

# SECTION ON HISTORICAL PHARMACY, AMERICAN PHARMACEUTICAL ASSOCIATION

## EAST INDIAN VOYAGES OF THE SIXTEENTH AND SEVENTEENTH CENTURIES IN THEIR RELATION TO DRUGS, SPICES AND DYE- STUFFS.\*

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### ENGLISH VOYAGES.

Marchaunt Adventurers, chanting at the windlass,  
Early in the morning, we slipped from Plymouth Sound,  
All for adventure in the great New Regions,  
All for Eldorado and to sail the world around!  
Sing! The red of sun-rise ripples round the bows again.  
Marchaunt Adventurers, O sing, we're outward bound,  
All to stuff the sunset in our old black galleon,  
All to seek the merchandise that no man ever found.

—ALFRED NOYES, "A Knight of the Ocean-Sea."

The same year that Vasco da Gama started on his first voyage to the Indies, the elder Cabot, a Venetian at that time in the service of King Henry VII of England, reached the shore of Labrador. His expedition was the first (if we except the Vikings) to reach the mainland of America. The next year his son Sebastian, also under the flag of St. George, sailed to the same coast that his father had discovered. We read that he thought verily to have passed on still on the way to Cathaia, and would have done so if mutiny had not hindered him and made him return. (Hakluyt, vii, p. 150.) Turning to the southward, he explored the coast as far as Cape Hatteras or farther. At that time the northern continent seemed only a barrier in the way of a voyage to Cathay, and such expeditions as were sent by the English were expected to find a northwest passage to the sea which washed the Indies. One of these efforts was made in 1517, another in 1527. The English were turning their discoveries to some account even at this period, for while Portuguese and Spaniard were bringing gold and spices each from his own particular India, English fishermen were taking cod on the Banks of Newfoundland.

In 1527 we find Robert Thorne, an Englishman who had long been resident in Seville, addressing to King Henry VIII a declaration setting forth the rich treasures which the Emperor (Charles V) was at that time receiving from the Indies. "Also to write unto your Lordshippe of the new trade of spices of the Emperour, there is no doubt that the Islands are fertile of Cloves, Nutmegs, Mace, and Cinnamon, and that the saide Islands, with others thereabout, abound with golde." Urging the northwest route as a feasible and desirable one, Thorne mentions as a particular advantage that navigators travelling that way "may pass . . . in perpetual clereness of the day without any darkness of the night . . ." (Hakluyt, ii, pp. 159-181.)

Sir Humphrey Gilbert, "Knight of the Ocean Sea," writing in 1576 to prove the existence of a northwest passage and its advantages, urges the shortness of the

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\* Continued from p. 481, May issue.

voyage which will lead to "all the wealth of the East parts . . . gold, silver, precious stones, cloth of gold, silkes, all manner of spices, grocery wares, and other kinds of merchandise of an inestimable value. . . ." (Hakluyt, vii, pp. 158-190.) Richard Hakluyt, in 1578, advising certain gentlemen who were about to accompany Martin Frobisher on a northwest voyage, urges them to seek "Cochenile, natural to the West Indies . . . or any Roote, Berrie, Fruite, Wood or Earth fit for dying." (Hakluyt, vii, p. 244.) In 1589 we find Elizabeth granting to Adrian Gilbert authority "to seek . . . the passage to China and the Isles of the Moluccas." (Hakluyt, vii, p. 375.) John Davis, in 1585, 1586, and 1587, made three separate attempts to reach the Moluccas by the northwest passage.

There remained another possibility of a shorter way to India. In 1553 we find an English expedition of three vessels under Hugh Willoughby attempting a northeast passage. The ships became separated in a storm, and two of them, the *Bona Speranza* and the *Confidentia*, became ice-bound, the crews perishing to a man, probably in January, 1554. The *Edward Bonaventure*, commanded by Richard Chancellor, found its way into the White Sea. Here Russian settlements were found, and the Englishmen explained that they had come for "amitie and commerce." Chancellor and some companions were taken the long journey of 1500 miles by sledges to visit the Czar, Ivan the Terrible, at Moscow. Here they were kindly received and entertained in the barbaric court. Ivan showed great willingness to enter into commercial relations with the English.

Chancellor's return, in 1554, with a message from the Czar requesting that English merchants visit Russia, and offering fullest freedom and protection, aroused great interest among London traders. In February, 1555, the Muscovy Company was chartered, with exclusive privilege of trade to Russia. The same year two ships, the *Edward Bonaventure* and the *Philip and Mary*, were despatched with goods for trade, and with agents of the company to take up their residence in Russia. The two started on the return voyage in 1556, accompanied by the *Confidentia* and *Bona Speranza*, which had been rescued from the ice by the Russians. But these two ill-fated vessels were now wrecked and lost, and later in the voyage the *Edward Bonaventure* was driven ashore on the coast of Scotland. The Russian ambassador, who had sailed in the *Edward*, was saved. Such were the tragic voyages which opened the career of the Muscovy Company, which was to become prosperous, and for a number of years to carry on a profitable Russian trade.

