was the facilities afforded for the study of anatomy that gave such distinction to Alexandria as a school of Medicine. Herophilus and Erasistratus were the first of the learned men in Egypt to dissect the human body, for which purpose the bodies of criminals were allotted to them by the Government. By their labors nearly every part of the anatomy of the human body was rendered clearer, and many very important discoveries were made. They determined that the nerves are connected with the brain. Herophilus discovered the arachnoid membrane, and the chief meeting of the sinuses into which the veins from the brain pour their blood, is still called the Torcular Herophili. He noticed the lacteals, though he did not ascertain their uses, and he did not distinguish the nerves from the tendons. Herophilus practised Medicine as well as Surgery; and, according to Galen, was one of the first who paid very minute attention to the varieties of the pulse. He seems to have founded a school, which was known by his name, and Strabo mentions that there was in his time a great school of Herophilists established in a temple between Laodicea and Carura in Phrygia.

B. C. 323—258? **Erasistratus** had been the pupil of Chrysippus of Cnidos, a violent opponent of the Hippocratic School, and a bold innovator in medicine. He has also had Theophrastus as a teacher. His birth-place is not ascertained; Cos, Chios, and Julis, have all been named. Pliny says he was the grandson of Aristotle by Pythias. He lived for a time at the Court of Seleucus Nicator, king of Syria, where he is said to have discovered the cause of the ill-health of Antiochus, Nicator's eldest son; but similar stories are told of Hippocrates, Galen, and Avicenna. He repaired to Alexandria, where he practised and taught, but gave up practice in his old age that he might pursue his anatomical studies without interruption. He was alive B. C. 258, and seems to have died in old age near Mount Mycale in Ionia. He is one of the most celebrated

natomists and physicians of antiquity. He wrote several orks on anatomy, practical medicine, and pharmacy: rhaps no one of the ancient physicians did more to omote anatomy than he did. He appears to have been ry near discovering the circulation of the blood, a bject which, with the heart, the brain, and the stomach, ceived much attention from him, and he satisfied mself that the nerses arose from the brain. He was erse to bloodletting and purgatives, and trusted to et, regimen, frictions, bathing and exercise, and to vege- ble drugs of a simple character. He believed that the nctions were perfect by a pneuma or spiritual substance, disorder of which caused disease. Erasistratus advanc- medical science by advancing anatomy: he imbibed from teacher Chrysippus, a prejudice against bleeding and ainst active remedies, trusting more to the operation of et or to the natural efforts of the system. Chrysippus did t belong to the family of the Asclepiades; he did not allow eeding in any case, and he discountenanced the employ- nt of all active purgatives.

B. C. 323?—258? **Hierocles.** The Greek school at exandria was advanced by the anatomical labours of erocles, a contemporary of Erasistratus.

B. C. 323—B. C. 51? **Ptolemy** or **Ptolomæus.** irteen Græco-Egyptian kings bearing this name, reigned Egypt from the death of Alexander till it became a man province. Under their patronage, but particularly der Ptolemy Soter and his son Ptolemy Philadelphus, all sciences were largely cultivated. The first Ptolemy, o founded the dynasty of the Greek kings in Egypt, led the Lagidæ, was the son of Arsinoe, a beautiful man who had been a concubine of Philip, king of Mace- n, and on that account, Ptolemy is commonly believed to ve been an illegitimate son of Philip. Authors, however, ege that he was the son of Lagus, a Macedonian of igno- birth. Ptolemy certainly enjoyed a high distinction at ilip's court. He was one of the ablest of Alexander's nerals, and in the division of provinces on Alexander's ath, B. C. 323, he obtained the dominion of Egypt, Lybia, d part of Arabia, to which, on the death of Perdiccas, he ded Cœlo-Syria, Phœnicia, Judea, and the island of prus. He was surnamed Soter, or preserver, by the

Rhodians, because of the assistance he had given them. He was very brave, and had all the qualities of an able and judicious general. He maintained a complete toleration in religion, and gave great encouragement to learning and science. He invited men of learning from Greece, and laid the foundation of the far-famed school of learning at Alexandria. He died B. C. 284.

Ptolemy II, ironically styled Philadelphus or brother-loving, succeeded his father, B. C. 283, and put to death his two brothers. He followed the example of his father in the encouragement of learning. He maintained with great liberality many distinguished philosophers and poets, of whom the most celebrated were Theocritus, Lycophron, and Callimachus. He established the public library which had probably been commenced by his father; also founded a Museum in the palace, for the promotion of learning and the support of learned men, attaching to it botanical and zoological gardens, and caused the septuagint translation of the Bible to be made. He had a feeble and sickly constitution, but great ability and energy. He cleared Egypt of marauding bands. He was the first to tame African elephants, those previously in use having been invariably imported from India. He founded the city of Ptolemais on the borders of Ethiopia as an elephant training stud. He recommenced the old Egyptian enterprise of the Isthmus of Suez Canal, and sent voyages of discovery down the Red Sea. With all this intelligence and energy, the life he led was that of a refined voluptuary.

Ptolemy III, surnamed Euergetes, succeeded his father B. C. 247. On his return from the Syrian expedition he took back, from Ecbatana and Susa, all the monuments which Cambyses and other invaders had removed from Egypt. He was murdered by his son B. C. 222.

The establishment of the Alexandrian School of Philosophy formed an important epoch in the history of Medicine. In the times of Ptolemy Soter and his son Philadelphus Alexandria was the intellectual metropolis of the world. The king's librarian had orders to buy at the king's expense whatever books he could obtain. A body of transcribers was maintained in the Museum, who made copies of such books as could not be purchased. It is said that Ptolemy Euergetes obtained from Athens the works of Euripides

hocles, and Æschylus, retained the originals and sent scripts to their authors, with large sums as an in- nity. When works were translated as well as tran- bed, incredible sums were paid, as in the case of the tuagint translation of the Bible. The other Ptolemys nothing for learning.

. C. 250? **Serapion,** an eminent physician of Alex- ria, who lived in the 3rd century before Christ. He one of the empiricists, and wrote against Hippocrates much vehemence. He is said to have been a pupil Herophilus, and it is stated by Celsus that he was the who distinctly professed the opinion that theory is to wholly discarded in medicine, and that direct experi- should be the sole guide. He occupied himself greatly researches into the nature of drugs. None of his ings have been transmitted to us. Indeed, the writ- of all the empirics have all alike perished.

. C. 135. **Nicander,** a celebrated poet, grammarian, physician, who wrote on poisons and their antidotes.

. C. 106?—46? **Asclepiades,** surnamed Bithynus, ative of Bythinia, was born in one of the three ns there known by the name of Prusa. The years of birth and death are doubtful: he seems to have been umble origin, but in Athens he lived on intimate terms Antiochus, the Academician, the master of Cicero, was born B. C. 106. He appears to have gone to me during the earlier part of Cicero's life, and to have d there in the time of Pompey. At a very advanced he accidentally fell down stairs and was killed. At first taught rhetoric, but later in life took to the study of dicine, and he was the first practical physician of note om Rome had seen; for, according to the historian Pliny, me, for 600 years, was without professed physicians, ugh not entirely without medical knowledge. It is him that the science is indebted in the first instance the division of diseases into acute and chronic, division which has a real foundation in nature, and ich still forms an important feature in the most im- ved modern Nosology. But his healing system was nded on the physiological doctrine of formless yet isible and changeable corpuscules, a doctrine which he pted from Heraclides of Pontus. He believed disease

to arise from inharmonious distribution of the corpuscul and relaxations or obstructions of the pores, holding th theory that acute ailments depend essentially upon a co striction of the pores, or an obstruction of them by superfluity of atoms; the chronic upon a relaxation of th pores or a deficiency of the atoms. He seems to hav been little acquainted with anatomy; he had no exa notion of the difference between veins and arteries; h was unacquainted with the use of the nerves, and he co founded them with the ligaments. He observed the doub tertian fever which was so common in Rome, and he di tinguished very accurately between the violent or febri dropsy and the chronic form unaccompanied with feve He was shrewd and observant, and his mode of treatme was no doubt often beneficial. He trusted more to dietet means than to the use of medicines, he disapproved the frequent use of emetics and purgatives, but he free adopted the practice of bleeding. He ascribed great valu to bathing and friction, recommended the free use of wi in many complaints, and regarded laughter, music a singing as efficacious in many ailments. The few fra ments of his writings that have come down to us we collected and published in Germany in A. D. 1794.

Up to this physician's time there had been tw sects or schools of medicine, the dogmatic and th empiric. The dogmatists were established by Thessal and Draco, the sons, and Polybius the son-in-law, of Hi pocrates. They maintained that the practice of phys must depend on the theory, and that he who is igno ant of the origin of diseases, cannot treat them wi advantage. The sect of the dogmatici were sometim called the Hippocratic school from professing to follow th doctrines of Hippocrates. The empirics on the oth hand held that the knowledge and practice of medici depends on observative experience alone (ἐμπειρια) a that the physician, like the farmer or the sailor, is form by practice not by discussion. The dogmatists studi anatomy, the empirics neglected it. The methodics, third school, was founded by Asclepiades. In their view they comprised something of the theoretical turn of th dogmatics with the practical simplicity of the empirics, b his pupil Themison of Laodicea adopted a middle cour

etween the dogmatists and the empirics, taking advant-
ge of the excellencies of each of them. He held that it is
n essential part of the business of a practitioner to make
mself acquainted with the nature of the human frame,
ith its laws while in the state of health, and with the
anges which they experience from disease. He arranged
l diseases into three classes, viz., the *strictum*, the *laxum*,
d the *mixtum*, the last consisting of the strictum in one
rt of the body, and of the laxum in another. He main-
ined that it was enough to refer any particular disease
one or other of these three heads in order to form the
oper indications of cure. It was from following this
an or method that the sect received the appellation of
ethodics. Themison's doctrine must be regarded as
refinement, and certainly an improvement on that of
sclepiades. The theory of the Methodics contemplates the
lids as the seat and cause of disease, in which respect
is directly opposed to that of Hippocrates, who traced
e primary cause of disease to an affection of the fluids,
ring rise to what has been termed the Humoural pa-
ology. The humoural pathology was zealously defended
Galen, and was universally followed by his successors
til the seventeenth century, when the opposite doctrine
solidism was revived and has been gaining ground
til the present day. None of the writings of Themison
extant, but Cælius Aurelianus gives a full account of
doctrines of the Methodic sect.

B. C. 80 ? **Diodorus,** surnamed Siculus, a Greek
storian and a contemporary of Cæsar and Augustus, was
rn at Argyrium in Sicily, about B. C. 80. He was a
eat traveller, visiting a great part of Europe and Asia
obtain information. He was in Egypt B. C. 60, and he
tes that there were then physician specialists attending
particular diseases. He wrote the Historical Library,
bliotheke Historike, which took him 30 years to com-
te. It was written with the greatest fidelity, and con-
ted of 40 books, of which 15 are in existence, with frag-
nts of the other twenty-five. It contained the history
almost all nations.

A. D. 1 ? **Heraclides,** of Tarentum, is highly com-
nded by Galen ; the age in which he lived must have been
nsiderably before Celsus.

B. C.—?—A. D. 38? **Aureleus Cornelius Celsus,** a philosopher who lived in Rome at the time of the birth of Christ; but his country, his age, his origin, and even his actual profession, are all uncertain. Some incidental expressions in his writings, indicate that he lived in the reigns of the emperors Augustus and Tiberius. He does not appear to have practised medicine, but only to have studied it as a branch of philosophy. But if he did practise, and if indeed born in Rome, he is the first native Roman physician whose name has been transmitted to us. Before his time, all who attained any degree of eminence, were either Greeks or Asiatics, and the native practitioners were either slaves or persons from the lower ranks of life, who acted in the subordinate branches of the profession. This was only in accordance with the views of the Romans who attached an idea of servility or degradation to the exercise of any art or profession for the sake of gain, and all their trades or manufactures were therefore carried on by slaves. Many individuals however, who were brought to Rome as slaves, made considerable acquirement in different departments of knowledge, and among others in that of Medicine. He was the author of many books,—on Medicine, Rhetoric, Agriculture and Military affairs,—all of which have been lost, except some fragments of a work on Rhetoric and his work on Medicine. This consists of eight chapters: (1), a brief history of the art, and of the regimen for different constitutions; (2), prognosis and diet; (3), dietetic treatment of disease; (4), treatment of partial diseases; (5), medicines and the diseases for which they are applicable; (6), the medicinal treatment of local diseases; (7), surgical operations; (8), bones, their diseases, fractures and dislocations. Hippocrates and Asclepiades are the authors whom Celsus chiefly follows. In his time three schools of medicine were in vogue, the empiric, dogmatic, and methodic, and all the medical practitioners of Greece and Rome and Alexandria were attached to one or other of the rival schools of medicine, the methodics or the empirics. Celsus, in the commencement of his treatise, has given a candid account of the leading opinions of the rival sects, and he treated all with impartiality. He draws the conclusion that the perfect rule of practice is derived from a due combination of

sson and experience; that without experience all pre-
aceived theory would be vain and useless; and that, by
nple experience, without any attempt at generalization,
should frequently fall into gross errors and be unable
profit even by the very experience which is so much ex-
ded. He advocated bleeding more frequently than Hippo-
ttes, discouraged excessive purgation and lowering of the
tem, and encouraged friction, baths, and fomentations.
e mode of operating for the stone described by Celsus was
gg advocated, and in France was followed so late as the
r 1700. His work also notices the operation for cata-
t with the needle, the two-fold operation for goitre by
stic and extirpation, tapping for dropsy, restoration of
prepuce in the circumcised; employment of the cathe-
; delivery, by the hand, of a dead child; the treatment
fractures and dislocations. His anatomical details show
wonderful amount of knowledge. It is the most valuable
k of the kind that the Romans have left us. It does not
ear to have become known to the Arabic writers nor to
hindus, although in Europe eighty-four editions of it
ve been printed and it has been translated into most of
western languages. The first printed edition of his eighth
pter, De Medicina, appeared in 1478 at Florence, but up
1785 more than 59 editions had been put forth and a
rto edition at Verona in 1810.

A. D. 9—79? **Aretæus**, supposed to be a Cappadocian,
medical practitioner of the reign of Vespasian. He wrote
eneral treatise on diseases, which is still extant. It dis-
ys great accuracy in the detail of symptoms and in seiz-
the diagnostic characters of diseases. It is one of the
st valuable relics of antiquity. He freely administered
ive purgatives. He did not object to narcotics and was
le averse to bleeding.

A. D. 23—79. **Pliny,** whose full name was Caius
nius Secundus, was the elder of two learned men, an uncle
l a nephew. He was of noble family, born about A. D. 23,
ner at Como or at Verona; and after distinguishing
nself in the field, and filling the office of Augur at Rome,
was appointed procurator of Spain. Though singularly
void of critical ability he was a voluminous writer. His
ole life was devoted with unparalleled perseverance
l labor to the acquisition of information and recording

it, but the only one of his works that have come down to us is on Natural History, a work of great compass and erudition which was written in Latin, but has been translated into French. It consists of 37 books, of which the eighth to the eleventh contain a system of Zoology and treat of beasts, fishes, birds and insects, and of human and comparative anatomy; the 12th to the 27th books are on botany, and give an account of trees, herbs, fruits, corn, &c., and the medicines which they furnish; the 28th to the 32nd books treat of medicine derived from different animals, but in his accounts of the plants and articles of the Materia Medica, he chiefly follows Theophrastus and Dioscorides, and such as are not described by these are almost entirely European plants. He was not a medical practitioner, and was even unfavorably disposed towards the profession, but in various parts of his great work he affords us much important information, both direct and indirect respecting the history of medicine in all its branches, and more particularly in all that concerns Materia Medica and Pharmacy. We learn from him that the prevailing practice in his time was empirical, consisting in the application of certain remedies for certain diseases, without any inquiry into the mode of their operation; also that the Materia Medica was extensive, and principally consisted of vegetable products, and these combined together, but without any relation to what we now regard as scientific principles either chemical or pharmaceutical. Pliny expressly mentions that for six hundred years Rome was without physicians. The attention of the Romans was directed to war, but from the remark of Pliny it is uncertain whether individuals were not specially trained to medicine or made it an object of direct pursuit. In medicine, as in every other subject connected with the arts of life, the Romans servilely copied from the Greeks, and wherever they deviated from that nation it was to introduce some gross superstition. Pliny mentions that Medicine was introduced into Rome at a late period than most of the other arts and sciences and that the practice of it had been expressly prohibited by the citizens and its professors banished. Any knowledge of the art seems to have remained in the hands of priests, and to have consisted principally in superstitious rites and ceremonies or it was practised by foreigners or slaves. It appears in

ld that the few individuals who devoted themselves to cultivation of natural science, among other subjects, ected their attention to medicine. It was not until clepiades of Bythinia appeared in Rome, about the ginning of the first century, that the medical profession s in any way represented. Pliny died A. D. 79. During olcanic eruption of Mount Vesuvius, he approached too r the flaming mountain, and while lying down was focated by the fumes. His nephew Pliny, author of the stles, took the name of his mother's family ; he was y precocious, a man of great accomplishments, a great tor, a patron of men of learning and an able statesman.
A. D. 63 ? **Pedacius,** or **Pedanius, Dioscori-**
s, a Greek physician, a native of Anazarbus in icia Campestris, who lived in the first and second tturies of the christian era and was probably a con-porary of Pliny, as in his preface he mentions inius Bassus, who was consul in A. D. 63. He haps studied at Tarsus. He was a physician by ffession. He is the most ancient author who has tten expressly—at the same time, he has done so most y—on Materia Medica. In his love for this branch travelled into many countries; he visited Alexandria the north of Africa, also Spain, France and Italy, and its investigation he followed the Roman armies. His rk is in five books, mostly on vegetable medicines. He careful in giving the synonymes of drugs and in cribing the physical properties with their medical uses, is particular in specifying the countries where they re severally produced. It is a work of great labor and earch, and for many ages it was received as a standard duction, and innumerable commentaries and criticims re written on it. Two other works are attributed to him, Alexipharmaca, treating on the poisons in the mineral, getable and animal kingdoms, and their antidotes ; an-er book called the Euporista, treats of remedies that easily procured. His books were published at Frank-t A. D. 1598, but a commentary by Matthiolus had peared at Venice A. D. 1565.
A. D. 100. **Caelius Aurelianus** lived in the first or second century of the christian era. The incorrectness his style, and the inaccuracies in the terms he uses,

show that he was not a native either of Greece or of Italy and he is supposed to have been a native of Numidia. He was a professed and zealous follower of the Methodic school. His descriptions of the phenomena of disease display considerable accuracy of observation and diagnostic sagacity, and he describes some diseases which are not to be met with in any other ancient author. His writings contributed in an especial manner to perfect the knowledge of therapeutics, by ascertaining with precision the proper indications of cure with the means best adapted for fulfilling them. He arranged diseases into the two great classes acute and chronic, nearly corresponding to the diseases of constriction and relaxation of Asclepiades. Like the Methodic sect to which he belonged, his great defect consisted in his placing far too great dependence on the two-fold division of diseases and not sufficiently attending to the minute shades by which they insensibly run into each other. This view led him to reject active and decisive remedies, general bleeding was rarely admitted, he seldom employed purgatives, he generally condemns the use of specifics, condemns narcotics, rejects caustics and all similar applications, and sparingly employs diuretics. His practice was decidedly defective, though it cannot be pronounced bad. Acute diseases were treated by topical bleeding, narcotic and oleaginous applications and abstinence; inflammatory diseases by abstinence, rest and frictions, and diet; exercise baths and frictions were adopted as preparatory treatment.

A. D. 130?—200?? **Marinus** was one of Galen's immediate predecessors. He enumerates seven pairs of cerebral nerves, of which he describes the optic nerve as the first. Quintus, a pupil of Marinus, wrote nothing, and was expelled from Rome for his unsuccessful treatment of a case. But Quintus was known through his pupil Lycus, the Macedonian, who treated of the muscles at great length and against whom Galen wrote.

