the sneeze, declares that Prometheus introduced it to mortals. He had made a statue which he wished to endow with life, and for this purpose he stole a beam of sunlight. Wishing to conceal the theft from Apollo, he hid the beam in his snuff-box. Shortly afterward, being desirous of taking a pinch of Maccaboy, he absent-mindedly put the beam up his nose—causing him to sneeze violently.

Many savage and semi-civilized races of the Orient have some curious customs regarding the sneeze. When the Sultan of Monomotopa sneezes, for instance, the fact is made known from the palace by a certain signal. Instantly, every subject within hearing of the signal sets up a shout, the cry is taken up by others, and so extends until it rolls throughout the confines of his empire. When the Sultan of Senaar sneezes, on the contrary, every woman in his harem or within hearing, turns her back on him, and makes a sign of contempt, by smiting her lips with her hands—disgusted that so mighty a personage should have to sneeze like an ordinary mortal.

The Inca, Garcillasso de la Vega, in his narrative of DeSoto's expedition through the Gulf States, Georgia, etc., states that while DeSoto was camped on the banks of the Savannah River, and interviewing the king or head man of the country, his Indian majesty sneezed loudly. Instantly all his subjects bowed low their heads, opened and closed their arms, and saluted the chief in chorus with the following

May the sun guard thee!
May the sun be with thee!
May the sun shine upon thee!
May the sun prosper and defend thee!

THE APOTHECARY.

By J. W. WAINWRIGHT, M.D.

It is well known that everything pertaining to medieval education, science, and art originated in Italy. The monks who were dispatched from the Papal Court were instructed in these several branches of education, and as they spread over the continent of Europe, became active in a propaganda for the dissemination of these higher educational and intellectual pursuits, thus laying the foundation for the advancement and power of the Church. Medical establishments of various kinds were instituted, which became places for the vending of medicines as well as the treatment of diseases and injuries, and thus the first systematic effort to apply medicines for the cure of disease was begun in Europe. It must not be forgotten, however, that the knowledge of materia medica did not originate with these monks, for Theophrastus, Hippocrates, and Galen inform us that the Greek and Roman physicians prescribed for their patients medicines which they themselves prepared, but that for economical reasons they caused the herbs, of which the whole of their materia medica consisted, to be collected by others. Many of their medicinal plants were exotics, and it was necessary, therefore, to spend much time and travel in procuring them. These plants were employed in the preparation of foods for seasoning, others in dyeing and painting, some again as cosmetics, others for perfumes, ointments and in the bath. Not a few were used in other arts. It became thus convenient for the physician to purchase such articles as he had occasion to use in medicine from the dealers who might be the gatherers or simply merchants.

As a knowledge of the plants was necessary to those who gathered them, their habitat, appearance, the part used, season for gathering, manner of curing, etc., it can be seen that only those of experience and superior knowledge were engaged in the pursuit. By degrees these people became acquainted with the uses to which certain plants were put in the treatment of disease, and began to encroach upon the calling of the professional physician by selling and compounding medicines, boasting the possession of secrets more beneficial to mankind than known to the physician, especially as the virtues of the plants depended upon the conditions prevailing at the time they were gathered, and the gatherer, not the physician, having a knowledge of whether these conditions were conformed to. The sun and planets must be in certain constellations; besides, the hour of day or night when gathered influenced their potency.

Then dealers were distinguished as *pigmentarii*, or those who dealt principally in those plants used in dyeing and coloring, *sepiariii*, or those dealing in remedies used in veterinary practice, the *pharmacopolæ* or those used as medicines and made according to standard formula of the physician, and finally the *medicamentarii* or dealers in medicinal plants and herbs. Notwithstanding these distinctions, they all more or less dealt in the various kinds of plants, in proof of which a law was established for the punishment of a *pigmentaræ* who sold by mistake poisonous substances as remedies.

Again Pliny reproaches physicians of his time for purchasing medicines from the *sepiariii* instead of preparing them himself, and thus being assured of their contents. The *pharmacopolæ* carried on the trade of prescribing and boasted of extravagant virtues for their products. The *medicamentarii* were not popular. The Theodosian code denounces them as worthless, while male and female poisoners were known as *medicamentarii* and *medicamentariæ*, thus casting opprobrium upon the calling. These dealers in herbs resembled more our grocers, druggists, and mountebanks than apothecaries, the word *apotheca* signifying a store, magazine, or warehouse, while *apothecarius* was the proprietor or keeper of such a place. As used in the writings of the thirteenth and fourteenth centuries, therefore, the term apothecary did not have the same meaning as later.

In these periods apothecaries were attached to courts and in houses of wealthy persons, and were engaged in preparing preserves and confections, and therefore, would be considered rather as confectioners.

It is not certain when apothecaries became semi-professional men with a knowledge of materia medica and chemistry necessary to enable them to properly prepare the physicians' medicines. It is probable, however, that they gradually acquired this knowledge, and that when the physician found a skilled druggist, he for convenience's sake confided to him the compounding of his prescriptions.