The company still continued its search for the northeast passage, sending one venture under Burroughs in 1556, and one under Pet and Jackman in 1580. In the commission given to the commanders of the latter voyage we find mention of articles to be carried "for a shew of commodities." The list includes: "Red Oker for painters, Sope, both kinds, Saffron, Aquavita, Brimstone, and Antimonie." The death of Jackman and the failure of this expedition did much to discourage further efforts to seek a northeast passage.

Very early in its history the Muscovy Company instructed the factors sent to Russia "to use all wayes and means possible to learne how men may passe from Russia either by land or sea to Cathaia." In 1558, Anthony Jenkinson journeyed down the Volga to the Caspian, by coasting vessel around the northern end of the Caspian to Koshak, and hence by caravan on a long and eventful journey to the ancient city of Bokhara. Jenkinson found that the trade of this Bactrian city was much decayed. Such merchants as resorted there from India, Persia, and Russia were comparatively poor. He learned that the overland route from China to

Bokhara was closed because of war in central Asia. Further, very few spices were being brought to Bokhara. Hence the prospects of obtaining the products of Asia by trading to Bokhara did not seem promising to Jenkinson.

In 1561, Jenkinson was sent to investigate the Persian trade. "And for the better knowledge to be had in the prices and goodness of such things as we do partly suppose you shall find in the parts of Persia, we doe herewith deliver you a quantity of certain drugges, whereby you may perceive how to know the best, and also there are noted the prices of such wares and drugges as be here most vendible."

Between 1561 and 1581 there were six "voyages" or trading expeditions to Persia. A letter from Arthur Edwards, one of the company's factors, under date of April 26, 1566, gives interesting details in regard to the Persian and Syrian trade. Edwards mentions the following as commodities to be brought out of Persia into England: "Raw silk, pepper, ginger, nutmegs, brimstone, allom (alum), gals (nutgalls), cloves and yew for bow-staves." He also describes the traffic at Aleppo in Syria: "wherein are many Venetians . . . who buy gals, tallow, saffron, skins, cotton-wool . . . and also will serve us of all kinds of spices, we giving them sufficient warning to fetch it in the Indies and will deliver it us in Shamaky." Edwards discusses the great quantities of alum to be had in a certain province of Persia, with the probable cost of transportation to England.

One other reference by one of the factors in a letter to his company cannot fail to interest: "There is a great river which falleth into the Caspian Sea by a town called Bachu (Baku) neere unto which is a strange thing to behold. For there issueth out of the ground a marvelous quantitie of oil, which oil they fetch from the uttermost bounds of all Persia, it serveth all the country to burn in their houses. This oil is black and is called Nyfte. . . . There is also by the said town of Bachu another kind of oil which is white and very precious; it is supposed to be the same that is here called Petroleum." Little did the Englishman dream that in the twentieth century fleets would sail the Caspian to transport the Bachu oil, and that battles would be fought for the possession of this region. (For the records of the activities of the Muscovy Company, see Hakluyt, vol. iii; also Gerson and Vaughn, "Studies in the History of English Commerce in the Tudor Period.")

In still another way English merchants of the sixteenth century were seeking to secure a share of the East Indian trade. As early as 1511 to 1534 we find mention of "certain tall ships of London, Southampton, and Bristol" making voyages to Sicily, Chios, and Crete, in the Mediterranean. ("Early Voyages in the Levant," H. S., p. ii.) In 1569, Gaspar Campion, who visited Chios (Scio), found, among the principal commodities growing in the island itself, "silke and masticke." Other commodities of Chios and nearby islands and coasts were galls and oil (olive oil). He says that while in Spain oil cost 25 and 30 pounds per ton, in the dominions of the Turk it could be had for five pounds per ton. (Hakluyt, v, p. 111.) The travels of Jenkinson and other agents of the Muscovy Company had done much to call attention to the possibilities of trade in the eastern Mediterranean. In 1581, Elizabeth granted a charter to the Company of Merchants of the Levant. The company sent out its first ship, the *Great Susan*, in 1582. A factory was established at Constantinople.

Certain remembrances prepared by Richard Hakluyt for a friend about to go to Turkey tell us something of the manner in which the demand for dyestuffs stimulated exploration. Extracts follow: "1. Anile (indigo) wherewith we color Blew to be brought into this realm by seed or roote. 3. And also all other herbs

used in dying. . . . 5. To learn all earths or minerals used in dying and their natural places. . . . 8. To procure from Muhaisira, a city in Ægypt . . . the seed of Sesamum the herbe . . . of this much oyle is made and many mills set on work about the same. . . . 14. To endeavor a vent of our Saffron." (Hakluyt, v, p. 229.)