A. D. 130—200-201? **Claudius Galenus,** in Europe generally known as Galen, and by the muhammadans as Jalenus, is one of the most celebrated of the ancient medical writers. He was born at Pergamus in Asia Minor about the autumn of A. D. 130. His father, Nicon, was an architect and geometrician, a good and learned man, from

om Galen received his first instruction : from the age of (A. D. 144-5) he began the study of philosophy and ic, under a pupil of Philopater the Stoic, under Caius the tonist, under a pupil of Aspasius the Peripatetic, and o under an Epicurean. His father's first intention was tt he should be a philosopher, but when 17 years old he se for him the profession of medicine. His anatomical l medical studies were commenced under Satyrus, a cele- ted anatomist, Stratonicus, a disciple of the Hippocratic ool, and Æschrion, a follower of the empirics. He lost father in his twentieth year, and he then went to Symrna study under Pelops the physician, and Albinus the tonic philosopher : subsequently he proceeded to Corinth attend the lectures of Numesianus, and he afterwards ited Alexandria, at that time the most famous school of dicine in the world, and at a later date visited Cilicia, œnicia, Palestine, Scyros, Crete and Cyprus : being pub- y invited he returned to his country, but at the age of he again repaired to Rome. His great anatomical know- ge made him famous, and he began a course of lectures ich, however, the jealousy of his contemporaries caused be discontinued, and he left Rome to travel. After a r he was invited to Aquileia by the emperors Marcus relius and Lucius Verus, A. D. 169, and it was about this e he wrote his Theriaca, taking his Materia Medica ost entirely from Dioscorides. He treated the errors of several schools of medical philosophy with no measured ttempt. The school founded by himself may be called Eclectic, because his doctrines had a mixture of the losophy of Plato, of the physics and logic of Aristotle, l the practical knowledge of Hippocrates. Anatomy s at all times his favorite pursuit, but his dissections re chiefly of apes and other animals, from which he was to form some erroneous conclusions regarding the man frame. After the example of Aristotle, and before of Plato in the Timæus, he admitted four elements, n the admixture of which he deduced secondary quali- . He held that the injurious influences to which animal ies are liable, are of two kinds,—innate or necessary and uired. The former depend on their original constitution. y are formed of two substances,—the blood, which is material, and the semen, the formative principle. These

are composed of the same general elements,—hot, cold, moist and dry, or to express them in their essences instead of their qualities,—fire, air, water and earth. Their differences depend on the proportions in which these elements enter into their composition. Health, he considered, consists in the perfect and harmonious admixture of these various elements, and disease depends on some disproportion in the constituent elements, or some unnatural condition of the organs. He divided the causes of disease into occasional and pre-disposing. The pre-disposing he considered to depend upon some degeneration of the humours called by him a putrefaction. Thus, the quotidian fever is referred by him to a putrefaction of the mucus; tertian to that of the yellow bile, and quartan to that of the black bile. It was upon this theory of the putrefaction of the humours that the practice of the humoural pathologists was founded and for centuries after the death of Galen the remedies were directed to the expulsion of the offending matter. He left few good descriptions of disease. He is said to have occasionally performed surgical operations, but while in Rome commonly refused to do this in compliance with the custom of the Roman physicians. The place and the year of his death are both undetermined. He was alive about A. D. 199; Abul Faraj says he died in Sicily, and Suidas says he was then 70 years old, which would make A. D. 200 or 201 the year of his demise, but some writers suppose he lived several years longer. His theory of the four elements, the four humours, and the four qualities, connected in all the variety of combinations, presented a specious appearance of method and arrangement which took such firm possession of the mind as to preclude all inquiry into the validity of the foundation, and to present us with one of the most remarkable examples of the most complete prostration of the understanding in a physical science where facts were closely obtruding themselves upon observation but were either unnoticed or totally disregarded. In numberless instances it was deemed a sufficient argument, not merely against a hypothesis, but even against an alleged matter of fact, that it was contrary to the opinion of Galen. For a long time, after his death, physicians were chiefly occupied in commenting on his works and imitating, as closely as they could, his practice. His writings were regarded as ultimate

thority, and everything that seemed opposed to them ss at once rejected. From his time till the rise of the abs in the 7th century, no one of note appeared, and all earlier Arabian works on medicine as well as those of an in the 8th century, and of Serapion in the 9th century little more than transcripts of those of Galen. The bounded influence exercised by this great man through- Europe and among the Arabs, unquestionably contri- ed to retard the progress of medicine, until finally in the h century (A. D. 1526) his works were publicly burned Basel along with those of Avicenna, by Paracelsus, who s there in his first year as professor of anatomy and ural philosophy. The next great blow to the general ef in Galen was given by Andreas Vesalius in a series severe, even virulent, attacks on the descriptions and trines of Galen and his followers, several of whom iliated with hostility and opposition equally virulent. salius, however, wrote De radicis Chinæ usu Epistola, el, folio 1546, in which he attacked Galen with more ulence than ever, proving by numerous examples that en's descriptions must have been drawn from the dissec- s of monkeys and other animals, and very often taken n the works of his predecessors without any dissection ll. His earliest followers had been his contemporary tus Empericus, a man of learning and talents; Orobasius, lived in the fourth century, Aetius in the fifth, Alex- er Trallianus and Paulus in the sixth, were all zealous enists. Aetius gave an account of some surgical operations, Paulus, who died in the middle of the 7th century, was the of the Greek school of medicine who wrote on midwifery. ater times Eustachius, Fallopius, and others maintained accuracy of Galen's anatomical descriptions, but the rectness of the writings of Vesalius was ultimately blished. The contest between the Galenists and the che- ts agitated the whole European world during the 15th 16th centuries. Galen was a voluminous writer, and of his treatises are still extant, but 160 have been lost. also wrote commentaries on the dialectics of the poet ysippus. Five Latin editions of his works were lished before the Greek text. The chief of Galen's ical treatises were entitled "On the use of the parts he body, in seventeen books: On the matter of

the muscles: On the formation of the fœtus: On temperaments; On the seat of disease; On the varieties of the pulse; On the differences and the causes of disease: On the method of cure. But the most valuable of his writings, and those in which he actually rendered the greatest service to science, are his treatises on physiology. His fame can only perish with the science of medicine itself, but modern improvements have consigned his writings to neglect throughout all the schools of Europe and America. The muhammadans, however, who still study from the Arabic, retain all the old faith in Galen; Avicenna largely followed Galen: Ala ud Din Ali bin Abul Hazim ul Koreshi ibn Nafis, who died A. D. 1288, wrote an epitome of the Canons of Avicenna styling it Mujiz ul Kanun fi't Tibb. Subsequently, Nafiz bin Iwaz, who resided at the Court of Ulugh Beg about the middle of the fifteenth century, annotated on the Mujiz ul Kanun, designating his book Hull-i-Mujiz ul Kanun; and Sadid ud Din of Gazerun, in a work styled Al-Moghni fi Sharah ul Mujiz, wrote a commentary on the Mujiz of Ala ud Din Ali bin Abu'l-Hazim ul Koreshi, being a compendium of the science of Physic, compiled from the works of Hippocrates, Galen, Avicenna, Honain, Al Razi, and others and Abul Fazl bin Ibrahim of Tabriz wrote the Mukhtasar-i-Jalinus, an abridgment of the works of Galen.

A. D. 350? ? **Orobasius,** a zealous follower of Galen was born at Pergamus, but is commonly called of Sardes probably because he studied there. He was the countryman and copyist of Galen, of whose Materia Medica as well as that of Dioscorides, he has given an alphabetical epitome arranged under the heads of minerals, plants, and animals. Orobasius was the friend of the emperor Julian. He wrote a compendium of the medical and anatomical knowledge scattered throughout the works of previous writers, especially Galen. The anatomical part of this compendium particularly deserves attention, more especially in what relates to the eye. Orobasius avoided all notice of operations and their treatment, preferring to leave the treatment of fractures and luxations to those who instruct boys in the exercises and direct the training of athletics. He wrote, however, a separate treatise on bandages and apparatus.

A. D. 531?—579? **Barzuyah,** a learned physician who had made more than one journey to India, but in the

ign of Nousherwan, king of Persia, made two special rneys; the first time, to procure medicines and parti-larly herbs, but on the second occasion to collect copies the writings of the hindus. On his return from the st, he, or a learned man named Buzurjmeher (they seem have been the same) translated into Persian all the nskrit works he had obtained.

A. D. 650? ? **Paulus of Ægina,** often designated the Latin termination Paulus Ægineta, a great traveller o lived in the seventh century both at Rome and Alexan-ia. He was a warm supporter of the views of Galen. He cote a medical work, in which he treated particularly on e diseases of women, and in his sixth book gives, even compared with Celsus, the most perfect account of rgery as it stood in the time of the ancients. He scribes how to extract darts and arrows, notices a aster, and a collyrium from India, was the first to de-ribe the internal use of steel, and to mention rhubarb and ves. He has been esteemed the most eminent sur-cal writer amongst the ancients. He wrote copiously on seases of the eye, and in a separate part of the same rk wrote on ophthalmic surgery. He describes the same eration for staphyloma as Aetius; his operation for catar-t is essentially the same as that described by Celsus; his eration for ægilope is much the same as that of Celsus. He s the last of the European writers of the Greek school medicine. A long time of turmoil followed, during which Europe was sunk in such ignorance that the interval m this time till the revival of learning has been appropri-ly termed the dark ages. The only remains of learning re found amongst the Arab races who spread over Southern ia, along the Northern parts of Africa, and into Spain.

A. D. 650?—683? **Aaron,** the Presbyter, lived at Alex-dria at a date subsequent to the era of the Hegira. wrote, in Syriac, the Pandects or Digests of Medicine, ich contained the first description of the small-pox. It s translated into Arabic A. D. 683 by Masarjawaihas? ?

A. D. 713—833. **Abbassi** or **Abbassides,** an Arab nasty who ruled as khalifs from A. D. 749 to 1259. bbas-ibn-Abid-ul-Mutalib was a paternal uncle of Muham-ad. In A. D. 750, one of his descendants overthrew the t Ummiad khalif and succeeded to the khalifat at Kufa,

under the designation of Us-Saffah, the blood-shedder. Hi
successor Al-Mansur, the second khalif of the house of Abba
was born at Homaima in Syria A. D. 713. He succeede
his brother Us-Saffah A. D. 753. During his reign he lai
the foundation of the town of Baghdad, he establishe
schools of medicine and law, he gave much of his time t
the study and advancement of astronomy, translations we
commenced of the works of the ancient Greek writers o
metaphysics, mathematics, astronomy and medicine, an
the first known lunatic asylum is said to have been esta
lished by him. He died A. D. 776. His grandson wa
Harun-ur-Rashid, known throughout the world for h
valour, his love of justice, his zeal for literature and t
arts, and his encouragement of commerce. He ruled fro
A. D. 786 till A. D. 808. He placed all public scho
under John Mesue, a Nestorian Christian: Manik an
Saleh, two hindu medical men, were at the court of Haru
ur-Rashid, as his personal physicians; and Manik translat
into Persian from the Sanskrit a treatise on poisons. U
Mamun his son, after a brief contest, succeeded to t
khalifat, and the 20 years of his reign from A. D. 813 to 8
formed an important epoch in the history of science a
literature. He founded colleges and libraries at Baghd
Kufa, Basra, and Nesabur. He built observatories; Syri
physicians and hindu mathematicians and astronomers liv
at his court, and works on astronomy, mathematics, me
physics, natural philosophy and medicine were translated i
Arabic from the Sanskrit and from the Greek. The br
period of 47 years of the reigns of Harun-ur-Rashid and
son Ul-Mamun, was a period of great prosperity, but that
Ul-Mamun was the Augustan age. During the khalifat
Makhtadar (A. H. 319, A. D. 931), in consequence of
patient having been killed by an ignorant practitioner, a l
was passed that no one should be allowed to practise medic
until he had been licensed to do so by the chief physici

The Arabs were avowed borrowers in science. Th
were chiefly indebted to the hindus and the Greeks, b
they are entitled to the gratitude of the world for havi
kept alive and diffused the light of letters, and for havi
formed a connecting link with classical antiquity duri
an age when science and art and literature in Europe
buried under ignorance and barbarism.

The practice so largely followed in the time of the Abbassi halifs of translating and writing commentaries on the works previous authors was, however, injurious to originality progress, and it is now difficult to distinguish what are e authors', and what the commentators' parts. An in-ance of this may be given in the history of a medical ook written by Najb-ud-Din Muhammad Umar of Samar-and, who wrote in Arabic the Asbāb-wa-Ilāmăt, a very lebrated treatise on the causes, signs and remedies of seases. Subsequently Nafis-bin-Iwaz wrote a commen-ry on it in Arabic, which he styled Shărh-ul-Asbāb-wa-āmăt and dedicated it to Timur's grandson Mirza Mū-ímmăd Targai, generally known as Ulugh Beg (born 394, killed 1449), and in the reign of the emperor Au-ngzeb, his physician, the hakim Muhăммăd Akbar rzāni, translated the Arabic Shărh-ul-Asbāb into Persian, signated it the Tibb-i-Akbari and dedicated it to Aurung-b (born 1618, died 1707), and Avicenna's works have en similarly dealt with. The world is, however, largely debted to the Arab conquerors. They spread into Southern sia, along the northern shores of Africa, and over Spain; uring the long interval from the 8th to the 12th centuries, hen Europe was in a state of the most complete barbarism d superstition, the only remains of a taste for liter-ure and science, or for the fine arts, were left with the rab races of Baghdad, and under the Moorish dynasties in ain: it was from these sources, through the intervention the Crusaders, that the philosophical and medical writ-gs of the Greeks were again made known to the inhabi-nts of Italy and France. They brought with them veral new articles of the Materia Medica from the vege-ble products of Eastern and Southern Asia, and gave e original descriptions of certain diseases. Rhubarb, marind, cassia, manna, senna, camphor, various gums d resins, and a number of aromatics were then made own, along with what were styled chemical remedies, oduced by various chemical processes during which many ides and salts were produced. This was the commence-ent of pharmaceutical chemistry. The Arabic writers ere Jews, Christians and Muhammadans, natives of Syria, ain and Central Asia; and the world is indebted to them the preservation and transmission of the works of the

ancient Greek physicians, to which they made certain additions of insulated facts with respect to the description of diseases, and especially contagious ailments. But with respect to the general principles of therapeutics, there were few if any additions. In anatomy they made no advance and there is reason to suppose that they never examined the bodies of the dead. Albucasa? or Albucasis? an Arabian physician of the 11th century, made some improvements in surgery, but even this branch of the healing art seems to have retrograded. It was in the department of pharmacy alone that they made any permanent improvement, and for that the world is indebted to them. The acquaintance of the Arabs with chemical manipulation grew with many into a desire to discover the philosopher's stone which would convert ordinary metals into gold and cure all diseases. In Europe, between the 12th and the 14th centuries Albertus Magnus, Bishop of Ratisbon; Raymond Lilly, a Spanish ecclesiastic; Arnoldus of Villanova a professor in the University of Barcelona; Roger Bacon and Basil Valentine, were all thus engaged, and this led to some pharmaceutical discoveries, and the introduction into medicine of preparations of mercury and antimony.

A.D. 753? **George ibn Bactishua,** a native of Khorasan. When Sapor II, king of Persia, married the daughter of the Roman emperor Aurelian, Greek physicians accompanied the royal bride, and Sapor, in her honor, founded the city of Nesabur or Jondisabur which became celebrated as a Medical School. George ibn Bactishua was educated there. He was celebrated for his skill in Medicine and for his proficiency in the Persian and Arabic languages. He was sent to the khalif Ul-Mansur, and translated at his request several books on Medicine. His son Gabriel was physician to Harun-ur-Rashid.

A. D. 813? **John Mesue,** a learned man of Damascus. There were, however, two of the name of Mesue, both of them Nestorian christians who practised at Baghdad. John, the elder, lived in the 8th and 9th, and the younger in the tenth century. Ul-Mamun, while governor of Khorasan, had gathered around him there learned men from all countries, and formed them into a collegiate body, over which John Mesue presided; and on succeeding to the khalifat on the demise of his father Harun-ur-Rashid, he

ployed them in translating the works of Aristotle, clid, Ptolemy, Hippocrates and Dioscorides. During these reigns, Grecian science and a knowledge of the healing as had been taught in Europe were made known to t part of the eastern world. John Mesue wrote several rks, which have disappeared; but he was the first who le correct translations from the Greek physicians, and ecially of Hippocrates and Galen into Arabic. The nger Mesue wrote a treatise on Materia Medica and armacy, which for a long time was held in great estima-n, and was republished and commented upon even so as the 16th century: he mentioned several new re-dies, and was doubtless in advance of the knowledge the day.

A. D. 870 ?—932. **John Serapion,** known to his temporaries as Yahia-ibn-Serapion-bin-Ibrahim, was a rian physician, said to have been a native of Damascus, seems to have lived between A. D. 870 ?—932 ? He ected all that had been written by the Greek and Arabian sicians on the treatment of diseases, and completed, Syriac, a treatise drawn from his predecessors and parti-arly from Galen, a complete view of the Greek system of dicine, incorporating with it the principles and practice of the Arabs. He improved the prepara-n and composition of medicines and the articles in use. is often mentioned by Rhazes in his "Continens," and Abbas finds fault with his brevity in his notice of all-pox. Two works bearing his name were translated Latin and published in Venice in A. D. 1497 and in in 1550. Dr. Sprengel, in his History of Medicine, noticed his opinions.

A. D.—?—923 or 932. **Rhazes** or **Razes,** as known Western Europe, was a famous physician of Turkish bia, his proper name being Muhammad bin Zakaria n Baqr ur Razi. He was born and brought up at Rai rak Ajămi, now designated Turkish Arabia. He ac-red great philological and philosophical knowledge, but il he was 30 years old he was chiefly known as a sician, accompanying himself to the guitar. After his h year he applied himself exclusively to the study of dicine and philosophy, and he studied under Ibn Zain Tabari at Baghdad. He travelled to Jerusalem and

Africa, and it is said also to Spain. He became the medical superintendent of a hospital at Rai, and subsequently of one at Baghdad. His works were more than two hundred, the most celebrated being on small-pox and on measles. Under the designation "Kitab ul Mansuri," he dedicated ten books to Mansur, a prince of Khorasan, nephew of khalif Mohtafi, on anatomy, physiology, temperaments, diet and regimen, the preservation of health, surgery, poisons, the cure of diseases and fevers. These were chiefly compilations from the writings of Galen, Orobasius, Paulus Æginetа and Aëtius, but they contain also original observations and descriptions of diseases either newly appearing or not before described. His anatomy was principally derived from Galen. He gives a correct description of small-pox and measles, with a clear and distinct account of the symptoms and treatment of small-pox. Aaron however was the first to write on the small-pox. The most important additions made by him to existing knowledge, were however rather in surgery and pharmacy than in medicine, but he gives some of the earliest notices of existing drugs. He died A. D. 923 or 932 at Rai or at Baghdad; all his works had been published in folio in A. D. 1516, and were translated into English by Dr. Meade in A. D. 1747. It was about his time, between A. D. 905—920, that the first medical college in Europe was founded by the Saracens at Salerno in Italy. This university, probably the most ancient in Europe, was, in 1817, replaced by the Lyceum. The first astronomical observatory was that erected by the Saracens at Seville in Spain.

A. D. 880? **Honain bin Ishaq,** a native of Hira, lived in the ninth century. He was of the christian religion but is the most ancient of the Arabian medical writers. After travelling in Greece and Persia, he settled in Baghdad, where he translated into Arabic the elements of Euclid, the Almagest of Ptolemy, the works of Hippocrates and those of Aristotle. The tradition is that for every book of Aristotle translated, he received its weight in gold. He appears also to have commented on some of the works of Galen, and it is even said that he gave lectures on anatomy. Among the titles of his treatises we find one "On the Eyes" and another on sleep and vision.

000? **Ali Abbas,** styled Magus, a native of Persia, of
ssiderable celebrity, who lived shortly after Rhazes. His
ncipal work, at the time, was very highly esteemed, and
yy be considered to have possessed more real value than
sst of the writings that proceeded from the Arabian school.
was translated into Latin under the title "Opus Regium."
consists chiefly of abstracts of the doctrines and opinions
the Greek physicians, with some original observations.
A. D.—?—942. **Senan,** whose full designation was
u Said Senan-bin-Sabit-bin-Korrah, was a Sabian physi-
n, astronomer and mathematician. He was born at
rran in Mesopotamia, and died at Baghdad A. D. 942.
s father and his brother were among the most celebrated
ysicians of their time, and Senan was physician to
khtasar, and Kahar, the 18th and 19th of the Abbasside
lifs who reigned from A. D. 908-934. Mukhtasar
e him the title of Rais ul Ataba, or Chief Physi-
n, and he was appointed public examiner, A. D. 931,
one being allowed to practise until licensed by Senan.
s is the first mention of legislative licensing, and the
nber of persons in Baghdad who underwent the exami-
ion are said have been 830. Under pressure from Kahar,
mbraced muhammadanism, but as Kahar continued to
t him harshly he fled to Khorasan, though he afterwards
urned to Baghdad, where he died.
A. D. 980—1037. **Avicenna:** the full appellation
this learned physician was Abu Ali-ul-Hussain-ibn-
d-Ullah-ibn-Sina, but he was known to the Arabian
tors as us-Shaikh, also ur-Rais-ul-Ataba, literally, the
f, and the prince of physicians. He was born A. D. 980
Kharmatain (also as said at Assena), a village near Bok-
a, and was educated at Bokhara. He studied under Abu
d-Ullah-un-Natheli. He was eminent as a philosopher
as a physician and his name ruled in the realm of medical
nce for a longer period than that of any other writer
ept Aristotle and Galen. In his 21st year he wrote a
k which he called Al-Kitab-al-Majma, a Cyclopædia of
volumes, and he subsequently wrote a commentary of it,
ch also extended to 20 volumes. In the beginning of the
1 century, the Samanide dynasty fell, on which Avi-
na quitted Bokhara; for a short time he was employed
the court of the Dilimite sovereign, but in 1012 retired

to Jorjan, where he began to write his celebrated treatise on the principles of medicine styled Kitab-ul-Qanun fi't Tibb, &c., or Book on the Principles of Medicine. He subsequently lived for a short time at Rai, Kazwin, Hamadan, and Ispahan. Ibn Khalican states that his books and treatises numbered about 100. The Qanun was the most celebrated and is well-known in Europe under the title of the Canons of Avicenna. It contains five books, viz.: (1), on the theory and practice of medicine; (2), on the properties of simple medicines; (3), on anatomy and local diseases; (4), on diseases generally; and (5), on compounded medicines. Hi books were printed in Arabic at Rome A. D. 1497, but more than one Latin version has appeared, the latest being tha of Vopucius Fortunatus, A. D. 1651. The Qanun was firs printed at Rome 1595: it was translated into Latin an published at Venice, 1608; and it became even in Europ for many centuries the most celebrated authority in medi cal science, chiefly on account of its judicious arrangemen and of the comprehensive view it afforded of the opinion of the ancient Greek physicians. Several editions of th Qanun have appeared. His other works are about 100 i number, amongst them Us-Shafa, Shafa fi'l-Hikmat, Naja and Isharat. He died while on a journey at Hamada A. D. 1037 at the comparatively early age of 57.

Avicenna introduced in his works many anatomical error chiefly by mixing up the crude notions of older authors wit those of Galen. In his writings, however, there first appea a notice of the duct from the eye to the nose, and also of constriction of the pupil being a cause of defective visio In his writings the object of Avicenna seems to have bee to collect matter from all quarters, and they may be regarde as recording all that was then known of medicine, and the sciences connected with it, anatomy, surgery, therape tics and botany. The Qanun doubtless supplied a gre want, and earned for its author the literary title Rais-ul Ataba, or Prince of Physicians. Much of it, ho ever, is valueless and much ill-digested. Neither Avicen nor Mesue, nor Albucasis, contributed anything of impo tance to the progress of medicine, and the reputation Avicenna seems to have been earned by contrast with h contemporaries. So little true progress was made duri the dark ages, that for several centuries the Qanun w

received text-book in most of the medical schools both
ne Arabians and Europeans, until the revival of learning
Europe. It superseded in a great measure the works even
Galen, of whom and of Aristotle he was a devoted
irer: it produced numerous commentaries and epi-
es, and had not entirely lost its authority in Europe
the 17th century, and it continues up to the present
to be used as a standard-book in all the countries where
bic is known. It has also had learned annotators and
mentators, whose books are in esteem. Ala ud Din Ali
Abul Hazim ul Koreshi ibn Nafis, who died A. D. 1288,
te in Arabic an epitome of the Qanun of Aviceuna, which
styled Mujiz ul Qanun fi't Tibb, and subsequently, about
D. 1430, Nafis bin Iwaz who resided at the court of
mur's grandson Ulugh Beg, wrote in Arabic the Hull-i-
jiiz-ul-Qanun, a book of annotations on the commentary
Ala ud Din Ali, and again the Sharh Nafisi, a commen-
on his own annotations. Subsequently Sadid ud Din
eruni wrote Ul-Moghni fi Sharh ul-Mujiz, a commen-
on the Mujiz of Ala ud Din Ali, but in which was
prised a compendium of medical science compiled
n the works of Hippocrates, Galen, Avicenna, Honain,
Razi and others.