Corning* asserts that as early as the eleventh century African physicians began to employ skilled herbalists in the preparation of their medicines. The practice was then introduced into Spain and lower Italy through the Saracens by the Arabian physicians, who accompanied the Caliphs or Arabian princes into these countries.

In this manner we can account for the origin of the many Arabic terms in pharmacy and chemistry, which were adopted and retained, and the supposition that the first apothecaries were found in lower Italy. At all events the first known legal establishment of the business of apothecary is the medical edict of Frederic II. for the Kingdom of Naples.† By this edict *confectionarii* were required to subscribe to an oath to keep fresh drugs and to prepare medicines strictly according to the prescriptions of the physicians. The price was fixed at which the *stationarii* might vend medicines so prepared. Physicians were charged with the inspection of the *stationes* which were restricted to certain towns. The *confectionarii* were those who prepared the medicines or confections, and the *statio* or what was later termed the apothecary's shop, the place where they were sold; the *stationarii* were the proprietors of the shops, and had the care of selling the medicines. In this edict the word *apotheca* is used only to signify the warehouse where drugs were preserved. It appears that the *confectionarii* prepared medicines from a general set of prescriptions legally authorized, and that the physician selected from those kept ready for use, such as were thought best adapted for the particular case under treatment. The physician, who was required to pass an examination and then obtained a license to practise, was obliged to swear to observe *formam curiæ hactenus observatam*; and if he found *quod aliquis confectionarius minus bene conficiat* to give the information to the curia. The *confectionarii* swore that they would make the confectiones *secundum prædictam formam*.

It was necessary that the medicine should be accompanied with a certificate from a physician to show that it was properly made. After the invention of distillation, sublimation and other chemical processes, laboratories, furnaces and expensive apparatus were needed, and it followed that only such men as had studied chemistry as a collateral branch of medicine should become apothecaries, and that they should be indemnified for their time in study and expense in apparatus by an exclusive trade. A monopoly thus sprung into existence which was carefully guarded.

This centering of the business in the hands of the few rendered the inspection more easily accomplished and the selling of improper drugs or poisons was more easily controlled. Apothecaries were allowed to sell sweetmeats and confectionery, and this helped to render them in a comparatively short time financially independent. They were obliged on certain festivals to contribute presents of delicacies to the magistrates, as an acknowledgment for these concessions and thus, probably, arose the custom of sending New Year's gifts, so largely practiced by druggists of our own times.

In many places, and particularly in opulent cities, the first apothecaries' shops were established at the public expense, and hence belonged to the magistrates. A spot was also often appropriated for the purposes of a garden where necessary plants were grown. Even to this day the name apothecary's garden is retained in places, notably the economical garden at Göttingen, which is known to the people as the "Apothecary's Garden." Apothecaries' shops for the courts were frequently established and directed by consorts of princes and from this grew the custom of the preparation and dispensing of medicines by Sisters of Charity in public hospitals.

Anderson in the History of Commerce, 1319, states that King Edward III. in the year 1345 gave a pension of sixpence a day to Coursus de Gangeland, an apothecary of London, for taking care of and attending his Majesty during his illness in Scotland, this being the first mention of an apothecary in the Foedera.

In France no mention is made of an apothecary previous to the year 1484, when they received their statutes from Charles VIII. (*Histoire de Paris par Feli-bien II.*, p. 927). These were followed by others in 1514 under Louis XII., and in 1516 and 1520 under Francis I., in 1571 under Charles IX., in 1583 under Henry III., and in 1594 under Henry IV. These regulations were renewed and confirmed by Louis XIII. in the years 1611, 1624, and 1638.

In the beginning of the fifteenth century, an apothecary's shop was established at Stuttgart by one named Glatz, which, as the only one in the country, was sanctioned by the Count of Wirtemberg in 1458. About this time Count Ulric gave to John Kettner, whom he had previously appointed his domestic physician, leave to establish an apothecary's shop in Stuttgart and promised to allow no other in his dominion. The apothecary received yearly from the count a certain quantity of wine, barley, and rye, and engaged to supply the court with confectionery at the rate of twelve shillings per pound.‡

These two shops were soon abandoned, probably because they did not prove profitable.

In the year 1468 Albrecht Mulsteiner or Althumsteiner, from Nuremberg, was appointed apothecary with the promise that no other private or public shop of its kind should be allowed. The patent contained a clause compelling the apothecary to keep a catalogue of the articles offered for sale with prices. Another is mentioned as having been at Tübingen under the protection of Everhard, the possessor of which bound himself to serve as physician and apothecary to the army in time of war.

In the year 1500 Duke Ulric authorized Syriax Horn to establish an apothecary shop at Stuttgart for six years. He was compelled to make oath that he would supply the government and other public officers as well as the duke's subjects, with medicines, and the body physician was enjoined to visit the shop once a year in order to testify whether Horn conducted his place according to regulations and sold his wares at the fixed price.¶

A female apothecary is said to have kept a public shop at Augsburg in 1445, who was paid a salary by the

city. In 1507 an order was made enforcing inspection of all apothecaries' shops, and in 1512 a schedule price was arranged for all medicines and other than recognized apothecaries forbidden to deal in them.