A traveller who visited Egypt in the sixteenth century visited the source of a highly-esteemed article of medicine of that period. He writes: "Without the city (Cairo) . . . are to be seene divers piramids among which are three marvelous great. Out of them are dayly digged the bodies of ancient men not rotten but all whole. . . . And these dead bodies are the Mummies which the Phisitians and Apothecaries doe, against our will, make us to swallow." (Hakluyt, v, p. 336.)

The Levant Company enjoyed a long, prosperous, and honorable career, not passing out of existence until 1825, but we cannot follow its history further than we have done.

It is not for us to tell the story of the English adventurers of the Elizabethan period: how Drake and Hawkins, Grenville and Oxenham, and many others in their little ships of one or two hundred tons went out to meet the navies of the King of Spain; how they lay in wait for the treasure-ships on their homeward voyages; how they sacked the cities of the Spanish Main; how on occasion they sailed into the harbors of Spain itself and cut out rich prizes. All of this has been the theme of song and story since the days when they lived and fought. However, a few of these exploits have a direct bearing upon the English quest of a way to the Spiceries, and these will be mentioned.

In 1587, Sir Francis Drake sailed into the harbor of Cadiz and wrought havoc upon the Spanish fleet which was preparing for the great attack to be made upon England the following year. After further harrying the coasts of Spain and Portugal, Drake ran to Saint Michael, in the Azores, where he surprised and captured a great East India carrack, the *Sant Philip*. "And here . . . it is to be noted that the taking of this great Carak wrought two extraordinary effects in England, first that it taught others that Caraks were no such bugs but that they might be taken . . . and secondly, in acquainting the English nation more generally with the peculiarities of the exceeding great riches and wealth of the East Indies. . . ." (Hakluyt, vi, pp. 442-443.)

Still more notable in its consequences, perhaps, was the exploit of John Burroughs. He had gone with a squadron to the Azores to lie in wait for the West Indian treasure-ships. He was informed that no West Indian fleet would be sent that year, but that the East Indian carracks might be expected very soon. Waiting for these, Burroughs captured two out of the five. The *Madre de Dios* did not surrender until after she had made a stout resistance. The chronicler says: "And here I cannot but enter into the consideration and acknowledgment of God's great favor . . . who by putting this . . . into our hands discovered their secret trades and Indian riches which hitherto lay strangely hidden." This vessel of 1600 tons was the largest the English had ever seen, and when viewed in Leaden Hall caused profound astonishment among the islanders. Her lading "consisted of spices, drugges, silks, calicoes, quilts, carpets, and colors. The spices were pepper, cloves, maces, nutmegs, cinamon, greene ginger the drugs, benjamin, frankincense, galingale (galangale), mirabolans, aloes zocotrina, camphire; the silks, damasks . . . ; also pearls, muske, civet, amber-griece, elephants' teeth (ivory), porcellan of China, coco-nuts, hides, ebenwood as black as jet." (Hakluyt, vii, pp. 105-118.)

The first English vessels to pass through the Straits of Magellan, as well as the first to reach the Indies, were those commanded by Drake on his celebrated voyage of 1577-1580. Of the five vessels which started on this voyage, Drake's flag-ship, the *Pelican*, later called the *Golden Hind*, was the largest, and it was rated at 100 tons. Two of the smallest were abandoned before the Straits were reached. Drake stopped for refreshment at Port St. Julian, on the coast of Patagonia, where Magellan had rested on his circumnavigation, and found there the skeleton of a man Magellan had executed for mutiny. In this thing, too, Drake was to follow Magellan, for he found it necessary to condemn to death Captain Doughty, his own warm friend and second in command, because he tried to steal away with one of the vessels.

The *Golden Hind*, *Elizabeth*, and *Marigold* passed the Straits, but were dispersed by a terrific storm. The *Marigold* was never heard of; the *Elizabeth*, Captain Winter, repassed the Straits and returned to England. Drake himself was driven far to the south, but in beating back he discovered Cape Horn. Before this it had been supposed that the Straits were the only opening in a continent which extended on to the Pole Antarctic.

Drake now followed up the western coast of South America, spreading terror as he went. The Spaniards had believed the waters of the Pacific to be safe from all intrusion, and their commerce as well as their coast towns fell an easy prey to Drake's little company. His most notable exploit was the capture of the Peruvian treasure-ship *Cacafuego*.

The *Golden Hind* continued up the coast, and by some is believed to have gone as far as Vancouver Island. Turning southward, a stop was made near San Francisco Bay; the surrounding country Drake named New Albion. Here the natives were treated so kindly that they wept at the departure of the Englishmen. Now,

Far out of sight of land they steered, straight out  
Across the great Pacific . . . .