(050? **Albucasa** or **Albucasis,** a Spanish physician
) wrote several treatises which are still extant. He
d in the eleventh century. He notices his treatment for
hiasis, fistula lachrymalis, and anchylo-blepharon, and
tions that persons who had come from Cairo (Al-
mirah) were practising extraction of the cataract.

A. D. 1072-3—1162 and 1114—1199. **Avanzoar**, pro-
y Ibn Zohar, the name of two distinguished Arabian
sicians, father and son, who flourished in Spain during
12th century. They were Jews by descent and pro-
ion. The father was born at Seville about A. D. 1072-3,
died there A. D. 1162. He was physician at the court
Cordova, and had charge of an hospital. He wrote
eral medical works in Arabic, some of which were
dered into Hebrew and into Latin. The celebrated
k of the father, designated the Tasir, is one of the most
uable books of the Arabian physicians. It contained a
pendium of medical practice, including many facts and
ervations not found in preceding writers. He also wrote

on calculus and on regimen. He did less to add to the theories than to improve the practice of medicine, and he was a declared enemy of sophisms and dialectic subtleties. He trusted largely to his experience. He was the teacher of Averrhoes. His writings are among the few of the Arabian books that exhibit even slight departure from the doctrines of Galen. The Tasir displays more originality and discrimination than others of the Arabic writings. He practised both surgery and pharmacy as well as medicine properly so called. Although professedly a disciple of Galen, he does not hesitate to shake off his authority when his opinions or practice were not sanctioned by his own experience. Avanzoar was respectable from his general character and his professional skill, and is entitled to our regard as one of the improvers of his art.

His son (A. D. 1114—1199) also wrote several medical works, amongst them, one on diseases of the eye. He died at Morocco 1199.

1080? **Constantinus Africanus,** a native of Africa who studied in the schools of Baghdad, and is said to have travelled in India. He returned to his native country from which, however, to save his life, on being accused of sorcery he was soon compelled to flee to Monte Cossino in Italy. He employed himself there in translating into Arabic, then the general language of science, the works of the Greek and Latin authors. His writings are extant, but there is little original matter in them. What he says of ocular medicine and surgery is drawn principally from Paulus Ægenita.

A. D. 1149—1198. **Averrhoes,** known to his contemporaries as Abul Wahid Muhammad-ibn-Ahmad-ibn-Muhammad-ibn-Rashid, a philosopher and physician of great eminence, was born at Cordova about A. D. 1149 of illustrious parentage. He studied under Avanzoar, by others of the most distinguished Arabian scholars of the age are also mentioned as his teachers, and his education extended to all the branches both of literature and science as then taught in the Saracenic colleges of Spain. He was a scholar who pursued the study of medicine as a branch of physical science. As a philosopher he was a zealous follower and enthusiastic admirer of Aristotle: in medicine, he followed the views of Galen, and he published many commentaries on both their writings. His treatise

in number, acquired the highest reputation, and for
ny ages were considered standard performances. His
tomy was drawn from Avicenna. His medical works
e gathered together as the "Kulliat," meaning liter-
"The Complete Works," were translated into Latin,
have been repeatedly printed along with the Tasir
Avanzoar, one of them reappearing so late as the
mencement of the 17th century. Nevertheless, his
dical opinions have not left a single permanent addition
the science, and are now entirely neglected. As a
losopher, he followed largely Aristotle's system of rea-
ing by induction, but carrying the mode of reasoning
hat great man into the religious doctrines of muham-
danism, he became obnoxious to his contemporaries,
ame once or twice the victim of persecution, and was
pelled to avow a change in his opinions. He wrote an
ome of Ptolemy's Almagest and a treatise on Astrology.
died A. D. 1198, and with him terminated the Sarace-
or Moorish writers on medicine.

1131—**Maimonides,** called by the Jews the Eagle of
Doctors, was born in 1131 or 1133 at Cordova in Spain, of
illustrious family. His proper name was Musa bin Mai-
n. He studied philosophy and medicine under Averr-
s. He settled at Cairo, where he opened a school to
ch numerous pupils came from Greece and Alexandria.
was learned in Arabic, Hebrew, Chaldee and Turkish.
was a voluminous writer on theology.

1150? **Actuarius,** a servant of the Court of Constanti-
le, lived in the 12th century. He was a diligent col-
or of facts, acquainted with all the information of his
and more free from prejudice and bigotry than the
erality of his contemporaries. He left numerous works,
isting principally of extracts from Galen and the Ara-
physicians.

... D. 1226—1286. **Gregory Abul Faragius,**
monly designated Abul-Farag, but properly Mar Gre-
us Abul-Faraj, also called Gregorius Bar-Hæbreus,
of the Armenian race, born A. D. 1226 at Malatia, or
ite, a town near the western bank of the Euphrates in
ser Asia. His father Aaron was a physician. Abul-
ag studied theology, philosophy, and medicine, and
ed the greater part of his life in Syria. He adopted

christianity and rose successively to be Bishop of Guba Bishop of Aleppo, and in 1266 Primate of all the Jacobite Christians in the East. He was the author of a great number of works, which he wrote in the Arabic and Syriac languages ; but the best known is his history of the dynas ties from the Hebrew Patriarchs to the Moghuls, which Dr Pococke published in 1663 with a Latin translation and supplement. He died in A. D. 1286 at Meragba in Azerbijan.

A. D. 1200 ? **Babhata,** a hindu physician, who com piled a medical work principally from the writings o Charaka and Susruta. He named it Asht-anga Hirudayam His manner of treating the subjects and the arrangement are much the same as that followed by Charaka. It i written in a clear style, and Babhata explains passages i the original works which were not before understood. Thi seems to be the same person spoken of by Professor Royl under the name of Ub'hatta, a native of Kashmir, as havin written a commentary on Charaka. His era is not known but is probably of the 12th or 13th century.

? **Najab-ud-Din Muhammad Umar,** of Samar kand, whose era is not precisely known, wrote the Asba wa Ilāmăt, a very celebrated treatise in Arabic, o the causes, signs and remedies of disease. A commentar of it, also in Arabic, entitled Sharh-ul-Asbab wa Ilāmă was made by Nafis-bin-Iwaz and dedicated to Timur' grandson, sultan Ulugh Beg, who ruled at Samarkan from his early youth up to A. D. 1447, when he succeede to the throne of his father Shah Rukh. A translation i Persian of the Sharh-ul-Asbab was made by Muhamma Akbar-Arzani, physician to the emperor Aurungzeb, (A. D 1658—1707) to whom it was dedicated. The translatio is named the Tibb-i-Akbari.

A. D. 12—?—13—? **Lanfranc,** a general practitione of the 13th and 14th centuries, who did much to unite th practice of medicine and surgery. He was a native o Milan, where he studied medicine and surgery unde William de Saliceto ; he practised there for a short time but ultimately left it to escape persecution, and he visite Lyons and other French towns, but finally (1295) settle at Paris. He found surgery very greatly neglected, and h highly blamed physicians for abandoning it to barbers an

men. He always bled his patients with his own hands. regarded Physicus to mean a physician proper; Me- us, a physician-surgeon or general practitioner; and icus or Chirurgus Barberius, a barber surgeon. After arrival in Paris, on the invitation of many Masters l Bachelors in Medicine, he gave lectures on surgery l demonstrations. He left behind him two books, "Chirurgica Parva," also "Ars Completa totius irurgiæ sive Practica Major Libri quinque," which were nted in folio at Venice in 1490, 1498, 1519, and 1546, l at Lyons in 1553. In 1488 the Complete Art of Sur- ry was translated into French by John Gallant, Master rber of Paris, and again in 1490 by William Issoire at ons.

A. D. 12—?—13—? **Mondini di Luzzi,** a professor the University of Bologna, who, on the revival of learning Europe, made himself of mark by first publicly in 1315 secting two corpses. Anatomy is a part of natural tory, and forms one of the most important branches of dical science. A knowledge of it is indispensable for complete education of a physician and surgeon, and the liest intimation we have of any medical men examining by section the structure of the human body, is in the writings Charaka and Susruta, two physicians of the hindus, who m to have lived about 1000 years before the christian . Charaka and other ancient physicians say that a ctitioner should know all parts of the body, both ernal and internal, and their relative positions with ard to one another; without such a knowledge, he not be a proper practitioner. Susruta says a jogi should sect, in order that he may know the different parts of the man body; and a surgeon and physician should not only ow the external appearances, but also the internal struc- e of the body, in order to possess an intimate knowledge the diseases to which it is liable, and to perform surgical rations so as to avoid the vital parts; and it is, he says, by bining a knowledge of books with practical dissection t the practitioner will alone attain an intimate knowledge he subject of his profession. The ancient Egyptians, vever, held in abhorrence all who dissected the human body. o, anatomy could not be studied by the Greeks, from their erence for the dead, and their religious views necessitating

early interment, and in the time of Hippocrates, though the structure of the human skeleton was known, any anatomical knowledge existing is supposed to have been obtained by the dissection of animals. In the school of Alexandria, under the patronage of the first of the Ptolemies, anatomy was carefully studied by Herophilus of Chalcedon, B. C. 300, and his contemporary Erasistratus of Chios. Herophilus made many important discoveries as to the anatomy of the brain, the functions of the nerves, and the blood-vessels of the mesentery which go to the liver, &c., and has given his name to the Torcular Herophili in the brain; while Erasistratus of Chios determined many facts in the anatomy of the brain and gave his name to the valves in the vena cava. These two anatomists were nigh to discovering the circulation of the blood, which nearly two thousand years afterwards Harvey saw and became immortal. From the time of Herophilus and Erasistratus, however, for the next fifteen hundred years, anatomy made no advance. Galen, indeed (A. D. 131) collected all the anatomical knowledge of the earlier physicians and of his contemporaries, but his own acquaintance with this branch of science was derived from his examinations of the bodies of the lower animals, such as monkeys, &c., though he applied his observations on them to the structure of the human body. The Arab physicians of the seventh to the thirteenth centuries wholly abstained from anatomical investigations and took from the Greeks and particularly from Galen, their knowledge of this part of natural science. The credit of the recommencement of the study of anatomy is due to Mondini who, in 1315, dissected two corpses, and wrote a description of the human body which, though containing many errors, obtained a high reputation, was for another hundred years the common compendium of anatomy in use, and for three hundred years was used as a text-book in the most celebrated of the Italian schools. He gave a very early, if not the first, example of anatomical plates, some of which were lost, but those extant show a high degree of accuracy. From his time, however, it became customary in all Universities to make public dissections once or twice a year, with a view to illustrate the writings of Galen and the Compendium of Mondini. But of all the learned men of Italy, Montagnana, professor at Padua in the 15th century, alone could boast of having

rformed fourteen dissections, and that was considered a eat number. In the 16th century, Fallopia, Eustachi, esal, Varol, and many others, enriched anatomy with eir discoveries. In the 17th century, Harvey discovered e circulation of the blood, Worsung the pancreatic ducts, d Schneider the mucous membrane. In the 18th century, acchioni, Valsalva, Keil, Lancisi, Ruysch, Haller, Boer-ave, Vicq d' Azir and others distinguished themselves anatomists, and Meckel, Soemmering, Loder, Bichat, d Rosenmuller became renowned in later times.

1460—1524. **Thomas Linacre,** or **Lynacer,** one the most distinguished physicians of his age, was born at anterbury about A. D. 1460. After his school educa-on in his native place, he went to Oxford, and afterwards udied at Bologna and Florence, where he made an tensive acquaintance with Greek and Latin authors. hile at Florence, Lorenzo de Medici allowed him to be ught by the tutor of his own son, and he acquired a orough knowledge of Greek from Demetrius Chalcondyles, native of Greece, who had fled to Italy on the capture Constantinople by the Turks. He took the degree of . D. at Padua, and again at Oxford, where he gave lec-res on medicine and on Greek. King Henry VII called m to court, and entrusted to him the care of the health d education of Prince Arthur. In the reign of Henry III, Linacre stood at the head of his profession in ngland, and showed his attachment to it by founding o lectures on Physic, one at Oxford university and one at ambridge. In 1518 he obtained from King Henry VIII tters patent constituting a body corporate of regularly ed physicians in London, with the sole right to examine d admit persons to practise within the city and seven iles around it, and also of licensing practitioners through-t the whole kingdom; excepting only graduates of Oxford Cambridge. He was thus the founder of the College of hysicians in London. He was one of the first, in conjunction ith Colet, Lily, Grocyn and Latimer, who introduced classi-l learning into England. Between the years 1499 and 1524 translated into Latin several of the best pieces of Galen; s De Temperamentis, 4to, Cambridge 1521, was the first ook printed in England with types of Greek character. He ed on the 20th October 1524 of stone in the bladder.

A. D. 1511—1581. **John Philip Ingrassia,** a native of Sicily, who lived through the chief part of the 16th century, first at Naples and afterwards at Palermo, discovered the true origin of the ophthalmic artery, and recognized the passage from the eye to the nose. In 1575, he delivered his country from the fury of the plague. He wrote Veterinaria Medicina, Venice 1568, and other works.

A. D. 1500? **Li-shi-chin.** The old medical writers of China were the naturalists of their times, and that country had a long line of imperial, princely and magisterial observers in medical matters, the ancient Shin-nung, Hwang-ti, Chi-peh, Lu-pien, Li-tang-chi, Hwa-to, Wang-shuh, and Li-shi-chin. Li-shi-chin was a district magistrate, who was born at the town of K'i-Chau, on the right bank of the Yang-tsze river. Up to his time there had been published thirty-nine books on Materia Medica, containing the observations of some eight hundred authors, beginning with the mythical emperor Shin-nung. Li-shi-chin re-arranged the 1518 drugs recommended by those writers, adding 374 new remedies of his own suggestion. Of 251 of these substances, the nature and uses are not thoroughly understood. He named his book Pen-ts'-au-Kang-Muh; it was arranged in 52 chapters, and contained 11,896 formulæ. On the death of the author, his son presented his father's book to the Ming emperor Wan-leh, and it was published about 1597. It was the work of his father's life, occupying him forty years and, as its name designates it, is a synopsis of ancient herbals. 1,096 of the 1,518 drugs described in it belonging to the vegetable kingdom. These substances are arranged in 62 great classes, under the sixteen orders, water, fire, earths, minerals and metals, herbs, grain and pulse, vegetables, fruits, trees, garments and utensils, insects, scaly animals, mailed and shelly creatures, birds, beasts and man. Some of these divisions contain non-conformable genera, but this early attempt at classification has been favorably noticed by Remusat. One of the first great classes are formed of the five elements, or factors, which, according to Chinese philosophy, enter into the composition of all things. Under each of the substances, about 1,641 in number, the synonymes are collated and corrected, and their names explained as to their origin, sound and sense. Sanskrit,

ngusic and other synonymes are often given in the form Chinese transliterations of great interest, as representing languages and dialects of ancient peoples. The source, m and general history of each drug are then given, and its llection or manufacture for use as a drug is followed by ections as to its preservation and treatment for the purses of the druggist. The nature and properties are then efly described, and a sketch given of the therapeutical es as indicated generally by various authoritative writers. lutions of doubts and discussions of the antipathies of medicines are succeeded by a host of formulæ. The ginal edition of this voluminous work, which is bound 38 volumes, is now very scarce, but it has been four times printed. The first Manchu emperor Shun-chi was a great ron of the work, and the last regular re-print was published in 1826, the sixth year of the reign of the emperor u-fang. Another book of use amongst Chinese medical n, is the Kwang-K'iun-fung-p'u: it is a botanical saurus of the time of the Ming dynasty, re-published in 08; but the largest amount of Chinese original matter s been taken from the Pen-ts'au-Kang-muh of Li-shi-chin ticed above. The good sense of Li-shi-chin to a great ent purged the pages of his Cyclopædia, the Pen-ts'au, nonsensical or disgusting things. In the present day, a rule, Chinese doctors employ few mineral or metallic bstances in the treatment of internal disease. Doctors reputation are above all tricks, but humbler practitioners unfrequently countenance incantations; but to teach of them the rational uses of mercurial and ferruginous eparations should be one of the first aims of those who uld strive to reform the practice of the native medical ofession in China. It may be added that many of the ugs in use in India are known in or exported to China, d similarly the drugs of China are largely exported to dia. The Rh-ya is a Cyclopædia of natural and general jects and matters, and dates from a very early period.

1506—1558. **John Francis Fernel,** a celebrated nch physician who was born at Mont Didier, in cardy, in 1506. He became physician to Henry II of ance. His writings were solely on medical subjects, and ve been often printed. In the year 1554 Drs. Fernel d Honillier drew up a strong report condemnatory of

the insanitary conditions of the burial ground near the church of the Holy Innocents, in Paris, and of the cloisters and toll houses around the church, but nothing came of it until the end of 1780, when that churchyard was closed. Fernel was succesively physician to two courts of France.

1509—1590. **Ambrose Pare'** was born in A. D. 1509, at Laval in France, in the province of Mayenne, and died in 1590 at the age of 81. He is justly considered by French surgeons to be the father of modern surgery, and to hold the same rank in this branch of the profession as Hippocrates does in medicine. He made several important changes in the practice of surgery, which have been followed to the present day. One of his greatest reforms was in the treatment of gunshot wounds, into which it was the custom at that time to pour boiling oil: he was also the first person to leave off the barbarous practice of cauterising a limb to stop the hemorrhage after an amputation: he restored the practice of tying blood-vessels after operations, and gave some excellent rules for operating. He was the first who recommended the extraction of the fœtus by the feet in cases of difficult labour. He showed that the Musculus bulbosus oculi of previous authors belongs only to brutes. He wrote twenty-eight books chiefly on anatomy and physiology. He was saved from the massacre of St. Bartholomew by the king of France keeping him in his own bedroom. He was successively surgeon to Henry II, Francis II, Charles IX, and Henry III of France.

1514—1564. **Andreas Vesalius,** the greatest anatomist of the 16th century, was born at Brussels in 1514. His father, of the same name, was an apothecary, and his uncle Everardus, a physician, and author of some commentaries on the works of Rhazes. His early education was at Louvain, from which he went to study medicine first at Montpelier and anatomy subsequently at Paris, under James Sylvius; and in 1526, while assistant to Guntherus, he discovered the origins of the spermatic blood-vessels. He subsequently revisited Louvain, then resided at Bologna and afterwards at Pavia, where he was appointed professor of anatomy. He remained there four years, and in 1543 took the same office at Bologna, but afterwards at Pisa, on an annual stipend of 800 crowns. He left Pisa in 1544, after which, owing to his time being

erwise occupied, he had few opportunities of making ther anatomical discoveries. His publications between 9 and 1564 were numerous; his book De Corporis mani Fabrica was described by Haller as an immortal rk, by which all that had been written before was almost erseded; and Senac speaks of it as the discovery of a new rld. He was earnest in exposing the errors of Galen, ich brought on him fierce attacks from Galen's followers. salius met these by still greater virulence, and in his rk, De Radicis Chinæ Usu Epistola, he proved by merous examples that Galen's descriptions must have n drawn from the dissections of monkeys and other mals, and very often from the works of his predecessors thout any dissection at all. In 1544 he was appointed ysician to the emperor Charles V, and afterwards of ilip II of Spain. But having opened the body of a anish gentleman, the relatives reported him to the quisition, and in expiation of his offence, he left drid in 1563 or 1564 on a pilgrimage to Jerusalem, returning from which to take up at Padua the chair anatomy vacant (1564) by the death of Fallopius, ship he was in was wrecked on the Island of Zante, ere he died from privation. Boerhaave and Albinus blished the whole of the works of Vesalius in 2 vols. o at Leyden in 1775. Vesalius prosecuted his labours h unwearied diligence. His anatomical work, to the sent day, is beheld by all with admiration, and mains its character as a faithful transcript of nature.

15—1619. **Fabricius ab Aquapendente** was called from the place of his birth, his proper name being rome Fabricius: he succeeded Fallopius in his professorship Padua, where he professed anatomy with extraordinary putation for forty years. He published a work on vision, ce and hearing, containing 46 figures of the eye, well ecuted but not particularly exact.

1523—1562. **Gabriello Fallopio,** known to the entific world as Fallopius, was born at Modena about 23. He and Vesalius and Eustachius, are the three inent anatomists who, in the 16th century, brought s branch of science to the exact form in which it is now rsued. He seems first to have held some ecclesiastical pointment, but to have resigned it in order to follow

more congenial pursuits. He studied medicine at Ferrara, afterwards travelled through the most interesting parts of Europe, and then settled at Ferrara as a teacher of anatomy. He afterwards lectured at Pisa, but ultimately succeeded Vesalius on the latter resigning his appointment in the University of Padua. In the year 1543, Cosmo de Medici established at Pisa the first botanic garden and placed it under Cæsalpinus. Ten years later another was formed at Padua and placed under the charge of Fallopius, who added to the collection the plants he had gathered in his travels. Besides his knowledge of natural history, he was an excellent and expeditious operator, and for his time a good practical surgeon. After a short but brilliant career of 11 years he died at Padua in 1562. His sole publication, entitled "Anatomical Observations," was printed in 8vo at Venice in 1561, and since his death has been frequently reprinted. This work forms an epoch in the science of human anatomy; its author displays a masterly acquaintance with every part of the human frame. He was the first to observe, or to describe, many important parts of the body, and several of them still bear his name. His lectures on pharmacy, surgery, and anatomy were published by his pupils after his death and in various forms. The best of them were printed with his "Observations" in 1584 at Venice in 3 vols folio. He described the muscles and nerves of the eye more correctly than Vesalius, and particularly the fourth pair of nerves; he pointed out the three branches of the fifth pair, and was the first to speak of the nasal recurrent; he described the caruncula lachrymalis, the puncta lachrymalis, and the geminum lachrymarum meatum; he also taught that the lachrymal gland is single. He pointed out the solid character of the crystalline lens, and described the ciliary ligament and the tunica vitrea.