About the year 1618 there existed in Hamburg a private apothecary's shop, while in Frankfurt, a city physician was appointed in 1489, and instructed to inspect apothecaries' shops carefully, and to see that the proper prices were charged for all articles. In 1500 all the apothecaries were obliged to make oath that they would observe the regulations established for them.

In the police regulations made at Basle in 1440, it was ordered that a public physician should be appointed with the allowance of an ecclesiastical benefice or canonry so that they might furnish their services gratis, but it was stipulated that "What costly things people may wish to have from the apothecary's shop, must be paid for by them."

The first apothecary's shop in Berlin was established in 1488. One Hans Zehender was the owner, receiving a hereditary possession with the promise of a certain amount of rye per year, with a free house and exemption from all contributions, watching, or other burthen and without opposition. This agreement was confirmed by the elector John, in 1491, and again confirmed by Joachim I. in 1499, who gave the apothecary a new patent.

Catherine, widow of the margrave John of Custring, established an apothecary's shop at Krossen for the use of the court which was under the inspection of Wigands, her physician. At her death in 1574 she bequeathed it to the magistrates.

A similar place was established at Halle in 1493 by Simon Puster in order, as stated, that the citizens might like common things at a cheap rate, and that in case of sickness they might be able to procure, readily, fresh and well-prepared medicines. He was exempted from taxation for ten years, with the proviso, "that during that period he should furnish yearly at the council house for two collations during the festivals, eight pounds of good sugar confections, fit and proper to be used at such entertainments." This was the only apothecary's shop in Halle until the year 1535, when the archbishop gave his physician, Von Wyhe, liberty to establish a new one with the assurance that to eternity no more apothecaries' shops should exist in Halle. Notwithstanding this promise, one Wolf Holzworth returned from Italy and secured permission to establish himself as an apothecary in 1555.

Similar shops were established in Leipsic in 1409. In Eisenach in 1638, in Oldenburg in 1598, in Hanover in 1565, in Brunswick in 1568, and in Dresden in 1581.

In Sweden, the first apothecary's shop was established under King Gustavus Erickson in 1547. When this king died, Master Jacob, the apothecary, Master Yucas and his confessor, Johannes, who according to the custom, practised physic and prescribed for His Majesty.

Toward the close of the sixteenth century, physicians and apothecaries were invited into Russia by the then Czar Boris Godunow.* In England in 1543 an act was passed for the toleration and protection of numerous irregular practitioners, who were neither surgeons nor physicians, entitled "An act that persons being no common surgeons may minister outward medicines"; the persons thus alluded to were those who kept shops for the sale of drugs, to whom the name of apothecary was then exclusively applied. On April 9, 1606, King James I. had incorporated the apothecaries of London and united them with the grocers; they remained thus until 1617, when they received a new charter, forming them into a separate company or guild, under the designation of "The Master, Wardens and Society of the Art and Mysteries of Apothecaries of the City of London." It appears that these apothecaries of London did not begin generally to prescribe as well as dispense medicines until a few years before the close of the seventeenth century.

Unlike as in the United States, there is a distinction made in Great Britain between apothecaries, druggists, and chemists, for while here the terms are applied indiscriminately, in Great Britain the apothecary is a part of the medical profession, exercising the right to practise medicine or prescribe in certain cases; while chemists and druggists are those who have passed an examination and received a license to compound and sell medicines and poisons.

The pharmaceutical chemist is one who has passed a second or major examination and is classed in a higher branch of the profession than are druggists and chemists. In this country the terms are jumbled together, or used indiscriminately by those engaged in selling products used in medicines. The country storekeeper who keeps a few of the most popular patent medicines advertises himself a druggist, while the man who has a drug store is known as a pharmacist and chemist. Very often these words are wrongfully used, as the druggist may be a pharmacist, but may not be a chemist. An apothecary is therefore an anomaly in the United States as is understood in Great Britain, for the laws of the States draw the line sharply between the medical and pharmaceutical profession. The druggist may not prescribe, and in some States the physician may not dispense. This is as it should be, for the curriculum of the medical school does not prepare the student to compound medicines, nor the colleges of pharmacy their students for the treating of diseases. It is safe to say that we will not, for a long time at least, have apothecaries in the sense as now understood.—National Druggist.

HOW A STORAGE BATTERY WORKS.

THE popular impression is to the effect that a storage battery stores up electricity, and that the bottled-up fluid is held somehow under pressure, to be released on demand like highly-charged mineral water. The principle of the storage battery is quite different from this, as the entire action is chemical, fundamentally.

The storage battery is a simple piece of apparatus, mechanically. In its most familiar form it consists of two lead plates supporting active materials—a high

* De Hermetica Medicina libri duo Helmst, 1669, p. 293.

† Corning De Antiquitatibus Academicis, 1739, p. 60.

‡ Sattler's Geschichte Württemberg, p. 159.

¶ Beckmann History of Inventions and Discoveries, 1846, Vol. 1, p. 334.

* Backmeister, 1776, p. 37.