1525?—1574? **Bartolomeo Eustachio,** known by the latinised name Eustachius, was one of the distinguished band of Italian professors to whom we owe the restoration of Anatomy and much of its advancement in modern times. He was born in the early part of the 16th century at San Sonerino in the marquisate of Ancona. He studied medicine at Rome, and afterwards settled there with a view to practise as a physician, and his

eat talents led to his being appointed professor of medi-
ne in the Collegio della Sapienza; yet he never attained
y degree of professional success, and after a long strug-
e with poverty and sickness, he died in great indigence
cout the year 1574. His ill-success was probably the result
his devotion to the study of anatomy, for Haller de-
ures it to be impossible without writing a treatise on
e subject to particularise the discoveries and corrections
at Eustachius introduced into anatomy. The canal
ading from the ear to the throat, and a valvular mem-
ane of the heart are known by his name. He wrote
Latin, and his researches Opuscula Anatomica in 4to
re published by himself in 1564 at Venice and again
8vo by Boerhaave at Leyden in 1707; he published
edition with annotations of Erotian's Lexicon Hip-
craticum. The book on which he evidently intended to
st for fame "On the disputed points of Anatomy," pro-
bly from want of means, was not published by him, and on
s death it was lost; but in 1712 thirty-nine copper plates
graved in 1554 and intended to illustrate the text of
is work were discovered at Urbino, and were published
1714 by Lancisi, with the aid of Morgagni, Pacchoni,
d other distinguished anatomists. Several editions of
em have since appeared with numerous commentaries;
e best is that of Albinus, published at Leyden in 1744
folio and reprinted in 1762, a proof of the importance
the labors of Eustachius, and how greatly he had been
advance of other anatomists.

1540—1603. **William Gilbert** or **Gilberd,** a
stinguished physician and philosopher, was born in
40 at Colchester, of which his father was Recorder.
e studied at Cambridge and Oxford, but took his degree
Doctor of Physic abroad; and in 1573, after returning to
ndon, he was elected a fellow of the College of Physicians
London. As a physician he attained great celebrity.
ueen Elizabeth appointed him her physician in ordi-
ry. It is however his researches into telluric mag-
tism, published in 1600, which secured his fame. The
rk is entitled De Magnete, Magneticisque corporibus
de magno magnete tellure, Physiologia nova, in which
e many important suggestions for the improvement of
vigation. Galileo expressed the highest admiration of

it; Erasmus pronounced him to be great to a degree tha is enviable; Whewell says that Gilbert's work contain all the fundamental facts of the science; that even a this day there is little to add to them; Humboldt say that Gilbert had so clear an idea of the imparting o telluric magnetic force, that he already ascribed the magneti state of iron bars in the cross on old church towers o steeples to this circumstance. He died on the 30th Novem ber 1603, and was buried in Trinity Parish, Colchester, i Essex.

—?—1603. **Andreas Cæsalpini,** best known b his latinised name Cæsalpinus, was born at Arezzo. H distinguished himself as a physician, and was appointe first physician to Pope Clement VIII. He was also a goo botanist, and wrote a treatise De Plantis. In the year 154 Cosmo de Medici established at Pisa the first botanic garde which was afterwards placed under Cæsalpinus, but it wa as an anatomist that he attained his fame, having almos approached to a knowledge of the circulation of the bloo

A. D. 1550? **Bhava** or **Babo,** author of the Bal Prakasa, a hindu physician who lived about the middle the 16th century. He compiled a book for the use practitioners, in which he gave a summary of the practic of all the best writers on medicine. He named the boo after himself. It is written in a clear style, and is esteeme by hindu medical men, as it gives an excellent account all the practical parts of hindu medical science. By i clearness and the excellence of its arrangement many dif culties met with in the older medical shastras a elucidated.

A. D. 1578—1657. **William Harvey** was born Folkestone, 1st or 2nd April 1578. In 1593 he entere Caius College, Cambridge, and then went abroad, visitin France and Germany and studying at Padua under Fabr cius for anatomy, and in 1602 took there the Doctor degree. In the 16th century, the researches of Servet and of the Italian anatomists Colombo and Cæsalpini h established the fact of the lesser circulation through t lungs, the fact of the blood being acted on by the air, a the existence of valves in the veins; and Harvey, while stud ing at Padua, learned these facts from Fabricius, from who he caught the first glimpse of the discovery which h

ce immortalised him. The class-room of Fabricius, at the iversity of Padua, was a small apartment wainscotted th curiously carved oak which he formed into a theatre, by cting circular seats rising almost perpendicularly one ve another. It still, or until recently existed; its seats rly black with age. Fabricius taught his pupils the exis- ce of valves in the veins, and conjectured that they were ended to moderate the flow of blood from the trunks of the ns to their smaller branches. Harvey, on returning to gland, was, in 1607, elected a Fellow of the College of Phy- ians and appointed physician to St. Bartholomew's Hospi- . On the 4th August 1615 he was chosen by the college to iver the Lumleian lectures on anatomy and surgery, d on this occasion he is supposed to have first brought ward his views as to the circulation of the blood, which afterwards more fully established and published in 1628 the treatise entitled Exercitatio Anatomica de motu rdis et sanguinis in Animalibus. Harvey was led to this covery by reasoning as to the possible uses of the valves the veins. Until his time, the opinions as to the uses of veins and arteries were various: the veins were sup- sed to distribute the blood to the body, and the arteries convey the vital spirits. But Harvey ascertained that heart in contracting forced the blood along the arteries, d received it back again by the veins. It was the atest and most original discovery in physiology, yet no ysician above forty years of age accepted the doctrine, hough on its complete recognition others in Europe laid im to the discovery. Harvey's right to the discovery, wever, has long since been acknowledged. He also wrote reproduction. All his writings were in Latin, and the ndon College of Physicians in 1766 published an edition his works which were written in correct and elegant gnage. In 1632 he was appointed physician to King mes I, and in 1632 to Charles I, whom he attended at battle of Edgehill: in 1645 he was chosen Warden of rton College, Oxford, but when the Parliamentary visi- s came there he left it for London, where he was chosen esident of the College, but declined the office on account his infirmities. He had, at his own expense, erected a lding for a library, also a museum in the garden of the lege of Physicians, at that time situated at Amen Corner,

and these in 1653 he presented to the College. He lived in troublous times in England. At the beginning of the rebellion, he was residing at Whitehall in London, but this was plundered and many papers containing curious observations upon the anatomy of animals were lost. He was wont to lament his loss, saying "for love or money he could never retrieve or obtain them." In his last years, he lived almost in seclusion at Combe in Surrey, but was visited in 1651 by Dr. Ent. He died at Hempstead in Essex on the 3rd June 1657, at the age of 79, leaving his paternal estate of £56 a year to the College. Dr. Lawrence published a splendid edition of his life in one volume. Harvey was of very small stature, round faced, of an olive complexion, with small round black eyes, and hair black as a raven till within twenty years of his death, when it became quite white. In early life he is said to have been passionate and apt to draw his dagger on very slight occasion, and all his five brothers were equally choleric though affectionate to one another. Their nephews were prosperous merchants, and, Heneage Finch, first Earl of Nottingham, seems to have been a cousin once removed.

16—? **Vidus** or **Vidius,** born at Florence, was for some time physician to Francis I, and afterwards taught medicine at Pisa. He described the orbital plate of the palate bone, also the trochlæa, and added to the account of the levator palpebræ.

1597—1677. **Francis Glisson,** an eminent English physician, who was born at Rampisham in Dorsetshire in 1597. He was educated at Caius College, Cambridge; for forty years was Regius Professor of Physic in that university, and was a long time president of the College of Physicians of London. He wrote in Latin a treatise on the Rickets, 12mo; Anatomia Hepatis, 8vo.; Tractatus de Ventriculo et Intestinis in 1671; De natura Substantiæ Energetica, seu De vita, 4to. His treatise De Ventriculo advanced the hypothesis of muscular irritability as being a specific property attached to the living fibre, and from which is deduced its peculiar power of contraction. He died in 1677, aged 80.

1620—1689. **Theophilus Bonet,** whose latinised name is Bonetus, was born at Geneva in 1620, and died in 1689. He left a great number of learned works. What may

styled anatomical pathology, a new road to the improvement of medical knowledge, is principally due to him. At advanced age, he published his great work, entitled pulchretum, which was afterwards enlarged by his ountryman Manget. It consists of a great collection of ses, in which is given the history of the diseases with e appearances found on dissection. This plan was erwards adopted by Valsalva, an eminent professor of logna. To Bonet is due the credit of having started rbid anatomy. S'Gräuwen in 1771 pointed out its utility d necessity, and Morgagni instituted a thorough quiry into its domain, and published his results in 1793 his work De causis et sedibus Morborum. Since then is science has been and is being sedulously cultivated. e later pathologists are many. Among the illustrious nd of French pathologists may be named Pinel, Andral, reschet, Velpeau, Beclard, Broussais, Corvisart, Bouillet, ruveilhier, Dupuytren, Laennec, Petit, Serres, Bayle, ouis, Gendrin, Chomal, Billard, Foville, Lallemaud, ostan, Lisfranc, Sichell, Piorry, and Chaussier. Britain s had Percival, Stark, Baron, Lloyd, Willan, Bateman, Cheyne, Harty, Guthrie, of London, Pemberton, odie, Travers, Hastings, Bright, Burns, Farre, Cullen, ope, Gregory and Thomson of Edinburgh, Abercombie, Hey, Abernethy, Wardrop, the three Monros, e two Hunters, Baillie, Marshall Hall, Christison, ells, Ballingall, Brereton, Bowman, Colles, Critchell, nman, Golding Bird, Graves, Hay, Norman Chevers, get, and Stokes, and Italy has seen Scarpa, Caldini, nscagni, Rolando, Bellengeri and Tommasini.

A. D. 1624—1689. **Thomas Sydenham,** one of the ost distinguished of English physicians. He was born Winford Eagle in Dorsetshire A. D. 1624. In 1648 took his degree of Bachelor of Medicine at Oxford. He erwards studied at Montpellier, then the seat of a famous edical School, finally became a Doctor of Medicine of mbridge, and settled as a Licentiate of the College of ysicians at Westminster in London, where he soon rose the top of his profession. In his practice he carefully ted the symptoms of disease and applied himself to estioning nature herself—founding his practice on the vious indications of nature rather than on prevalent

theories—justly thinking that though the practice of physic may seem to flow from hypotheses, yet, if the hypotheses are solid and true, they in some measure owe their origin to practice. He had a singular talent for observation, and the pictures he has drawn of diseases are so accurate that in many instances it would not be possible to improve them. The improvements he introduced form an era in the history of medicine. Febrile diseases attracted his special attention; he was the first who introduced the cool regimen in the treatment of small-pox, and his writings on consumption, fevers and nervous diseases, though brief, are still held in estimation. In later life he suffered greatly from gout, and died in London on the 29th December 1689 at the age of 65. His published writings are On the method of curing fevers based on accurate observation, which was published in 1666, and reprinted in 1675, under the title of Medical Observations on the history and treatment of acute diseases; also Epistolæ Responsoriæ duæ, de Morbis Epidemicis, 1675 and 1680; De Luis Venereæ Historia et Curatione 1680; De Podagra et Hydrope 1683, and after his death there appeared Processus integri in morbis fere omnibus curandis. Sydenham has been frequently styled the English Hippocrates. His writings, like those of his great predecessor, abound in theory, but they also resemble those of Hippocrates in containing the most accurate detail of facts, and like Hippocrates, he did not allow his speculative opinions respecting the nature or cause of disease to interfere with the treatment. It is this which causes his works to be still read with admiration. It is to Sydenham that is due the recognition of the fact that medical science is more a science of observation than of experiment, and is to be governed by the great principle which is the foundation of true philosophy as well in Medicine as in every other department of science, that all theory not derived from the generalization of facts is objectionable and almost necessarily leads to erroneous conclusions. Sydenham was held in high respect by his contemporaries. His remarks on epidemic diseases are among the most interesting of his works; since his time our knowledge of this class of diseases has been enlarged by Morton and Huxham of England, by Ramazzini, Lancisi, Torti in Italy, and Stoll in Vienna; and medical science has

en further enriched by descriptions of diseases incident to
e army and navy, and to the population of towns, further
rwarded by Pringle, Brocklesby, D. Monro, John Hunter,
.. Percival of Manchester, Bisset Hawkins, Dr. Clark, Lind,
ed 1804), Hillary, Blane, Trotter, M. Villerme, Larrey,
l Desgenettes, Sir Gilbert Blane, Sir James MacGregor,
ss. Johnson, Robertson, Luscombe and Sir James Ranald
rtin. From the labors of these eminent men the sphere of
ion of medical practitioners has been greatly widened.
hat was once called the Healing Art, has now a far greater
here than the term expresses. Medicine in its modern sense
l work is preventive as well as healing. Medicine is no
ger simply an art directed to the alleviation or cure of
ividual suffering. Applied to the task of aiding in the
ministration of justice, of removing the causes of disease,
restricting or annihilating epidemics, of increasing the
n of national health, it becomes a moving power in Gov-
rment; and State Medicine is the offspring and the com-
ment of the healing art. All previous efforts to preserve
health of armies and navies were made by individuals,
l were overshadowed by the action of the British Gov-
rment in 1835, in which year, on the representations of
rector General Sir James Macgregor, Deputy Inspector-
neral Marshall, Captain Tulloch, and Assistant Surgeon
omas Graham Balfour were appointed to summarize
. Annual Reports received from the medical officers of
army, of which 160 volumes had then accumulated.
e results were made known to the world by a series of
tistical Reports, presented to the British Parliament
the Queen in the years 1838 to 1841, On the sickness,
rtality and invaliding among the British troops in the
ious military commands. Following on these, there
eared, in 1840 and 1841, similar reports on the British
vy by Dr. John Wilson, a Naval medical officer. In 1842
1843, Surgeon Lorimer, of the Madras Army, published
six volumes 8vo. similar statistical and topographical
orts on the Madras Army and on the civil stations of that
sidency. In 1845, Dr. Forry reported on the health of the
ited States Army; in 1846 or 1847 M.——? reported on
t of the French Army. Assistant Surgeon Edward Green
four of the Madras Army, drew from all these his Statisti-
Data for forming troops and maintaining them in health

in different climates and localities which, in the years 1845 and 1848, were read before, and published in the Journals of, The Royal Statistical Society and the British Association. In these papers were put forth two axioms, viz., that the utmost care in selecting recruits and in attending to the preservation of the soldiers' health after enlistment seems unable to retain troops when serving in foreign countries in health equal to that enjoyed by soldiers who are natives of the countries in which they are serving; also that the health of the officers of an army is at the highest pitch to which that of the soldiers can be brought by means of improved dwellings, food, clothing and morals, and the difference in the rates of mortality of officers and men, is the amount of preventible deaths. He illustrated these views by tabular statements such as the following, showing the average annual ratio of deaths per 1,000 of mean strength

	of officers	of troops
Bangalore, Cavalry	8·62	25·8
Great Britain, Household Cavalry,	9·5	14·5
Dragoon Guards		15·3
„ 27 Line Regiments	11·0	15·5
Canada, Upper and Lower	10·9	20·0
Nova Scotia and New Brunswick	14·0	18·0
New Foundland		22·0
Gibraltar	13·5	22·2
Cape of Good Hope, Cape District	13·8	15·5
Eastern frontier District		12·0
Mauritius	14·7	30·5
Malta	16·9	18·7
Ionian Islands	17·5	28·3
Trichinopoly	22·1	38·0
Bangalore, Infantry	27·6	35·4
Moulmein	27·7	27·9
Cannanore	29·	37·6
Fort St. George, (Madras)	33·8	43·6
Bellary	48·7	38·8
Secunderabad	51·0	71·6
Ceylon	54·5	33·2
Do.	75·0	46·0
Windward and Leeward Islands ...	42·0	85·
Jamaica	83·4	143
Western Africa, Sierra Leone, and	209·0	483
Cape Coast		668

The information put before the world by all these various istical reports permitted many people to enter on the cussion of the means of preserving the health of soldiers, in 1851, resulted in the Queen of Great Britain and and nominating a Royal Commission to inquire into the itary condition of the Army in India. The Report was ted in 1863, and led to the Government of British India ointing Sanitary Commissioners for the several adminis- ions of that part of the British empire. The services of se sanitary officers have been of great value to the army to the civil communities; the leading men, all still (1876) e, have been Sir John Strachey, Mr. R. S. Ellis, C. B., Surgeon Majors Cunningham, Brydon, and Cornish. this path India was followed by Great Britain blishing, in 1870, a Board of Health in connection H. M. Privy Council, Mr. John Simon being placed as chief.

A. D. 1628. **Muhammad Yakub bin Yusuf,** ssician to Shah Jahan, author of the Alfaz ul Adwiah, ork in the Persian language, translated by Mr. Gladwin A. D. 1793.

A. D. 1628—1694. **Marcello Malphigi,** an emi- t Italian physician and anatomist, was born A. D. 10th rch 1628, at Crevalcuore near Bologna, where he studied dicine, and in 1653 received a Doctor's degree. Three rs afterwards he obtained the medical chair, which he rtly after resigned in order to take up a similar office at a. He subsequently, from 1660, resided for intervals at ogna, Messina and Rome, and died 10th November 1694 the last named place. He published many books which ssed through several editions, and his works were re- ted in London in 1697, and again in the following year Amsterdam. He was elected a Fellow of the Royal iety of London in 1669, and in 1691 Pope Innocent XII ed him to Rome, appointing him his physician, cham- ain and domestic prelate. He was the first to examine circulation with the microscope, but is now chiefly embered on account of his discoveries of the anatomy the skin and of the secreting glands. Although Malphigi's ings are not free from errors, yet he contributed much the progress of physiology, and he deserves a place ong discoverers.

1638—1731. **Frederic Ruysch,** one of the greatest anatomists that ever appeared in Holland. He was born at the Hague in 1638, his father Henry Ruysch being Commissary of the States General. After his early training, he went to Leyden to study anatomy and botany, and passed on to Franeker, where he took his doctor's degree. He then returned to the Hague, married in 1661, and engaged ardently in the practice of his profession. In 1665 he published a treatise on the Lymphatics and Lacteals, which led to his appointment to the professorship of anatomy at Amsterdam, where he laboured to form a museum, which Peter the Great subsequently purchased in 1717 for £2,727. In 1685 he was made professor of physic, a chair which he filled with honor till 1728. He died on the 22nd February 1731, in his 93rd year. He published many books, but he had never read much, and had been anticipated in many points which he put forth as discoveries. He was a member of the Royal Society of London.

1641—1720. **Sir Robert Sibbald,** an eminent physician, naturalist and antiquary, was born in Fifeshire, or, according to Bower, in Edinburgh, in 1641. He was present with his parents when Dundee was taken by General Monk by assault after a stubborn and prolonged resistance. He afterwards studied medicine for five years in the University of Edinburgh. On March 1660 he went to Holland, and for a year and a half studied anatomy and surgery at Leyden, and in 1661 took his doctor's degree. On leaving Leyden, he visited Paris and afterwards Angiers, where he studied for a year. From this he repaired to London, and in October 1662 returned to Edinburgh, where he commenced the practice of medicine. About 1667 he and Dr (afterwards Sir Andrew) Balfour, formed a botanical garden at Edinburgh, and it was chiefly through Dr. Sibbald's instrumentality that the Royal College of Physicians was instituted in Edinburgh, the great seal being appended to the charter on the 29th November 1681, being St. Andrew's day. He was the first Professor of Medicine in that University. In 1682 he was knighted by the Duke of York then High Commissioner in Scotland; and in December 1684 he was elected President of the Royal College of Physicians. In 1697 he completed the Catalogue of his

aseum, which he presented to the University of Edin-rgh. He was an able and voluminous writer, on history, ography, medicine, natural history, and antiquities, his blications appearing from 1661 until 1739, after his ath.

654—1720. **Giovanni Marcia Lancisi,** an inent anatomist, was born at Rome on the 26th tober 1654. After his classical studies, he completed course in philosophy in the Roman College, and a time was inclined to study divinity, but finally ected his attention to anatomy, chemistry and botany. 1672 he was created doctor of philosophy and physic, l from 1675 to 1678 was physician to the Hospital of Holy Ghost in Sassia. From 1678 to 1684 he was a mber of the College of St. Saviour in Lauro, but the latter year he was appointed professor of anatomy the College of Sapientia, which he held for 13 years. 1688, when only 34 years of age, Pope Innocent XI se him for his physician and private chamberlain, and was afterwards physician to Clement XI. He died st January 1720, aged 65. The latter part of his life was ployed in the practice of his profession and in writing his ks. The principal of his works was published under the e of Johan Marc. Lancisi, Archiatri pontificii, Opera, quæ tenis prodierunt omnia, &c. Genevæ 1718, 2 vols. 4to. presented during his life his library of nearly 20,000 umes to the Hospital of the Holy Ghost, for the use of public, for whom it was opened in 1716.

657—1716. **Engelbert Kœmpfer,** an eminent anist, physician and historian, who was born on the h September 1657 at Lemgow in Westphalia, where father was a minister. He studied languages, history, graphy and music in several towns. In Dantzic, in 3, he wrote a dissertation De Divisione Magestatis. visited Thorn, after which, he went for three years to the versity of Cracow, and then for four years to Konigsberg. next travelled to the University of Upsal in Sweden, on the 20th March 1683 he left Stockholm as Secre-y to Fabricius, an Ambassador sent by Charles XI to king of Persia, travelling through Russia and orgia. The embassy arrived at Ispahan in January 4, where Kœmpfer stayed for two years. During his

stay in the latter country he collected all obtainable medicinal substances, which he described in his Amœnitates Exoticæ. When the embassy, at the close of 1685, quitted Persia, Kœmpfer joined the Dutch fleet in the Persian gulf, visiting Persepolis on his way to Gambroon, where he remained till June 1688, and then embarked for Batavia, where he arrived in September, during the voyage visiting many Dutch settlements in Arabia, on the Malabar coast, in Ceylon, and the Bay of Bengal. In May 1690 he went for two years to Japan, till November 1692, and in February 1693 he finally quitted Batavia via the Cape of Good Hope for Europe. In 1694 he took the degree of Doctor of Physic at Leyden. He married in 1700, but his constitution was impaired, and at the age of 59, on the 2nd November 1716, he sank under many ailments. His "History of Japan" was till lately the standard work by which that island was known.

1660—1742. **Friederich Hoffmann** was born at Halle in Saxony in 1660 of a family which had been engaged for two centuries in the practice of medicine. He took his doctor's degree at Jena, and in 1682 began to practise medicine at Minden. In 1684 he travelled through England and Holland, and on his return he was appointed physician to Frederick William, elector of Brandenburg and to the Garrison at Minden. In 1688 he removed to Halberstadt, but subsequently, in 1693, on the invitation of Frederick III, King of Saxony, afterwards King of Prussia, he took the chief professorship of medicine at Halle, which had just been founded, and he retained this till his death in 1742, with a reputation as a physician and an author not inferior to his great colleague Stahl, or that of his contemporary Boerhaave of Leyden. He was admitted a member of many learned Societies of London, Berlin, St. Petersburg and other cities. He was a voluminous writer but prolix and discursive, and his writings are now little known. What he did for the progress of medicine was the change he effected in the then prevailing doctrines supposed to explain the essential nature of disease. He undoubtedly made a great and important addition to theory, both medical and physiological, by the distinct manner in which he refers to the operations of the nervous system and its influence on the phenomena of life. Many

the actions which Stahl ascribed to his hypothetical iima, Hoffmann referred to the nervous influence, a ysical power no less real than that of gravity, or chemical inity, but of a specific nature and operating by its own ws. He is entitled to the merit of having materially vanced our knowledge of the laws of the animal economy, d still more of having pointed out the track which might successfully pursued by others for the farther advance- nt of this knowledge. The humuoral pathology which cribed all diseases primarily to a morbid condition of the iids, which by their action on the solids produced condary changes in them, had up till his time prevailed in the schools; the only subject of dispute had been whether e primary disorder of the fluids consisted in an alteration their physical or their chemical properties. Glisson and glivi had opposed this theory, but with little effect till offmann showed that the solids were more often the imary seat of disease than the fluids. He believed that their disorders were attributable to an alteration from e healthy degree of action, or, as he called it, tone, which nstitutes the natural state of the moving fibres; if this ne were increased, spasm was said to result, if it were creased, atony or relaxation was produced; and these posite conditions occurring in one or other of the chief stems of the body, the nervous or the vascular, produced, thought, every variety of disease. Hoffmann's theory has g ceased to be studied, but it formed the basis upon ich many others, more nearly approaching to accuracy, re founded. Cullen acknowledges that his own doctrines re in a great measure founded upon it; and Brown's pothesis of exhausted and accumulated excitability, upon ich was founded that of Rasori, still received in the lian schools, was another modification of the same theory disease. In Great Britain, at the present day, some of terms alone are preserved, to express similar but ther indefinite ideas. In accordance with his theory most edicines were deemed by him to act either as tonics or as tispasmodics, the former class including all stimulants, d the latter all depressing agents; but he also admitted eratives and evacuants.

1660—1752. **Sir Hans Sloane,** an eminent physician and naturalist, was of Scottish extraction, but born

at Killileagh in the north of Ireland in 1660. He studied medicine in London for four years, paying particular attention to anatomy, botany, chemistry and natural history, at that time making the acquaintance of Boyle and Ray. He subsequently attended the hospitals at Paris, studying anatomy under Du Verney and botany under Tournefort. With an introduction from Tournefort to M. Chirac and M. Magnol, he went to Montpellier, where he studied natural history and occupied himself in classifying and arranging natural objects. He then travelled through Languedoc with the same view, and in 1684 he returned to London, and gave Ray all the plants he had collected. He made the acquaintance of Sydenham, who took him into his house and recommended him to practice. He was chosen a fellow of the Royal Society and of the College of Physicians. He subsequently visited Jamaica as physician to Christopher, Duke of Albemarle, and during a stay of 15 months he collected a great variety of plants which he presented to Ray. On returning to London, he recommenced practice, was chosen physician to Christ's Hospital, but applied the emoluments of that office for the relief of the poor objects in the hospital. He was the first in England to lay the plan of a dispensary where the poor might obtain suitable medicines at prime cost, and his idea was afterwards carried out by the College of Physicians. This plan differed from what had been followed formerly at monasteries and nunneries, where advice and medicines had been given gratuitously; but in the present 19th century the monkish customs have revived throughout the world, medicines are now given to all comers, and this is felt by all medical men to be injurious to hospitals bestowing and to the physicians attending to the recipients of the charity. In the latter part of 19th century, indeed, it has become so burthensome that efforts to get rid of it have been undertaken. He was created a baronet by King George I, was elected a member of the Royal Academy of Paris, and President of the Royal Academy of London on the death of Sir Isaac Newton. He published many treatises in the Transactions of the Royal Society, of which he was appointed Secretary in 1693. He presented to the Company of Apothecaries the entire freehold of their botanical garden at Chelsea, in the centre of which a

arble statue of him by Mr. Rysbach has been erected. e was the first in England who introduced the use of achona bark. He used all his efforts to establish the lony in Georgia in 1732, and of the foundling sspital in 1739. During his long life he con-nuously added to his collection of objects of natural story, and he bequeathed his museum to the nation the payment to his family of £20,000. The library in had more than 50,000 volumes. He published his ttural history of Jamaica, an elaborate work. At the e of 80 he retired to Chelsea to pass the remainder his life in tranquillity. He died in London on the th January 1752, in his 91st year.

1667—1706. **George Baglivi,** an eminent physi-an who was born at Ragusa, and educated at Padua. e became professor of anatomy at Rome, where he died 1706 at the early age of 39. Four years after his ath, in 1710, his writings were collected and printed in vol. 4to. He was the first writer who systematically pposed the humoural pathology. He advanced the doc-ine that the causes of disease are primarily in the solid rts of the body, and that the fluids are affected secon-rily, in consequence of the previous affection of the solids. offman, in his doctrines, had considered the fluids to be casionally the primary seat of disease, though he con-ived that in most cases it originated in an affection of the lids; but it was Baglivi who first openly referred all to e solids.

A. D. 1668—1738. **Hermann Boerhaave** was rn on the 31st December 1668 at Voorhout, a village o miles from Leyden. In 1682 he was sent to study at yden, at first for the ministry, but when 22 years of e he commenced the study of medicine, and in 1693 he ok at Harderwijk the degree of Doctor of Physic and en adopted the medical profession. In 1701 he was pointed professor of the Institutes of Medicine, and in s dissertation he enthusiastically described the method study pursued by Hippocrates. In 1709 the chair of e professor of Botany was conferred on him; in 1713 was elected Professor of Chemistry; and in 1714 he as chosen Rector of the University. But his views varied. 1703, in his dissertation "De usu ratiocinii Mechanici

in Medicina," he left the Hippocratic method of simple observation and put forward a mechanical theory of the globules of the animal fluids, so that in the treatment of disease the efforts of the physician were to be directed to restore a mechanical equilibrium. He also supposed many morbid phenomena to arise from acrimony of the blood, which it was the business of the physician to neutralise. This part of his doctrines is in accordance with the humoural pathology, which has always kept a hold on popular belief. Subsequently, in 1709, he wrote another dissertation "Oratio qua repurgatæ Medicinæ facilis asseritur simplicitas," which deserves to be placed by the side of those in which he recommends the study of Hippocrates. He wrote several essays and books, using the Latin language, but they have been translated into many of the European tongues and some into Arabic; also his Institutions of Medicine (1708), and Aphorisms (1709). During his life his fame was wide-spread. He was elected a member of the Academy of Sciences at Paris and of the Royal Society of London. He was the most distinguished physician of his age. He died at Leyden after a lingering illness on the 23rd September 1738.

1682—1771. **Giovanni Battista Morgagni,** an able and eminent anatomist, was born and educated at Forli, a small town in Italy, in 1682. He studied medicine at Bologna under Albertini and Valsalva, and in 1701 obtained his Doctor's degree. He afterwards went to Venice and Padua to study chemistry and natural philosophy. He was not more than twenty when he himself taught anatomy with the highest reputation, and after various persecutions the Senate of Bologna appointed him to fill the Medical chair. In the years 1706, 1717 and 1719, he published his Adversaria Anatomica. In 1715 he was appointed by the Republic of Venice Chief Professor of Anatomy in the University of Padua, and there, for nearly sixty years, until his death in 1771, he devoted himself to his favorite pursuit. His most celebrated work, "De Sedibus et Causis morborum per Anatomen Indigatis," was first published at Venice in his 80th year. It records an immense number of observations on morbid anatomy, unequalled in extent and accuracy, and advanced pathology to its present position as a branch of medical science,

ost as greatly as was physiology by his contemporary ller. It has been frequently published and translated, is still a standard work of reference. Of his little book versaria Anatomica prima Bononiæ 1706, Haller said re is scarcely anything that is not new or at least more rly described than it had been previously; it and five ilar pamphlets published in 1717 and 1719 were collected published at Padua in the last named year, and nty letters, Epistolæ Anatomicæ, were published together Venice in 1762. While at Padua, also, he published his va Institutionum Medicarum Idea. He edited the Life Works of Valsalva, his former teacher and friend. In early part of his career, he had been persecuted by hls, but his fame soon extended far beyond the limits his native country; the learned societies of Europe, and temporary popes and sovereigns bestowed on him their hest honors, and the Royal Societies of London and ris enrolled him as a member. An edition of his works peared in 1765 in 5 volumes.

1686—1779. **Jussieu**.—There were three brothers of s name, Antoine Laurent de Jussieu, Bernard de Jussieu l Joseph de Jussieu, all of them botanists and natives Lyons, a town in France. Antoine Laurent de Jussieu, rn 1686, died in 1758, aged 72 years, much lamented on count of his philanthropy. He had made a botanical r, and brought from Spain and other European coun- es a large collection of plants, and afterwards wrote on jects connected with Natural History, Botany, Mine- ogy and Medicine. He was author of a discourse on progress of Botany. He also wrote the appendix to urnefort's Institutions of Botany, and abridged Bar- ier's work upon the plants of France, Spain and Italy. s younger brother, Bernard de Jussieu, born in 1699, s, in 1721, when 22 years old, appointed Professor of Bo- y in the Royal Botanical Garden. He put forth in 25 a new edition of Tournefort's History of Plants in neighbourhood of Paris. He was long employed in nstructing a systematic division of the vegetable king- m. He died in 1777, aged 79. Cuvier has described him the most modest, and perhaps the most profound bota- t of the eighteenth century, who, although he scarcely blished anything, is nevertheless the inspiring genius of

modern botanists. Joseph de Jussieu, born 1704, died 1779 ; a good naturalist, physician and engineer. He went to Peru in 1735 in the capacity of a botanist, with Condamine and the academicians sent there to measure a degree. He travelled over a great part of Peru, and gave much attention to the medicinal barks. He published a journal of his voyage. He remained there for 36 years and then returned to France in very bad health and almost in a state of childhood. The men who have been distinguished as botanists in the East Indies during the eighteenth and nineteenth centuries, are Rottler, van Rheede, Kœnig, Koempfer, Roxburgh, Wallich, Heyne, Wight, Royle, Griffiths, Hooker, Thomson, Jerdon, Cleghorn, Stewart, and Beddome.

1688—1752. **William Cheselden,** a distinguished English anatomist and surgeon, was born in Leicestershire in 1688. He studied in London, and in 1711 began to lecture on anatomy, was subsequently elected a Fellow of the Royal Society and contributed several interesting papers to the Philosophical Transactions. In 1713 he published a standard work on anatomy, an eleventh edition of which was printed in 1778. He continued to lecture for twenty years. He was successively surgeon to St. Thomas' Hospital, and afterwards appointed Consulting Surgeon to St. George's and the Westminster Hospitals. He was a dexterous and successful operator, and invented the lateral mode of operating for lithotomy, which is followed at the present day. In 1733 he published his "Osteography," a work on the anatomy of the human bones, which he dedicated to Queen Caroline, to whom he held the appointment of surgeon. In 1737 he left London to be surgeon of Chelsea Hospital, and he held this appointment till he died of a second attack of apoplexy at Bath on the 10th April 1752. As a lithotomist he was famous, and out of 42 patients whom he cut for stone in four years, he lost only one.

A. D. 1697—1859. **Alexander Monro**. Three learned men of this name, grandfather, son and grandson, or, as the last was accustomed to speak of them, Primus, Secundus, Tertius, were lecturers on anatomy in Edinburgh. Dr. Alexander Monro, M.D., the first of the three, was born in London 8th September 1697. His father, John Monro, a practitioner

Edinburgh, was the youngest son of Sir Alexander Monro Bearcrofts, who was a colonel in the army of Charles II the battle of Worcester. Alexander was educated at linburgh, then studied anatomy under Cheselden in ndon, afterwards at Paris, and then under Boerhaave at yden; but in 1719 he returned to Edinburgh, where he ss appointed professor and demonstrator of anatomy to e company of surgeons, and soon after, in 1720, in njunction, with Dr. Alston, he gave lectures on anatomy. his suggestion professorships of anatomy and medicine re instituted in this university, and the Royal Infirmary nded. In 1721 he was appointed professor of anatomy, d Dr. Alston was the professor of botany and materia dica. He thus laid the foundation of a School of edicine in that city, and was the founder of the Medical ciety of Edinburgh, which still continues. He was a luminous writer on anatomical, physiological, and prac- al subjects. His most important works were on osteology the nerves, and on inoculation. In 1759 he resigned the ttureship of anatomy to his son, from whom it descend- to his grandson; but he continued his chemical lectures til a short time before his death, 10th July 1767. It was efly through his talents that the medical school of Edin- rgh rose into celebrity.

Dr. Alexander Monro (Secundus) was born at Edin- rgh 21st March 1733, where he graduated in 1755, d in the following year he was appointed joint bfessor of anatomy and surgery with his father, and came a distinguished physician and professor in the iiversity of Edinburgh. But before entering on his ties he visited London and Paris, and attended the atomical lectures of Professor Meckell at Berlin. He ss a voluminous writer, and his work "De Venis Lym- aticis Valvulosis" was published at Berlin in 1758. He d on the 2nd October 1817.

In 1798, however, his son, Dr. Alexander Monro, ertius,) had been appointed joint professor with his ther. He was born 5th November 1773. He studied Edinburgh, London and Paris, and in 1803 he estab- ed a class of practical anatomy. He was a copious iter, and was the father of the Royal Society of otland. He retired from the chair in 1847, and thus

ended a connection of more than a hundred years, between the college of Edinburgh and the family of Monro. He died 10th March 1859.

1699—1772. **Gerard van Swieten,** an eminent physician, the great support and ornament of the Boerhaavian school, was born at Leyden in 1699. He became a professer at Leyden, but being expelled on the ground of his religious views he accepted, in 1734, an invitation from the empress Maria Theresa to the University of Vienna, where honors and distinctions of all kinds were heaped upon him. There he read lectures on Materia Medica and the Practice of Physic, and amply repaid the patronage of the empress by the unremitting attention with which he devoted himself to the medical schools of that city; and he may be said to have laid the foundation of the high fame which its University afterwards attained. He adopted the theory of Boerhaave with little alteration, and in this respect the commentaries he wrote on Boerhaave's Aphorisms in 5 vols. 4to, are fundamentally defective; but the great body of facts which it contains, detailed as they are in a clear perspicuous style, will always ensure it a place in the student's library. It contains a large collection of valuable practical observations.

1703—1776. **Robert James,** an English physician of great eminence in his day, who discovered a Fever Powder which, though his discovery was much opposed, grew in repute in 1750, and is known to this day by his name. He was born A. D. 1703 at Kinverston in Staffordshire. His father was a major in the army, and his mother a sister of Sir Robert Clarke. He became bachelor of arts of St John's, Oxford, and in 1755 a doctor of Cambridge. He practised as a physician successively at Sheffield, Litchfield, Birmingham and London. He died 23rd March 1776, leaving sons and daughters. He was a voluminous author. In 1743, he published a "Medicinal Dictionary" 3 vols folio, and soon afterwards in 8vo an English translation of Ramazzini de Morbis Artificum. In 1746, the Practice of Physic 2 vols. 8vo. In 1760, On Canine Madness. In 1764, a Dispensary. In 1751, a Dissertation upon Fevers to which, in 1778, was added, in the 8th edition, a Vindication of the Fever Powder, with a short Treatise on the Diseases of Children.

A. D. 1707—1778. **Linnæus** is the latinised name of Carl-von Linné, an illustrious naturalist, who was born on the 13th (old style) 1707, at Rœshult, in the province of Smaland in Sweden. He was the son of a clergyman. His intellectual development was slow. He neglected the usual school-boy learning, and could not learn languages; but in 1727 he entered on the study of medicine at the University of Lund in Scania, whence, in the following year, he removed to Upsal, where he devoted himself to the cultivation of Natural History and began to be of repute. In his 24th year he conceived the idea of classifying or arranging plants exclusively according to the relations of their sexual parts, regarding which he wrote a memoir. It introduced order in the midst of variety and shed light on the immense diversities of nature, though it ultimately gave way to the natural system of Jussieu, as enlarged by Decandolle. In 1732 he made a journey of 3,500 miles through Lapland; in 1733 he gave lectures on Mineralogy, having formed a system of that science; in 1735 he revisited Lapland and published a complete Flora of that country, and afterwards visited the University of Harderwyk in Holland, where he took the degree of M.D. He visited Leyden, England, and Paris, and in 1738 returned to Stockholm, where he settled as a physician; but in 1741 he succeeded Roberg as Professor of Medicine at Upsal. His writings were of the highest order. When, in 1735, he visited Leyden, he published the first sketch of his "System of Nature," filling 12 folio pages: he subsequently published the "Fundamenta Botanica," exhibiting the basis of his botanical system, and in 1736, his Hortus Cliffortianus and Genera Plantarum; in 1745 his "Flora Suecica," and in 1746 his "Fauna Suecica;" about 1751 his "Philosophia Botanica," and in 1753 his "Species Plantarum," containing a description of every known plant, arranged according to his sexual system. It was one of the great works of his life. It appeared first in two 8vo. volumes, but Willdenowe, between the years 1799-1810, published at Berlin an edition in ten volumes. In 1768 he completed the plan of his greatest work, the "Systema Naturæ," which, through successive editions, had been enlarged to three 8vo. volumes. He died on the 11th January 1778 of a second attack of apoplexy. During his long

life he received many honors, and literary honors were conferred on him by the scientific societies of foreign countries. In 1746 an honorary medal of him was struck at the expense of some noblemen. In 1747 he was elected Royal Archiater. In 1753 he was created a Knight of the Polar Star, an honor never before bestowed on a literary man. In 1761 he was elevated to the rank of nobility. He was a man of impetuous character. His amiable son Carl, born 1738, was Professor of Medicine at Upsal, and died 1783. He was unjustly persecuted by his father and mother.

1708—1777. **Albert von Haller,** a celebrated Swiss physician, the father of modern physiology, from whose time medicine has acquired more and more nearly the character of a science of simple observation and the patient investigation of facts. He was born at Berne, on the 16th October 1708, of an ancient family, his father Nicholas being an advocate there. His early life was feeble and delicate, being affected with rickets, but his intellect was precocious. When only ten years old he could translate from the Greek. He compiled a Chaldee grammar and a Greek and Hebrew dictionary for his own use, and extracted 2,000 biographical articles from Bayle and Moreri. From his childhood he followed the system of invariably recording everything which appeared to him worthy of notice. He was sent to a public school in 1721, after his father's death, and in 1723 went to reside in the house of a physician at Bienne, for the study of physiology. His medical studies were prolonged till he was 27 years old, studying in 1723 at the University of Tubingden; in 1725 at Leyden under Boerhaave and Albinus;—and at Tubingden in 1726 he obtained his Doctor's degree. About that time he visited Ruysch at Amsterdam; in 1727 he visited London and made the acquaintance of Cheselden and Sir Hans Sloane; thence he went to Oxford, and thence to Paris, to pursue his anatomical and surgical studies under Winslow and LeDran; then to Basel to study mathematics under Bernouilli, and then returned to practice as a physician in his native town. In 1735, he was appointed physician to the hospital, but in the following year, George II appointed him Professor of Medicine, Anatomy, Botany and Surgery at Gottingen, an appoint-

nt which he held for 18 years, when delicate health
pelled his retreat to Berne, where he continued to reside
his death in October 1777 at the age of 69. He is un-
mously received as the father of modern physiology,
history of which in fact commences with his writings.
was the first to investigate independently the laws of
animal economy, which had before been studied only
connection with the prevailing mechanical, chemical, or
aphysical theories of the day. He sought experimen-
y to discover the laws which govern the action of the
ans of the body during life, and he adopted the view
t all the phenomena of life are based on the irritability
sensibility of organs. The announcement of these
trines in his writings gave rise to much discussion,
ing which was originated the discovery of the law that
the action of each organ a peculiar stimulus is requir-
and that each tissue has what Bichat, who illustrated
most completely, called a vié propre, its own special
lity. Of the treatises published by him between 1727
1777 the titles of nearly two hundred are known.
ring his lifetime he received the high honors which he
erved. In 1739 he was appointed physician to the
g of England. In 1453 he was elected a Fellow of the
yal Society of England, also at different times subse-
ntly, of all the learned societies of Europe, and in 1748
was ennobled by the emperor of Germany. A political
k, Versuch Schweizerischer Gedichte, went through
editions in German and French. From 1750 to 1760
published, in 19 volumes 4to., treatises on Anatomy,
rgery and Medicine. From 1757 to 1766 was printed
Elementa Physiologiæ Corporis Humani, or the Ele-
nts of the Physiology of the human body, in 8 volumes,
doubtedly the greatest work on medical science which
18th century produced, and from 1774 to the time of
death he was publishing his Bibliothecæ Anatomiæ
irurgiæ Medicinæ practicæ, Botanicæ et Historia Natu-
s which form 10 volumes 4to. completed after his death.
Icones Anatomicæ were published between 1743—
66, and his Primæ lineæ Physiologiæ in 1747. His
ours ceased only with his life; his death occurring on the
h December 1777. His grandfather and father and
son were all distinguished men.

17—?—1780. **Joseph Lieutaud,** a native of Aix in Provence; for some years he was a professor at Aix; in 1749 he was appointed physician to the royal hospital at Versailles, and finally to the Court of France. In 1752 he was elected member of the Academy of Sciences. He was eminent both as a practitioner and an anatomist. He wrote Anatomical Essays; Elements of Physiology, and Historia Anatomica Medica, 2 vols 4to. His great work, however, was the Synopsis Universæ Praxeos Medicæ, published in 1765, which contains much information on all topics connected with medicine.

1707—1782. **Sir John Pringle,** an eminent physician and natural philosopher, born at Stitchell House, Roxburghshire, April 10th, 1707. His father was Sir John Pringle, second Baronet of Stitchell, and his mother Magdalen, was daughter of Sir William Gilbert Elliot of Stobbs. He first studied at the university of St. Andrews, and in 1727, commenced the study of medicine at Edinburgh. The following year he went to Leyden, where he took his degree of doctor of medicine on the 20th July 1730. He completed his medical studies at Paris, and afterwards settled at Edinburgh as a physician. In 1734 he was elected to the chair of moral philosophy in the university, but in 1742 he was appointed physician to the Earl of Stair, and in August of that year, physician to the Military Hospital in Flanders. In this capacity, he was present at the battle of Dettingen, June 26, 1743, and throughout the compaign in Flanders in 1744, and in 1745, he received the appointment of Pysician General to the British forces in the Netherlands, and also physician to the Royal Hospitals there. In 1745, he was recalled from Flanders to Scotland to be head of the Medical Department of the British Army under the Duke of Cumberland, assembled against the rebels in Scotland, and at this time he was elected a Fellow of the Royal Society. He remained with the Royal Troops till after the battle of Culloden, April 16, 1746, and in the two succeeding years he again served with the British Army on the Continent, and returned with it to England on peace being declared by the treaty of Aix-la-Chapelle, 1748. From this time he chiefly resided in London, and in 1749 was appointed physician in ordinary to the Duke of Cumberland

1761, physician to the household of the Queen of George ;; in 1763, physician extraordinary to Her Majesty. the same year, he was chosen a member of the ademy of Sciences at Haarlem and fellow of the College Physicians of London, and in 1764 he succeeded Dr. llaston as physician in ordinary to the Queen. In 66, he was created a baronet of Great Britain, in 1772 he s elected President of the Royal Society, and in 1774 sician extraordinary to King George III. In 1776, he ame a member of the Academy of Sciences at Madrid, 1778 he succeeded Linnæus as one of the eight foreign mbers of the Academy of Sciences at Paris; but in 1778 lining health induced him to resign the presidency of Royal Society. He passed part of the summers of 1780 l 1781 in Scotland, but he died in London, January th, 1782. He presented to the Edinburgh College of dicine, three manuscript volumes of medical and physical servations, and in the year after his death his friend Dr. opis, published in one volume the six discourses he had lressed as president of the Royal Society.

—— ?—1763. **William Smellie,** M.D., a celebrated cher of midwifery who successfully practised his pro- ssion at first in the country and afterwards in London. e date and place of his birth are unknown, but he died 1763 at Lanerk in Scotland at an advanced age. From time of Hippocrates an opinion had prevailed that the tus in the womb is in a sitting posture, and that at the hth month, or according to some at the commencement of our, the head is forced down by the contraction of the mb. Smellie was the first to show that the natural posi- n of the head of the fœtus is downwards. He was also first writer who considered the shape and size of the nale pelvis as adapted to the head of the fœtus, and owed that the vertex or crown of the head first enters brim of the pelvis, one ear of the child being turned wards the pubes, the other to the sacrum: but that, en the head has passed through the brim, it makes a lf turn which brings the forehead into the hollow of sacrum, when the vertex rising opens the os exter- m. Chamberlens is supposed to have been the in- ntor of the forceps, but Smellie greatly improved on em and their mode of application. He also improved

the crotchet and scissors. He was of an active and ingenious mind with a solid understanding and judgment, and a peculiar turn to mechanics. He abolished many superstitious and erroneous customs that prevailed in the management of women in labour, and of the children, and he lived to see his maxims adopted in Great Britain and in the greatest part of Europe. In the year 1752 he published a treatise on midwifery, in 1754 a volume of cases which in that and the following year were translated by M. Preville into French. This, with the treatise, made a complete system of midwifery. Also, in 1754, he published in folio a set of 36 life-size anatomical plates with explanations and an abridgment of his practice of midwifery, with a view to illustrate still further his treatise on that subject. He made his way into practice by merit alone, and maintained his reputation by the most beneficent and disinterested conduct.

A. D. 1710—1801. **William Heberden** was born in London in the year 1710. He was educated at Cambridge, where, in 1739, he took his M. D. degree, and continued to lecture and practise there till 1748, when he went to London. In 1760 he married Mary, daughter of Mr. Woollaston. He was one of the largest contributors to the first three volumes of the Medical Transactions, but the most important of his works is the Commentarii de Morborum Historia et Curatione, which Soemmering reprinted in Germany with a preface in which he styles their author the Medicus vere Hippocraticus.

A. D. 1712—1790. **William Cullen** was born in Lanarkshire in Scotland in 1712. He was educated in medicine at Glasgow, became surgeon of a vessel trading to the West Indies, and then settled as a practitioner at first in the parish of Shotts, and subsequently in the town of Hamilton. Here he formed an acquaintance with William Hunter, and the two arranged to take each other's practice alternately, so as to allow of the other attending the Winter Session at Edinburgh. Cullen got the first year and went to Edinburgh. William Hunter took the second year and went to London, where he remained as an Assistant to Dr. Douglas, a lecturer on anatomy and midwifery. Through the interest of the Duke of Hamilton, Cullen obtained, in 1746, in the University of Glasgow, the office of lecturer of

hemistry, and in 1751 he was chosen Regius Professor f Medicine. In 1756 he obtained the chemistry chair in he University of Edinburgh, and at the same time deliver- d clinical lectures at the Royal Infirmary. In 1763 he as appointed Professor of Materia Medica and then re- igned the Chemistry chair to his friend Dr. Black. In 766, he was appointed to lecture on the theory of Medi- ine, and when Dr. Gregory became Professor of the Prac- ice of Medicine, they agreed to combine the two, but on Dr. Gregory's death, Dr. Cullen undertook both till within few months of his death, which happened on the 5th ebruary 1790. Dr. Cullen carried with him the regard nd enthusiasm of his pupils. The foreign students retain- d an indelible impression of his power to awaken and onvince, and by his lectures and his writings he exercised great influence over the state of opinion of medical cience. His great work, entitled First Lines of the Practice of Physic, is the one on which his reputation will rincipally rest; it has been repeatedly reprinted and was ranslated into French, German, Italian and Latin. But he merits of his Institutions, of his Synopsis Nosologiæ Practicæ and of his Lectures on Materia Medica are each f them entitled to a distinguished rank among the writ- gs of the improvers of medical science. His system, as elivered in his First Lines of the Practice of Physic and his lectures, combated successfully that of Boerhaave, f which the humoural pathology forms a part, though Cullen has not been equally successful in establishing is own system. He arranged his diseases into four lasses: (1), pyrexiæ, or febrile diseases, for instance, leurisy; (2), neuroses or nervous diseases, for example, pilepsy; (3), cachexiæ or diseases from a bad habit of ody, as scurvy; (4), locales or local diseases,—which may e regarded as the views of Frederick Hoffman, enlarged. n the formation of his views, he availed himself of the arious improvements that had been made in physiological nowledge by Haller and his pupils, and some of the eading doctrines of his pathology were professedly orrowed from Hoffman, and both Stahl and Hoffman had o a certain extent pre-occupied the ground which was aken by Cullen. But, with all these abatements, his patho- ogy is still regarded with much respect, and establishes

him as one of those who greatly improved the science no less than the practice of his art. He contributed in no small degree to raise Edinburgh to the rank which it long held of the first school of medicine in Europe. In Great Britain, the later writers who have contributed to pathological and practical knowledge, are Gregory, Pringle, M'Bride, Huxham, Fothergill, Cleghorn, Brocklesby, Lind, Rupel, William Hunter, John Hunter, Percival, Withering, Johnstone, Falconer, Heberden, Beattie, Haygarth, Ferriar, Currie, Willan, Bateman, Marcet and Parry.

A. D. 1713—1788. **Percival Pott,** an eminent surgeon, was born in London in 1713. In 1729 he was apprenticed to Mr. Nourse, one of the surgeons of St. Bartholomew's Hospital, and in 1736 he began the practice of his profession. In 1756 he received a severe compound fracture of his leg, and during the confinement which the accident rendered necessary he began writing the practical surgical works for which he has been justly celebrated. His first was on Ruptures; in 1757 on Congenital Hernia; in 1758 on Lachrymal Fistula; in 1760 on Injuries of the Head; in 1762 on Hydrocele; in 1765 on Fistula, and subsequently on fractures and dislocations, on cataract, on polypus of the nose, chimney-sweepers' cancer, mortification of the toes, and on paralysis from the diseases of the spine. Their style is clear, and probably no person of his time had more influence in the improvement of surgery, not indeed by such scientific principles as were introduced by his early pupil John Hunter, but by the introduction of judicious and simple rules of practice in every subject to which he directed his attention. He died in 1788.

A. D. 1718—1783. **William Hunter,** elder brother of John Hunter, was born on the 23rd May 1718 at Long Calderwood near Glasgow. He was of sedate and studious habits from his youth and never married. He entered the Glasgow University in 1732, and remained there for five years studying for the Church, but afterwards, influenced seemingly by his friendship with Cullen, he determined to study medicine, and then took up his residence at Hamilton. The two agreed to visit the Edinburgh University in alternate years; Hunter never went there, however, but in 1741 he visited London, where he studied anatomy under Dr. Nicholls and surgery at St. George's Hos-

gal. In 1744 he obtained a lectureship to a company of rival surgeons. In 1746 he commenced lecturing on anatomy. In 1747 he became a member of the College of Surgeons. In 1749 he finally relinquished mere surgical practice, in order to confine his attention wholly to medicine and midwifery. He was the most scientific man that ever practised as an accoucheur. He was much consulted as a physician in cases requiring peculiar anatomical knowledge for their investigation. In 1750 he obtained his Doctor's degree from Glasgow. In 1755 he became physician to the British Lying-in Hospital. In 1764 he was appointed Physician Extraordinary to the Queen, and in that year he published his medical commentaries. In 1767 he was chosen a Fellow of the Royal Society, and subsequently furnished many valuable papers to its transactions. In 1768 he was appointed Professor of Anatomy to the Royal Academy, which office he discharged with great reputation, adapting his anatomical knowledge to the arts of painting and sculpture. In 1781 he was elected President of the Society of Physicians of London. He formed in his house, in Windmill Street, a splendid anatomical Museum at a great expense, extending it to objects of natural history and general science—medals, shells, corals —with a valuable collection of Greek and Latin books. He bequeathed these to his nephew, Dr. Mathew Baillie, and Mr. Cruickshank, for 30 years, to be then transferred to the University of Glasgow. His largest work is on the anatomy of the gravid uterus. He died in 1783, leaving a large fortune. He had quarrelled with his brother John Hunter on a question as to the anatomy of the placenta, and the reconciliation was never completely restored. Joanna Baillie, his niece, was an authoress and dramatist.

A. D. 1722—1798. **Leopold Auenbrugger von Auenbrug** was born at Gratz in Styria on the 19th of November 1722, and he practised as a physician at Vienna. He was physician to the Spanish nation in the Imperial hospital of that city, and it was there he applied percussion as a means of detecting diseases of the chest. In 1761 he published an account of his discovery as a new invention for detecting by sounds the diseases of the human chest. He died at Vienna 1798. In 1808 Dr. Corvisart of the La Charitè Hospital of Paris published a translation

of it, and in 1824 Dr. John Forbes published a translation of Dr. Auenbrugger's work and of Dr. Corvisart's commentaries. Until that year percussion was little known or practised in England; but in the present day percussion is universally regarded as an indispensable process for discriminating disorders of the chest; and its employment, in conjunction with the more recent invention of auscultation by Laennec, has led to a rapid advance in knowledge of those diseases; percussion is also practised with great advantage in the exploration of diseases of the abdomen.

A. D. 1728—1793. **John Hunter**, born at Long Calderwood in Kilbride near Glasgow A. D. 1728. As an anatomist and physiologist he has had no superior. He received but little education, and from his 17th to his 20th year he worked with his brother-in-law as a cabinet-maker. In 1748 he went to London, where he commenced his anatomical studies under his brother William Hunter, and became the pupil of Pott and of Cheselden at Chelsea College, where he assiduously studied the rudiments of surgery. In 1753 he studied for a short time at Oxford. In 1760 he entered the British Army and was present at the siege of Belle Isle (1761), and afterwards, until 1763, in Portugal; from this he returned to London, where he commenced medical practice, but always regarded it as subsidiary to the scientific studies in which he engaged. He soon became favorably known. In 1767 he was elected a Fellow of the Royal Society, and in 1768 surgeon to St. George's Hospital, where he had as pupils the celebrated Jenner and also Sir Everard Home, whose sister he afterwards married. About this time he erected a building in Leicester Square which he formed into an anatomical museum. His first publication was in 1771, on the Natural History of the Teeth; next, in 1786, on the Venereal Disease; about the same time appeared a quarto volume entitled Observations on various parts of the Animal Economy; and his treatise on the Blood, Inflammation and Gunshot wounds, was one of the last of his literary labors. In 1790 he was promoted to be Inspector-General of Hospitals and Surgeon-General of the Army. He died suddenly in London in the month of October 1793. Government purchased his Museum at his death for £15,000 and it was given in trust to the College of Surgeons. It consisted of 10,000

preparations illustrative of human and comparative anatomy, morbid anatomy, palæontology, physiology, pathology and natural history, to illustrate the whole subject of life by preparations of the bodies in which its phenomena are presented. They form probably the most valuable collections of the kind on record. They were disposed in two main divisions; the first, in illustration of the functions which minister to the necessities of the individual; the second, of those which provide for the continuance of the species. 24 Museum lectures are annually delivered by the Hunterian Professor, the subjects of which must be illustrated by the preparations in the Hunterian collections, and from the other contents of the museum; and on the 14th February of each year, the anniversary of Hunter's birth, an oration is delivered in commemoration of John Hunter, or of others who have been distinguished in medical science. His labors and industry were prodigious; the manual dexterity exhibited in displaying the various objects is fully equal to the intellectual power which determined their arrangement, and besides preparing specimens he wrote largely. For years before his death he had been anxious to form a complete catalogue of his collection, and to embody in one large volume the results of all his labors and observations, but he died when but a small portion was completed, and left only the materials in 19 folio manuscript volumes. These were taken without leave from the College of Surgeons by his brother-in-law, Sir Everard Home, who burned them, alleging that Mr. Hunter had verbally told him to do so, amongst them being the ten volumes of dissections and numerous other original papers. It is supposed that many, if not all, the six quarto volumes that Sir Everard Home published, originally in the Philosophical Translations and subsequently collected in those six volnmes, were taken from or suggested by John Hunter's writings, and that the burning was made to destroy the evidences for the plagiarism. As an anatomist and physiologist John Hunter had no superior. As a natural historian, his merits were of no ordinary character. He is considered the greatest man that ever practised surgery; his writings on surgery were valuable, and by the general tone of scientific investigation which he gave to surgical practice, he greatly improved it. Before his time,

surgery was a mechanical art. John Hunter first made it a science, and by pointing out its peculiar excellence as affording visible examples of the effects and progress of disease he induced men of far higher attainments than those who had practised it to make it a study. The previous history of Surgery, in Europe, is brief: In 1163, the clergy had been prohibited by a general council from employing any treatment which caused the effusion of blood, and Pope Boniface VIII, at the close of the 13th century, strictly interdicted them from meddling with surgery; and from this time, for nearly four hundred years, this branch of the medical profession fell into the hands of illiterate men. Joannes Pitard in the end of the 13th century effected a great revolution in surgery. He procured the foundation of the College of Surgeons at Paris, the first instance, it would seem, of the distinct separation of surgeons as a faculty from the profession of physic. This society required as a qualification from those they admitted among them, a knowledge of literature and medicine. The fellows of this society were, from the dress they assumed, termed "Chirurgiens de Robe Longue." It was however only in 1437 that this body was recognized by the physicians and admitted into the university on the condition that they should attend the medical schools. In the 13th century also lived Gilbertus Anglicanus, a great traveller who lived about the time of Edward I. He was a great traveller and wrote the Compendium Medicinæ, a work principally compiled from the Arabian writers and which contains some parts of surgery. In 1284 Bernard Gordon, a Scotsman, was professor at Montpellier. In the book he wrote there is much of surgery and of diseases of the eye. Guy de Chauliac, a native of France, was physician to Pope Urban V. While at Avignon, he compiled a work from previous authorities with some care, a work which for a long time, remained the standard book in this department. But Rogerius of Salernum is accounted the earliest of modern surgeons. He seems to have lived at the end of the 15th century, at which time his books were printed.

A. D. 1729—1799. **Lazaro Spallanzani,** a celebrated Italian naturalist and philosopher, born on the 12th January 1729 at Scandiano near Reggio, in the Duchy of

odena. He studied at Reggio and at Bologna under
ura Bassi, the celebrated female professor of Physics
that place. From 1761 to 1769 he was professor of
atural History at Modena, and from the latter year till his
ath at Pavia. In the intervals of his lectures he travelled
several countries; in 1779 through the Swiss cantons; in
85 to Corfu, Cerigo and Constantinople; and in 1788
rough the two Sicilies and part of the Appenines, to
llect volcanic products for the museum at Pavia. His
bors were principally directed to elucidating the subject
the circulation of the blood, the functions of digestion,
spiration and generation, on infusory animalcules, on
imal and vegetable physics, and on the transpiration of
ants, on all of which he published treatises, viz., Experi-
ents on the reproduction of animals; Essay upon Animal-
llæ in Fluids; Microscopical Experiments; Memoirs on
e Circulation of the Blood; Travels in the two Sicilies and
e Appenines. He died at Pavia of apoplexy on the 12th
bruary 1799, aged 70.

A. D. 1733—1804 ? **Joseph Priestley,** an eminent
ilosopher of England, was born at Fieldhead on the 13th
arch 1733, old style. His education embraced many
bjects, and he early entered on inquiries into doctrinal
ints regarding the christian religion. He travelled with
e Earl of Shelburne through France, Flanders, Holland
d Germany, and finally settled in Birmingham. Between
61 and1791 he wrote many books on various subjects,
t in 1768 he turned his attention to pneumatic chemis-
y, and it is as a chemical discoverer he is famed. No one
er entered on the study of chemistry with more disad-
ntages, and yet few have occupied a more dignified
ation in it or have contributed a greater number of new
important facts. He discovered oxygen gas, (1774),
rous gas, nitrous oxide gas, nitrous vapour, carbonic
ide gas, sulphurous oxide gas, fluoric acid gas, muriatic
s and ammoniacal gas. He showed that the red color
arterial blood results from its combination with the
ygen of the atmosphere, that the change produced in
nospheric air during the process of combustion and pu-
faction arises from a similar abstraction of oxygen, and
recognized the property possessed by vegetables of
storing the constituent thus abstracted. His discoveries

were acknowledged by his contemporaries. He was elected a Member of the Royal Society, the University of Edinburgh bestowed on him the honorary title of Doctor of Laws, and in 1773 he was awarded the Copley Medal for his observations on the different kinds of air. But, on the 14th July 1791, a mob, excited against his religious views, broke into his house, destroyed his philosophical apparatus, a valuable library, and a large number of manuscripts, the result of many years' labor; they then made an unsuccessful attempt to burn the dwelling, and he had to flee for his life. Finding that many of his philosophical associates shunned him, on the 7th April 1794 he embarked with his family for America, and took up his abode at Northumberland in Pennsylvania. But there, too, from his religious views, and being a citizen of France, he was shunned; his wife died in 1796, and after a prolonged ill-health he died on the 6th February 1804. On the 1st August 1874, however, on the centenary of his discovery of oxygen, the learned men of Britain erected a statue to his memory in Birmingham, the town where his house had been destroyed, and from which he had to flee for his life. His discoveries can best be understood by mentioning that at the beginning of the 18th century hardly any one suspected the truth of the ancient doctrine that air and water and fire are elements. But, about 1755, Dr. Black of Edinburgh showed that what was then called fixed air, was capable of uniting with such matters as lime and alkali, and could be got again from these. In 1766 Henry Cavendish discovered hydrogen, which he termed inflammable air, and immediately afterwards Dr. Priestley began his experiments, and the number of discoveries he made were marvellous; he trebled the number of known gases, and on the 1st August 1774 he made the discovery of oxygen, which contributed essentially to the discovery of the true composition of water.

1741—1821. **James Carmichael Smyth,** an eminent physician, son of Thomas Carmichael of Balmedie and of his wife Margaret Smyth of Athenry. He studied and graduated at Edinburgh, then visited France, Italy and Holland, and finally in 1768 settled in London, where he was appointed physician to the Middlesex Hospital. He directed particular attention to measures for preventing

ntagion in fevers, and for his discovery that nitrous acid pour is of great value as a disinfectant, the British Parliament rewarded him with £5,000. He was a fellow of the oyal College of Physicians of London, also of the Royal ociety, and Physician Extraordinary to King George III. e died on the 18th June 1821. His eldest daughter arried Dr. Alexander Monro, the third professor of anamy in the University of Edinburgh; and in 1821 a baroetcy was conferred on his eldest son, Sir James Carmichael myth, and several others of his relatives have been ominent and distinguished men.

1742—1794? **Antoine Laurente Lavoisier,** eminent chemical philosopher of France, who was rn at Paris on the 16th August 1742. He received a eral education and travelled with M. Guettard into every rt of France. In the 23rd year of his age, the Academy Sciences awarded him a gold medal for a memoir on e best and cheapest manner of lighting the streets of a eat city. The discoveries of Black, Cavendish, MacBride d Priestley had already drawn many to the study chemistry, and in 1775, Lavoisier presented to the ademy his first work, "New Researches into the Existnce of elastic Fluids fixed in certain substances." He ve order to the facts already known. His house was a eat laboratory, where he was visited by Priestley, Fontana, agden, Ingenhousz, Landriani, Jacquin fils, Watt, ulton, and other illustrious physicians, chemists, and ists from Britain, Germany and Italy, where they met Place, La Grange, Borda, Cousin, Meunier, Monge, ndermonde, Guyton, Berthollet and other eminent men France. From 1776 to 1792, there flourished the school chemistry which he started. In 1775 his Opuscules emiques et Physique appeared: in 1777 his instructions the Saltpetre manufacture: and in 1789 he gave to the rld his Elementary Treatise on Chemistry. His valuable rk on agriculture, has the title of the Territorial Riches France. He was also the author of 60 memoirs. In 1787 was member of the Provincial Assembly of the leannois, and in 1791 was appointed to the National easury. During a reign in France of violent demagogues voisier was accused of having, as Farmer General, mixed ter and noxious ingredients with tobacco; he was tried

and sentenced to death, and he was beheaded by the guillotine on the 8th May 1794.

A. D. 1749—1823. **Edward Jenner,** a great benefactor of the human race, was born 17th May 1749 at Berkeley in Gloucestershire, of which place his father was Vicar. He was the youngest son and was educated at Cirencester, afterwards apprenticed to Mr. Ludlow, a surgeon at Sudbury, and when his apprenticeship was over he went to London, and became a pupil of John Hunter, with whom he resided for two years, while studying medicine at St. George's Hospital. In 1773 he returned to his native village, and practised as a Surgeon and Apothecary till 1792, when he determined to confine himself to medicine, and with this object he obtained the degree of Doctor of Medicine at St. Andrew's University. About the year 1766 he had learned from the people of Sudbury their belief that persons who had had cow-pox could not be inoculated with, nor take, small-pox, and about the year 1780 he began to entertain the idea that it might be possible to propagate the cow-pox first from the cow and then from one person to another and thereby give security from small-pox. Accordingly, on the 14th May 1796, a boy eight years of age was vaccinated with matter taken from the hands of a milkmaid; he passed through the disorder in a satisfactory manner and was afterwards inoculated for small-pox on the 1st of July following without the least effect. Dr. Jenner then entered on an extensive series of experiments of the same kind, and in 1798 published his first memoir "An enquiry into the causes and effects of the Variolæ Vaccinæ." It excited the greatest interest, and met with severe and unfair opposition, but in 1799 seventy of the principal physicians and surgeons of London signed a declaration of their entire confidence in it. Scientific honors then flowed in upon him from all quarters, from the University of Oxford, from the Royal Society, and from foreign Universities and Potentates. The British Parliament in 1802 decreed him a reward of £10,000, and in 1807 another of £20,000. He was invited to settle in London, but he preferred to remain in his native place, where he died suddenly of apoplexy on the 26th January 1823. Dr. Baron wrote a history of his life, and a statue was erected to his honor in his native county.

1761—1823. **Matthew Baillie,** an eminent anatomist and physician, was born on the 27th October 1761 at the manse of Shotts, in Lanarkshire, Scotland. His father, the Reverend James Baillie, was minister of the parish; his mother, Dorothea Hunter, was sister of the two eminent anatomists William Hunter and John Hunter. After his schooling at Hamilton, he was educated at Glasgow University, then in 1779 at Oxford, and subsequently at term time in the intervening periods attending the lectures of his uncle Dr. William Hunter, in whose anatomical theatre in 1781 he became demonstrator. William Hunter died in 1783 and bequeathed to him his museum, his anatomical theatre, and house in Great Windmill street, a small estate in Scotland, and an annuity of £100 a year. In 1785 Matthew Baillie, though only in his 25th year, in conjunction with Mr. Cruikshanks, gave his first course of anatomical lectures, which were attended by a large concourse of students. In his introductory lecture he seems to have anticipated the now generally received opinion, that the vital actions of the body, morbid as well as healthy, are carried on in the extreme vessels, or more minute tissues of the organs. He devoted himself to the investigation of the healthy structure of the organs of the human body and their functions, as well as the deviations from these in the various morbid structures. He took every opportunity of preserving morbid structures, and thus formed a museum of great value, which, during his lifetime, he presented to the College of Physicians. In 1787 he was appointed physician to St. George's Hospital, where his assiduity and natural powers of observation, aided by his great knowledge, his clear perception and correct reasoning powers, soon made him highly distinguished for his power of discriminating diseases in the living body, or in what is technically termed the diagnosis of disease. In 1795 he published a work on Morbid Anatomy. It is a treatise of honestly recorded facts, simple, short and perspicuous, which has been justly estimated as one of the most practically useful and valuable acquisitions to medical science. It was soon translated into French, Italian and German. It has gone through many editions, five in his life-time. About four years after, he began to publish engravings for its illustration. To a second edition of his Morbid Anatomy publish-

ed in 1797, he added the symptoms of the different morbid lesions described in it, so far as they were known. He also edited William Hunter's book on the gravid uterus left behind in MSS., and 1799 he resigned his office of Physician to St. George's Hospital, ceased to lecture on anatomy, and applied himself solely to his medical practice. He died on the 23rd September 1823 in the 63rd year of his age at his seat, Duntisbourne House in Gloucestershire. His works were republished in London in 1825 in 2 vols 8vo.

1763—?—1831. **John Abernethy,** a distinguished anatomist, physiologist, pathologist and surgeon and eminent as a teacher. The year and place of his birth are unascertained; the year 1763-4 at the town of Abernethy in Scotland, or at the town of Derry in Ireland, have been named also the year 1765 in London in a house in front of Finsbury Square, his father being a merchant in London. After the usual school education, he was apprenticed to Sir Charles Blick, surgeon to St. Bartholomew's hospital, to which office he succeeded on the death of his former master. Abernethy was a pupil of John Hunter who inspired him with that ardent love of physiology by the application of which to surgery he converted a rude art into a beautiful science. He obtained a thorough insight into anatomy and physiology, and applied the knowledge to the treatment of disease. His views were well put forward in his Hunterian lecture where he says: How absurd should we deem the conduct of a mechanic whose business it was to rectify the errors of any complex machine, should he merely provide himself with the finest and fittest tools for the purpose and neglect to learn its mechanism, by which alone he can be able to discover the causes of the error, or stoppage of its different movements, and consequently, what is wanting to be done to render it again perfect or useful. Yet equally absurd would be the conduct of medical men were they to study botany, pharmacy, chemistry and natural philosophy, searching indeed through all the paths of nature and the stores of art for means of cure, and yet neglect anatomy, by which alone they can be able to distinguish the nature of the difference between health and disease, and consequently, what is requisite to reconvert the latter into the former, which is the only circumstance that can render medicine a science.

In his work entitled the Constitutional Origin and Treatment of Local Diseases, he laid down the great principle that local diseases are symptoms of a disordered constitution not primary and independent maladies, and that they are to be cured by remedies calculated to make a salutary impression on the general frame, not by topical dressing nor any mere manipulations of surgery. This single principle changed the aspect of the entire field of surgery and elevated it from a manual art into the rank of a science. To this principle he added a second, viz., that this disordered state of the constitution either originates from or is rigorously allied with derangements of the stomach and bowels, and that it can only be reached by remedies which first exercise a curative influence on these organs. The benefit daily conferred upon mankind by the elucidation and establishment of these two principles both by the prevention and alleviation of disease and suffering, it were vain to attempt to estimate, and it is not easy to pay to their author the debt of gratitude which is their due. He died at Enfield, 18th April 1831. He was highly honorable in all his transactions, and incapable of duplicity, meanness, artifice or servility. In his domestic circle, he was gentle and playful, tender and affectionate, and he was beloved by all the members of his family. In public, and more particularly to his patients, his manners were coarse capricious, churlish, and sometimes even brutal. He published may tracts on the diseases to which he directed his attention, and a collected edition of his surgical works appeared in 1815, in 2 vols. 8vo.

1766—1841. **Baron Dominique Jean de Larrey,** an Army Surgeon, who rose to be Surgeon-in-Chief of the Army of the French nation, and one of the most distinguished surgeons of France. He was born in July 1766 at Beaudeau near Bagneres de Bigorre in the department of the Upper Pyrenees in France. He attended the hospital at Toulouse and then studied in Paris, where he got employment as a Naval Surgeon, in which capacity he visited North America. In 1792, at the outbreak of a revolution in France he joined the French Army on the Rhine. He distinguished himself by the invention of carriages termed 'flying ambulances' by means of which the wounded having first been dressed, were carried off the field

of battle even under the fire of batteries. In 1796 he was appointed a Professor in the school of Medicine and Surgery at Val-de-Grace. In 1798 he accompanied Napoleon to the invasion of Egypt, of which he published an account, and was present in the battles of that great man at Bautzen and Wurchen, where he gave proofs of his courage, sagacity and zeal. After the battle of Wagram he was made a Baron of the Empire; during the passage of the Berezina he performed an important operation on the General Zajonczek then 80 years old. In the battle of Waterloo, Larrey was wounded and taken prisoner. The Emperor Napoleon willed to him 100,000 francs, at the same time expressing the conviction that Larrey was the most virtuous man he had ever known. In 1797 he published a Dissertation recommending immediate amputation after gunshot wounds and issued a new edition of this in 1808; in 1803 his Observations on Egypt and Syria; in 1812 his Memoirs on Military Surgery, and besides these a multitude of papers in Medical and Surgical Journals. The bulletins of the Academy of Paris bear testimony to the enlightened principles on which he based the practice of his profession, and which obtained for him a first position among modern surgeons. He died at Lyons on the 25th July 1841 at the age of 75.

1771—1802. **Marie Francois Xavier Bichat,** an eminent anatomist and physiologist of France, born 14th November 1771 at Thoirette near Bourg, in the present department of Ain. He was the eldest son of Dr. Jean Baptiste Bichat of the Montpellier University. He commenced the study of practical anatomy under his father's tuition and under that of M. Petit of Lyons, but in 1793 he went to Paris in order to study surgery under the celebrated Dessault, with whom he remained for two years as a friend and pupil until Dessault died. After this event the first care of Bichat was to collect, arrange, and publish the works of his teacher. This he occupied himself with during the night, giving the day to his duty as a professor and physician of the Hotel Dieu at Paris, a school for teaching anatomy, physiology and surgery, dissecting for his own lectures, carrying on an extensive series of experiments on living animals, and giving a course of operative surgery. Such vast labor, beyond the

strength of any human being, destroyed his health he was attacked with hæmoptysis, from which he rallied, but resumed his labors with the same intensity as before. One day his foot slipped as he was descending the steps of the Hotel Dieu, and he was rendered insensible from a blow he received on his head. Again resuming his avocations he fainted from fatigue, and this was followed by fever that assumed a typhoid character which proved fatal on the 4th day of the attack. Thus perished at the age of thirty, a man of extraordinary genius and energy, a melancholy example of a life which promised to be one of uncommon brilliance and usefulness, cut short by the intensity of its devotion to science. Bichat gave an impulse to the progress of physiology which is still powerfully felt in every country in which this branch of science is studied. The history of physiology is intimately connected with that of medicine. Hippocrates (born B. C. 460) styled the Father of Medicine, had but a very imperfect knowledge of the human organization, and very limited views of the origin of life. Galen (born A. D. 131), possessing some knowledge of anatomy, composed a better system of physiology. From him originated the division of the functions into vital, animal, and natural, which has maintained itself down to the present time. The discovery by Harvey (born A. D. 1578) of the circulation of the blood was a great step, though several who came after him attempted to explain the phenomena of life by mere mechanical and hydraulic principles. It is Haller (born A. D. 1708) who opened an entirely new epoch by announcing the theory of the irritability of the fibre. This has been made the basis of many theories, all of which have disappeared before the enlightened views of Bichat. He was the first, by a systematic analysis, to reduce the complex structures of the body to their elementary tissues, and to ascertain the properties, physical, chemical, and vital, which belong to each simple tissue. His work, "Anatomie General," shows minute and laborious research, elaborate and extended experiment, and great manual and practical skill; and if he never had written anything else, it alone would have given him immortality, showing as it does, in the general conclusions deduced and established, a truly philosophical mind. It was universally recognized as a work of extraordinary genius.

It was followed by his "Anatomie Descriptive," and an elaborate work, the Physiological Researches on Life and Death, in which he suggested and developed the distinction between the organic and animal life, a distinction of scarcely less importance to the surgeon and physician than to the speculative and experimentalising physiologist. He died in 1802. Worthy successors of Bichat, among French physiologists are: Vic d'Azyr, Cuvier, Richerand, Majendie, Des Moulins, Edwards, Velpeau, Adelon, Serres, Marcet, Prevost, Dumas, Le Canu, Denis, Blainville, Flourens, Gendrin, Laennec, Leuret, Le Gallois, St. Hilaire, Dutrochet, Chossat, Du Long, Desprets, Lassaigne: In Germany, Camper, Blumenbach, Ludwig, Schrœder, Soemmering, Meckel, Wrisburg, Reil, Tiedemann, Baer, Wenzel, Sprengel, Jacobsen, Carus, Pfaff, Oken, Osiander, Ackermann, Rosenmuller, Gmelin, and Treviranus: In England, J. Hunter, Hewson, Cruickshanks, Brodie, Cullen, Fergusson, Johnson, Marshall, Marcet, Prout, Lawrence, Pritchard, Barry, Hastings, Davy, Benjamin, Wilson-Phillip, Bostock, Hey, Thackrah, Babington, Abercrombie, Haighton, Blundell, Lee, Home, Charles Bell, Mr. Shaw, Thomson, Hastings, Black, Allen Thomson, Sir Astley Cooper, Marshall Hall, and Mayo: In Italy Rolando, and Bellingeri, in Holland Van der Kolk, and in America Drs. Rush and Bancroft.

A. D. 1774—1842. **Sir Charles Bell** was born at Edinburgh, A. D. 1774. He was one of the most distinguished anatomists in modern times, ranking as a discoverer equal to Harvey. In 1806 he published in London the "Anatomy of Expression," in 1807 his "System of Operative Surgery" appeared, and in 1828-9 that on Animal Mechanics. He was the author of the "Bridgewater Treatise on the Hand," and of illustrations to Paley's Theology. He was successively surgeon to the Middlesex Hospital (1814), Professor of Physiology in the University of London (1830); and in 1836 Professor of Surgery in the Edinburgh University. His great discovery was as regards the nervous system. He had been teaching it since 1810, but his first paper on the subject was read before the Royal Society in 1821. The older anatomists believed all nerves alike capable of conveying motion and sensation; the essence of Sir Charles Bell's discovery was that every nerve has a distinct function according to the part of the brain or spinal marrow

tth which it is connected. Although sometimes as many three different nerves are bound up together in the same eath for convenience of distribution to the organs they e intended to supply, and though after having become us united it is impossible to distinguish one fibril from other, yet at their connections with the brain and spinal arrow their several roots are quite distinct. He showed at those roots which are connected with the back part of e spinal marrow are all nerves of feeling and incapable giving power of motion to the muscles, in short, that ey are the bearers of messages from the body to the ain: and that all the roots of nerves connected with the nt or anterior column of the spinal marrow, and that rtion of the brain connected with it, are nerves of volun- ry motion only, and the messengers of the will to the dy. He farther discovered that there are nerves which ise from a portion of the brain and spinal marrow inter- diate between the sensitive and motor tract of nervous atter, whose office it is to regulate the involuntary otions connected with respiration and the expression of e passions. In like manner, the nerves of the special nses, seeing, smelling and hearing, enter distinct portions the brain that form as much parts of the organs of these nses as the eye, nose, or ear. His discoveries opened up the anatomist and the naturalist hitherto concealed enues to knowledge, also afforded a guide previously anting to the surgeon in his operations, and rescued the hole treatment of nervous disorders from the dominion mere empiricism. He threw out many hints of great lue in lectures and short essays. Cuvier, Larrey and her illustrious men vied with one another in testifying eir admiration of his talents and labors, and King William 7 selected him for knighthood along with Herschel, ewster, and others. He died at Hallow Park, the seat rs. Holland, on his way to London, on the 27th April 1842.

1778—1841. **Augustin Pyrame de Candolle** as born at Geneva in 1778 of a family distinguished in lite- ture since two hundred years. In 1778, the year that aller, Linnæus and Bernard de Jussieu died, De Candolle came professor of botany at Montpellier in France, and ised the botanical garden there to a high condition, but litical adversaries caused his removal in 1814? His

native city, however, in 1816, formed a botanical garden, which was placed under his care, and created a professorship of botany, to the chair of which he was appointed. He published many books; in 1799, Plantarum Succulentarum Historia in 4 volumes; in 1803 his Astrologia; in 1809-1815, aided by Lamarque, Flore Française, in 6 volumes; in 1813 a catalogue of the plants in the Montpellier botanical gardens, and also his great work Regni Vegetabilis Systema Naturale, his Prodromus Systematis Naturalis Regni Vegetabilis, and Theorie Elementarie de la Botanique. His name ranks as a botanist after the great Swedish naturalist Linnæus and the French botanist Bernard de Jussieu. He died on the 9th September 1841.

1781—1826. **Réné Theophile Hyacinthe Laennec** was born at Quimper in Lower Brittany in 1781, and received from his uncle at Nantes, the first part of his medical education. In 1800 he went to Paris, where he pursued the several medical courses of study, and attended at the hospital of La Charité under Dr. Corvisart; in 1814 he took the degrees of Medicine. He edited the Journal of Medicine and became well known in practice; he was in 1816 chosen Chief Physician to the Necker Hospital, and it was there that he soon after made the discovery of the stethoscope as an aid to the ear in examining the sounds of the organs of the body. In the present day three methods are known for detecting diseases of the chest by the help of the sense of hearing. They are called "succussion," "percussion" and "auscultation." Succussion is mentioned by Hippocrates, and seems to have been commonly employed in his time for the diagnosis of empyema, a disease in which the pleural cavity is partly occupied by a liquid. This mode of examination consists in shaking the patient by the shoulders and listening to the sound of fluctuation. Dr. Leopold Auenbrugger von Auenbrug in the year 1761 published an account of the discovery he had made of percussion as a means of detecting diseases of the chest, and in the present day this is universally regarded as an indispensable process for discriminating disorders of that cavity: and in conjunction with auscultation invented by Corvisart and improved on by Laennec, it has led to a rapid advance in a knowledge of those diseases. Percussion is also practised with great ad-

ntage in the exploration of diseases of the abdomen. Dr. rrvisart, about A. D. 1800, as a means of ascertaining the unds of the chest, placed the ear directly on it, which was lled from this immediate auscultation, and about 1817 s pupil Dr. Laennec, for the same object, invented an strument called the stethoscope for mediate auscultation, hich is undoubtedly one of the most important discoveries medical science of the present century. He was then ysician of the Necker Hospital at Paris. In 1818 he ad his first memoir on it, and in 1819 he published his eatise on Mediate Auscultation. He lost his health then rm his great labor, and left Paris, to which he returned in 21, and continued physician of the Necker Hospital till 26, when it was discovered by means of his own invention at consumption had set in, and he retired to Brittany, here he died. His invention of the stethoscope induced m to apply himself to the investigation of diseases of the est, and he so far elucidated their pathology, that though ch diseases at the beginning of the 19th century were volved in the greatest obscurity, they are now the most mpletely and clearly known of all which fall within the ovince of the physician, who now studies them with the r with almost as great accuracy and confidence as the rgeon can investigate with the eye or the hand, the seases of which he takes charge. Auscultation is also rgely applied to ascertain the action of the heart of the tus during pregnancy and during labor. Laennec pub-hed several works of importance; that on auscultation as translated by Dr. Edward Forbes. In the present day edical science owes much to physical science, especially acoustics, optics, chemistry and electricity, and odern medical education is distinguished by its accu-cy. The application of instruments of precision, as e thermometer, the sphygmograph, the endoscope, thoscope, ophthalmoscope, laryngoscope and other ntrivances for extending sensual perceptions into the in-rior of the body, together with microscopical and chemi-l analyses, enable the physician to observe, to record, d to compare the phenomena of health and disease to ch a degree as to bring medicine nearer and nearer to an act science. The discovery and differential diagnosis auscultation of the normal and abnormal states of

the heart, arteries, air-tubes, pulmonary cells, and in many instances of the abdominal viscera, has been carried to a great point of advance. Practical and invaluable evidences are supplied by the ophthalmoscope which has revealed not alone changes of the eye, but of organs distant from the eye—cerebral, cardiac, and embolic disease. The endoscope enables the surgeon to discover, to study and measure a vesicle calculus, an almost capillary stricture, and to direct a local treatment to an ulcerated state of the intestinal surface. The discovery and application of anæsthetics, whether they be used by inhalation or direct contact with the part, enables the medical attendant to prevent all pain The loss of blood too, under the knife of the surgeon, is prevented in most cases by the method of Esmarch, so that an operation may be performed not only without pain, but without the loss of a single drop of blood. The clinical thermometer is in the hands of every physician and for the diagnosis of certain diseases is of great value. The modern microscope has afforded extended vision. The delicate instruments for lithotrity, perfected by the genius of Sir Henry Thompson, have added another mode of treating stone in the bladder. But the most recently invented instrument for use by medical practitioners, is the sphygmograph, devised by M. Maurey, author of "Animal Mechanics." It registers in the form of a curve or series of curves, the beatings of the human pulse; on being attached to the wrist, a pretty mechanical arrangement produces, on a sliding scale, a varying curve showing the condition of the pulse during the time for which the instrument is attached. The curves vary with the condition of the patient, and, given the same condition, appear to be constant.

1783—1862. **Sir Benjamin Collins Brodie,** Baronet, was born in 1783 at Winterslow, in Wiltshire. He was educated for the medical profession at Mr. Wilson's Anatomical School in Great Windmill Street, London, and at St. George's Hospital, where he was a pupil of Sir Everard Home. He afterwards lectured on anatomy jointly with Mr. Wilson, was elected in 1808 assistant surgeon to St. George's Hospital, and subsequently its surgeon. In 1811 he was presented by the Royal Society with the Copley Medal for his papers on physiology. In

32 he was appointed Sergeant Surgeon to the Queen, s created a Baronet in 1834, and in 1850 the University Oxford conferred on him the degree of Doctor of Laws. wrote on Nervous Affections, Pathological and Surgical servations, Diseases of the Joints, Lectures on Diseases the Urinary Organs, Physiological Researches, and rchological Inquiries. He died 21st October 1862.

?—1835? **William Twining** was born in Nova otia, at the town of Halifax, where he was apprenticed a medical practitioner but afterwards studied in London. entered the medical department of the British Army 1812, serving in the Peninsula and Netherlands and gland until 1821, when he went to Ceylon. From there accompanied the governor Sir Edward Paget to India. 1830 he resigned the British Service and entered into vate practice in Calcutta, where he was appointed one the surgeons to the Civil Hospital; he died suddenly, in h reputation, in 1835. In the middle of the 18th century d had recommended the use of ipecacuan in dysentery it had been again forgotten until William Twining advoed its employment. Numerous articles from his pen peared in the Transactions of the Medical Society of lcutta, but his chief work was his clinical illustrations the more important diseases of Bengal with the result of inquiry as to their pathology and treatment. It went ough two editions. It is one of the few medical works practitioners in India to be found in the libraries of fessional men in that country.

7—?—18? **Sir William Lawrence,** an eminent geon of England, devoted to the study of anatomy l physiology, an extensive writer on surgical subjects, whose accurate anatomical knowledge, surgery was ebted for advancement. Besides numerous papers in medical journals, his most important works were the atomic, Chirurgical Descriptions, and Views of the nose, uth, larynx and fauces, and of the male and female vis; and treatises on the venereal diseases, and on the . A complete set of his lectures were printed in the *ncet*. From 1815 to 1819 he was professor of surgery l anatomy to the Royal College of Surgeons of Engd, and it was then he delivered his lectures on the ysiology, Zoology and Natural History of Man, and

published his Introduction to Comparative Anatomy and Physiology. He was a determined advocate for medical reform. He received many honors from many public bodies; he was in later life President of the Royal College of Surgeons elected a Fellow of the Royal Society, a member of the Academy of Sciences of Gottingen, Stockholm, and Copenhagen, of the American Philosophical Society, and of the Natural Institute of America, also a foreign associate of the Royal Academy of Medicine of Paris, a corresponding member of the Royal Academy of Medicine of Belgium and of the Medico Chirurgical Society of Berlin.

1794—1847. **Robert Liston,** an eminent surgeon, son of the Rev. Henry Liston, minister of Ecclesmachen, was born at the masne there 28th October 1794. He studied medicine in Edinburgh and London, and in 1815 was appointed House Surgeon of the Royal Infirmary of Edinburgh; in 1817 he commenced practice there as a surgeon, and from 1822 to 1834 he was a lecturer there at first on anatomy and afterwards on surgery. In 1834 he went to London and was appointed surgeon to the North London Hospital, and in 1846 was chosen one of the examiners of the Royal College of Surgeons. About the year 1846 he began to be troubled with an obscure affection of the throat, which after his death at the age of 53 on the 7th December 1847 was found to be from an aneurism of the aorta. In 1833 he published his Principles of Surgery, and in 1840, his Elements of Surgery. He published a text-book on surgery for his students. He was remarkable for the extent of his anatomical knowledge and for his boldness and manual skill in operating. He made a modification of the long splint of Dessault, which is now everywhere used in fractures of the thigh bone under the name of Liston's Long Splint.

17—?—18—? **Mr. Fox,** an eminent professor of Dental Surgery. In the demand for exactness which necessarily arises on any branch of science attaining such a development as to require for its study and prosecution all the time and abilities of an individual, it follows that men professing special qualifications devote themselves to particular lines, and at the present day, amongst the nations who have advanced in civilization, there are to be found obstetricians, aurists, oculists, dentists, &c. The first in Britain to write on the

ubject of dentistry was the eminent anatomist and physio-
gist John Hunter, whose Treatise on the Natural History
the Human Teeth in 2 volumes 8vo. appeared in the
ears 1771—78. After him, in 1801, Dr. Blake of Dublin
ublished an excellent work, descriptive of the state of the
ulp and alveoli in the fœtus, but Mr. Fox was the first in
reat Britain to practise dentistry as a speciality, and to
cture at Guy's Hospital on Dental Surgery. In 1803, he
ut forth his celebrated work on this branch of medicine,
which he accurately described the development of
e teeth. Since then, in 1815, Delabarre published a
luable work on Odontology, and in 1819 a treatise on
cond dentition: he also wrote upon Mechanical Dentistry.
n 1827, the work of M. Rousseau appeared on the Compa-
tive Anatomy of the Dental System in Man and Animals.
n 1829, Mr .Bell, who had succeeded Mr. Fox as
cturer on Dental Surgery at Guy's Hospital, published
s well-known work on the teeth. In 1835 there appeared
r. Robertson's book on Caries of the Teeth, which he
tributed to chemical decomposition. In 1839, Mr.
asmyth analysed the works of the principal writers,
d in 1841, he gave a memoir on the 'Development and
tructure of the Teeth,' and subsequently, in 1849,
nother work on 'Diseases of the Teeth.' In 1848, Mr.
omes, F. R. S., wrote his admirable book on 'Dental
hysiology and Surgery', and in 1859 a system of
ental Surgery which is now a text-book. In 1846 Mr.
obinson's book appeared on the Teeth Surgical as well as
echanical. In 1850 Dr. C. Harris, one of the most
minent dental surgeons in America, published a very
mprehensive work on the 'Practice of Dental Surgery.'
n 1854, Dr. Piggot published a valuable work on
Dental Chemistry and Metallurgy,' and amongst other
merican authors may be added the names of Drs.
oddard, Paramby, Fitch, Arthur, Bond, &c., all of
hom wrote practical works on dental surgery. In 1868,
r. Coles brought out his excellent book on 'Deformities
the Mouth and their Mechanical Treatment.' In 1874
r. Salter published a work on 'Dental Pathology and
rgery.' From 1860 to 1875 numerous able and
ientific papers were read on dental surgery, before the
ontological Society of Great Britain amongst which may

be mentioned the writings of Saunders, Cattlin, Cartwright, Coleman, Bridgman, C. Tomes, Truman, Bartlett, Woodhouse, Mummery, Parkinson, Rogers, and others, who have ably contributed to the literature of the subject.

— ? 1871 ? **Von Graefe,** an eminent oculist. It is recorded that the book of Hermes Misrus, the son of Menes, the first king of Egypt, contains descriptions of the surgical operations and diseases of the eye. Among the Greeks, Chiron was celebrated for his treatment of eye ailments: Herodotus mentions that there were Egyptian oculists in the time of Cyrus, and that prince begged Amasis to send one to him. The aphorisms of Hippocrates contain many passages relating to the treatment of eye diseases; Diocles Carystius, who invented a panchrist or polychrist for inflammations of the eye, is spoken of by Celsus as one of the greatest surgeons in ancient times, and we learn from Oribasius that Erasistratus proposed a panchrist and various liquid applications for the eye. The account which Celsus affords of diseases of the eye and of ophthalmic surgery, marks the extent to which these departments of the healing art had been carried between the time of Alexander the Great and the age of Augustus. Celsus describes opthalmia which he styles lippitudo, proptosis, pustular and other inflammations, ulcers, suffusio or hypochysis, paralysis, mydriasis or amaurosis, crithe or hordeolum, encysted tumours, pterygium or unguis; encanthis, anchylo-blepharon, cataract, fistula lachrymalis or ægilops, clavi, &c. and mentions the medical and surgical treatment, giving also the composition of several collyria invented by Euelpides, whom he describes as the greatest oculist of that age. Celsus also speaks of applications for the eyes invented by Dionysius, Cleon, Theodatus, Philo, Philetes, Hierax, Hermon, Ptolemæus, Triphon, Meges and Euelpistus. Other opthalmists contrived applications for the eye; in the time of the emperor Augustus, for instance, his physician Antonius Musa, also Nygenus Florus; Damocrates and Sribonius Largus. During the reign of the emperor Claudius, Pliny enumerates an almost endless list of remedies for diseases of the eye, and he employs some names for those diseases which do not occur in Celsus. But, though the list of oculists who invented and gave names to applications for the eye, swells beyond

ll reasonable compass, we in vain seek among the otices of these compositions for any memorial of the real nprovement of ocular surgery. Antyllus is thought by hazes to describe extraction of the lens, but Galen who ved up to the beginning of the third century, does not llude to it in operation, though he speaks of a great many bllyria. The treatment recommended by Oribasius for phthalmia, antiphlogistic and soothing, is judicious. Aetius ho lived about 150 years later than Oribasius, describes rgely the medical and surgical treatment of diseases of ne eye, but does not mention any operation for cataract, nough noticing an operation for pterygium, another for version of the eyelids, another for encanthis. Serapion, Ali Abbas, Rhazes and Avicenna, all wrote on diseases of ne eye, and were familiar with the depressing and extract-ng operations of cataract. In the 13th and 14th centuries ne writers on eye disease who may be named are Lan-anc, Joannes Pitard, Gilbertus Anglicanus, Bernard ordon, John of Gaddesden, John of Ardern first of Newark then of London, and Guy de Chauliac, physician o Pope Urban V. It was only towards the middle of the 7th century that Remi Lasnier, a surgeon of Paris, taught o Gassendi the true seat of cataract, though this discov-ry is also claimed for Francis Quarré. Freytag of Zurich in 1694, practised with success the extraction f a cataract and towards the middle of the 18th century Samuel Sharp and Zachary Platner treated the whole ubject of cataract in a scientific manner, and about the ame time, other oculists, Daniel of Paris, Lafaye, Morand, Poyet, Vogel of Lubeck, Thomas Young of Edin-burgh, Olof Acrel of Stockholm, Warner of London, Benjamin Gooch of Norfolk, Richter of Gottingen, Perci-val Pott of London and Javin oculist to the Duke of Modena discussed the questions in cataract of depression nd extraction: During the last fifteen years of the 18th entury so great was the number of oculists in France who upheld the operation of extraction, that Pellier de Quengsy, n oculist of Toulouse, assures us that the operation of depression had fallen totally into disuse. As we approach our own times, the writers worthy of mention are Benjamin Bell in his System of Surgery; Pierre Demours, oculist o the King of France; Professor Rowley of Oxford;

George Joseph Beer; Joseph Barth (1797), John Adam Schmidt all three of Vienna and more recently Scarpa and William Hey. Of the middle of the 19th century, the ophthalmic surgeons of Britain, Mr. Hulke, Mr. Hutchinson, Mr. Spencer Wells and Carter, and on the continent of Europe von Gräefe, Sichel, Liebreich, Desmarres, Samisch, Schweigger, and Seidel. The operation for cataract proposed by von Graefe (died 1871?), and the knives proposed by Liebreich towards the latter part of the 19th century, promise to displace all others. But it is to the inventors of the ophthalmoscope in our own times, that is due the credit of the greatest progress that ophthalmic surgery has ever made. The idea was suggested by Dr. Cumming, a British surgeon, about the year 1850, but it was carried out by Helmholtz, who described it in his Beschreibung eines Augenspiegels, published at Berlin in 1851; and in 1855 Mr. Spencer Wells insisted upon its great value in the investigation of eye diseases. Morbid appearances without number, of a kind quite evident to the naked eye, were never described with any adequate care until the microscope raised the standard of care. The ophthalmoscope, as an instrument of precision, when brought to bear upon nervous diseases, has taught the oculist to see new things and produced a marvellous change in his knowledge and method of investigation. It has cleared up for him many doubts, and has enabled him to recognise certain pathological states, which before were beyond his reach. By its means we are for the first time permitted to see the commencement and progress of change in the life of nervous tissue, and to ascertain the modes and times of such change. It has added to the laryngoscope, the endoscope, the sphygmograph, one more useful aid to diagnosis. It had long been known that indications of changes in the nervous system are early observable in the eye, the interior of which presents visible indications of the disorders of the nervous system; but Dr. John Ogle, about the year 1860, called attention to the probable results of ophthalmoscopic examination in cases of cerebral disease. Dr. T. C. Allbutt's book on the use of the ophthalmoscope, published in 1871, is a standard work. Of recent writings on the eye may be named the books of M. Schultze, Zur Anatomie und Physiologie der Retina, Bonn 1866; the treatises by J. W. Hulke;

Muller, Anat. Phys. Untersuchungen uber die Retina, ppzig 1856; Liebrich Atlas; Mr. Salter; von Graefe; rr. Hutchinson, Mr. Aldridge. Dr. Hughlings Jackson, rr. Lancereaux; Schrœder; van der Kolk, whose work as originally in Dutch, but has reappeared in several the English journals; Turek, who wrote Ueber cund. Erkrank. einzelner Ruckenmarkstrange. Wien, 51. Dr. Herman Weber, Dr. William Ogle; Mackenzie; esmarres Traité des Maladies des Yeux, Tomes III. chtenstein De Amblyopia ex Morbo Brightii, Konigsberg 57; Professor Virchow Verhandl. Phys. Med. Gesellsaft Wurzburg and his Gesammelte Abhandlungen 1856, id the writings of Professor Niemeyer.

1799—1870. **James Syme,** a surgeon of Edinburgh, orn in Fifeshire in 1799, was educated in Edinburgh, where, bout the year 1830, aided by friends, he opened an hostal principally for surgical diseases; he lectured there on urgery to a large class of medical students, whom he spired with his own zeal for his profession, and with warm elings of personal respect and attachment. He was istinguished by his pre-eminent powers of diagnosis, and qually pre-eminent dexterity in operating. He originated e operation for removing the foot at the ankle joint, with e heel for a flap, and to him also is greatly due the troduction of amputations of the thigh by making flaps f skin and division of the muscles as in the circular operttion. He died 26th June 1870. In 1833 he was ppointed Professor of Clinical Surgery in the University. His treatise on the Excision of diseased Joints 1831, Contributions to Pathology, the Practice of Surgery, and other medical works, advanced surgical science.

1804—**Richard Owen,** born at Lancaster in 1804, celebrated comparative anatomist. When very young he erved as a Midshipman on board H. M. Ship Tribune, but n peace occurring in 1814 he returned to school, then he became a medical pupil of a surgeon at Lancaster, in 1824 e studied medicine under Dr. Barclay at Edinburgh, and n 1825 in London at St. Bartholomew's Hospital. He never took up medicine as a profession. His first employment was at the Royal College of Surgeons about 1826, where he took charge of John Hunter's Museum, and for hirty years he issued volume after volume of its catalogue,

till the whole was completed, during which new ideas were suggested, new paths of inquiry opened up, and discoveries made in every direction. The transactions of the Royal, the Zoological, and the Geological Societies, the Reports of the British Association, the Annals and Magazines of Natural History, the Cyclopædia of Anatomy and Physiology, the Manual of Scientific Inquiry, with numerous independent works, bear testimony to an activity seldom equalled, perhaps never surpassed, as a comparative anatomist and physiologist, as a zoologist, as a palæontologist and as the philosophical exponent of the general laws regulating the forms and development of animal life. He was one of the first in Great Britain who began to employ the microscope in investigations, and was one of the founders and first president of the Microscopical Society. In 1836 he was appointed to succeed Sir Charles Bell as Hunterian Professor of the Royal College of Surgeons, and then published his lectures on Comparative Anatomy of which a second edition appeared in 1853, and in 1856 he was appointed chief of the Natural History Department of the British Museum. His career will bear comparison with the most brilliant names in the past or present generations. Baron Humboldt spoke of him as the greatest anatomist of the age, and another eminent writer calls him the Newton of Natural History. He received numerous acknowledgments of his scientific merits. In 1848 he was presented by the Royal Society of London with the Royal Medal, and in 1851 with the Copley Medal. From the British Government he received a pension, and Queen Victoria granted him a residence at one of the Royal Houses at Richmond Park. The King of Prussia bestowed upon him, on the death of Oersted in 1851, the distinction of Chevalier of the Order of Merit. The University of Oxford conferred on him the degree of Doctor of Civil Law, that of Edinburgh honored him with its degree of Doctor of Laws, and every distinguished Society in Europe and America that cultivates the natural sciences, has elected him a foreign member.

1811—1870. **Sir James Young Simpson,** Baronet, an eminent medical practitioner who raised himself by his intellect and his discoveries to a highly honorable position in life, and was created a Baronet of the United

Kingdom by Queen Victoria. He was born at Bathgate in Linlithgowshire, where his father was a baker. He took his degree of Doctor of Medicine in the University of Edinburgh: he became assistant to Professor Thompson; in 1840 he was appointed professor of midwifery in the University of Edinburgh, and was subsequently honored with the appointment of Physician Accoucheur in Scotland to Her Majesty Queen Victoria. His lectures at once became popular, and he has perhaps contributed more than any other professor in later times to sustain the fame of the Edinburgh School of Medicine. But it is to his employment of anæsthetics in midwifery that his reputation spread throughout the world: on the discovery, in America, of the anæsthetic properties of ether, he availed himself of it to alleviate the pangs of labor. The effects produced, however, led him to seek some other agent, and he discovered the more beneficial action of chloroform, and for this triumph of science over physical suffering he was rewarded with a prize of 2,000 francs from the Paris Academy of Sciences and elected member of many learned Societies of Britain and Europe. It has eased the sufferings of millions of human beings. He contributed largely to the literature of his profession, and his writings were collected and printed in two volumes by two of his former pupils. He invented and brought into extensive use the uterine sound, as a valuable instrument in the diagnosis of uterine diseases and displacements, and to him is in large measure due the great stride made during the middle of the 19th century in the successful detection and treatment of uterine diseases. Acupressure as a substitute for delegation of arteries was also introduced by this accomplished physician, who was also known as an archæologist. His scientific knowledge was both various and profound. He wrote on Leprosy, on Roman Medicine Stamps, on ancient Lykion vases. He died 6th May 1870.

— ? **John Conolly, M.D.,** an eminent physician, who devoted much attention to the care of the inmates of Hanwell Lunatic Asylum near London. In the earliest times of which we have record, the insane were either neglected or treated with great severity. The first who endeavoured to ameliorate the condition of this class of sick people was the benevolent and courageous Pinel, a physician of Paris,

who, towards the end of 1792, was allowed by the authorities of the Bicetre Asylum in that city to discontinue the great restraints placed on the inmates. Mr. Tuke, in 1813, urged the introduction of a milder treatment of the insane. But to Dr. Charlesworth and Mr. Hill of the Lincoln Lunatic Asylum, which was opened on the 26th April 1820, belongs the credit of declaring the total abolition of mechanical instruments of restraint desirable and practicable. This view was given effect to gradually, but by March 1837 restraint was entirely abolished in that Institution, and Mr. Hill recorded as his opinion, that "in a properly constructed building, with a sufficient number of suitable attendants, restraint is never necessary, never justifiable and always injurious." Subsequently, in 1844, Dr. Conolly reported that "there is no Asylum in the world, in which all mechanical restraints may not be abolished not only with safety, but with incalculable advantage." The most distinguished of the physicians who have written on mental diseases in England are Drs. Prichard, Conolly, Burrows and Haslam, and Drs. Bucknill and Tuke wrote a manual of Psychological Medicine. In France, Dr. Pinel wrote "Sur l' Alienation Mentale," Dr. Esquirol wrote "Sur les Maladies Mentales," and Georget, "Sur la Folie;" in Germany, Heinroth wrote "Die Störungen des Seelen lebens," and Jacobi wrote "Sammlungen fûr die Heilkunde der Gemuthskrankeiten." Sir William Ellis, an English physician, first at Wakefield and afterwards at the Hanwell Asylum, introduced employment amongst the inmates. Since the British arrived in India, they have erected several Asylums for the insanes; Calcutta, Madras, Bangalore, Calicut, Vizagapatam, Bombay and Rangoon, each has one of these Institutions.

J. Marion Sims, A.B., M.D., an eminent physician of the United States of America, who in that country and in Europe has distinguished himself by his knowledge of uterine surgery, and his invention of the duck-bill speculum.

?? **Duchenne** of Boulogne, who died in the end of 1875, much advanced medical science. He differentiated between paralysis and locomotive ataxy, and was also quite a pioneer in medicine electricity.

1818. **Norman Chevers,** M. D., a medical officer the Bengal Army, a voluminous and accurate writer d a successful teacher of medicine, who advanced the owledge of the laws of health and of medical jurisprunce as applicable to British India. He was born in ent in 1818. His father was a surgeon in the British avy. In 1848 he was appointed to the Army of Bengal, d for the next eight years he was employed in Civil and ilitary Hospitals; but in 1856, he was appointed Secretary the Board administering the Bengal Medical Department. 1861 he was appointed Principal of the Medical College Calcutta, and first physician of the General Hospital, and om this year until he left India in 1876, he devoted mself to the education in Medicine of the youth of Bengal, d gave all his leisure to lay before the public his views the prevention of sickness and on the treatment of rious diseases. He wrote a treatise on the management Diseases of the Heart. His Collection of Facts, illustative of the diseases of the pulmonary artery, has been rgely cited by Drs. Walshe, Peacock, and Fuller, and as translated into French and published in Paris. Dr. iller describes it as an admirable work in which all at is known respecting morbid conditions of the pulmory artery is carefully recorded. His writings on medical risprudence are of great and permanent value; a third ition of his Manual of Medical Jurisprudence was pubhed in 1870. In that year also appeared his "Treatise Removable and Mitigable Causes of Death, their mode of igin and means of prevention, including a Sketch of Vital atistics and the leading Principles of public Hygiene in rope and India," also his Brief Review on the Means Preserving the Health of European Soldiers in India, garding which Dr. Parkes writes in his Manual of Practical ygiene, "no medical officer should serve in India thout studying one of the best works ever published on giene,—Dr. Norman Chevers' Essay on the Means of eserving the Health of Europeans in India." His other ritings have been A Historical Review of the Moral and ocial Condition of the British Soldier; Can India be lonised by Europeans?; On the Preservation of the ealth of Seamen, especially those frequenting Calcutta d the other Indian Ports (1864), which the Government

of Bombay reprinted for distribution to sailors; Two Lectures on the Laws of Public Health as applied to the opinions of the people of India; On the Sanitary Position and Obligations of the Inhabitants of Calcutta; On the Reclamation of the Calcutta Salt Water Lake; On Humanity in War. From 1853 until 1872 he was co-Editor of the Indian Annals of Medicial Science. He published in the London Medical Gazette, On the treatment of Pulmonary Consumption; On Inflammation of the Serous tissues in Cases of Anthrax; On congenital stricture of the thoracic Aorta; On the structure of the Veins; Effects of ligature of the Carotid Arteries on the Cerebral circulation; and On Aneurism of the Aorta. In the Guy's Hospital Reports he published On the structure of the subserous tissue of the Aorta; on Aortitis: On the diseases of the orifice and valves of the Aorta; On the diseases of the Coronary Arteries of the Heart: On the causes of death after Operations and Injuries in London Hospitals, which Sir James Simpson described as one of the best memoirs on the subject we yet possess. In the Indian Annals of Medical Science, he published On the effects of obliteration of the Carotid Arteries upon the cerebral circulation; On the operations for the Relief of congenital imperforation of the rectum; Enquiry into the circumstances of the death of King Charles the Second of England; Did James the First of England die from the effects of poison, or from natural causes? State Sanitation; The social status of the Medical Profession; The Physician's Calling; Tracheotomy in Hydrophobia; Antidotal action of tobacco in poisoning by Strychnia; On a successful mode of treating mercurial salivation; and, in the Indian Medical Gazette, he published Papers on the Burdwan fever, and a Report on Enquiry into the conditions, during life, of the liver and kidneys in Asiatic cholera. His was a useful and honorable career.