After visiting some of the islands of the Philippine group, the *Golden Hind* reached the Moluccas, the goal of all voyagers to those seas. The King of Ternate welcomed Drake and treated him kindly, supplying "rice, Hennes, imperfect or liquid sugar, sugar-cane, . . . store of cloves, and meal which they call Sagu (sago) made of the tops of certain trees tasting in the mouth like soure curds. . . ." At Baratreve they found nutmegs, ginger, long pepper, lemons, and sago. At Java Major (Sumatra) the voyagers were received with courtesy. They reported the "French pocks" very common in the island and "cured by sitting in the sunne, whereby the venomous humour is drawn out."

The *Golden Hind* now headed for the Cape of Good Hope, and had so pleasant a passage that they believed the Portuguese had lied in reporting this the most dangerous cape in the world. On November 3, 1580,

A little weed-clogged ship  
Grey as a ghost glided into the Sound  
And anchored, scarce a soul to see her come  
And not an eye to read the faded scroll  
Around her battered prow, "The Golden Hind."

—ALFRED NOYES, "Drake," Book VII

Long before Drake returned the fame of his exploits on the South American coast had reached Spain, and Philip was angrily demanding that immediately on his return Drake be hanged as a pirate. Elizabeth, following her policy of

keeping enemies as well as friends in doubt as to her intentions, is said to have made answer that "if we find that Drake has injured our friends, he will be duly punished." Elizabeth braved Philip's anger by honoring the *Golden Hind* with her royal presence, and Francis Drake knelt before her, to rise Sir Francis. (Hakluyt, xi, pp. 101-132.)

Once again English merchants had to be shown that with no great force Englishmen might sail in the Indian seas, might plunder Spanish ships and traffic for spices, and still come home safely. In 1586, Thomas Candish (or Cavendish) sailed from England, through the Straits of Magellan, up the South American coast, through the East Indies, and home by Cape of Good Hope, returning in 1588. Seated in a corner of the White Hart Inn at Plymouth, Candish penned a letter to Lord Hunsdon, the Queen's chamberlain, begging him to inform Her Majesty of the service he had rendered her, ". . . For the places of their wealth, whereby they have maintained and made their warres, are now perfectly discovered, . . . I ran along the coast of Chili, Peru, and Nueva Espana . . . burnt and sunke 19 sails of ships . . . matter of most profit was a great ship which I took at California which came out of the Philippines. . . . I sailed among the Islands of the Moluccas where . . . I was well intreated . . . where our countrymen may have trade as freely as the Portugals if they will themselves. . . ." (Hakluyt, xi, pp. 376-378.) Among the spices which Candish brought home was star anise, which seems to have reached Europe for the first time in his vessels. (Flückiger and Hanbury, p. 21.)

Candish had little to tell that Drake had not told eight years before, but the temper of the English had changed much since Drake's return. Only a few months before Candish returned the Great Armada had come up the Channel. Spanish sea-power, although far from being destroyed, would never again inspire with terror as it had done.

Still, Englishmen were slow to embark in a new venture, and three more years of discussion were required. In 1591 the first trading expedition for the Indies was fitted out. The *Penelope*, admiral; *Marchant Royall*, vice-admiral, and *Edward Bonaventure*, "rere-admiral," composed the little fleet. They were commanded by George Raymond. By the time the Cape was reached, scurvy was raging among the crew. A stop was made, cattle purchased from the natives, and seal and penguins killed. The ship's companies had been so depleted that the *Marchant Royall* was sent back. Soon after leaving the Cape, the *Penelope*, with all on board, went to the bottom in a storm. Captain Lancaster, in the *Bonaventure*, held on for the Indies. Reaching the Malay Peninsula, the sick men were landed. Within a short time the company was reduced to 32 men and one boy, many of the survivors sick. Notwithstanding their weakness, they captured a number of small Portuguese vessels, and Lancaster would have captured more, but that the crew took advantage of his sickness to head for home. Misfortune still followed them. In the Atlantic they were driven by adverse winds to the American coast, and here drifted helplessly for a time. While most of the crew were ashore the cable broke, and the bark drifted out, manned by five men and a boy. Somehow this little company brought the ship into Plymouth. The men left in the West Indies were brought home by a French vessel.

The water-damaged spices in the hold of the *Bonaventure* had cost a terrible price in lives of British seamen. This much the expedition had done: it had shown that a Pope's bull could not give a secure title to India and its spices.

(Hakluyt, vi, pp. 387-407; see also Beckles Willson, "Ledger and Sword," i, pp. 10-13.)

The second attempt of London merchants to trade to the Indies was even less successful than the first. In 1596, Captain Wood sailed with three small ships, laden with cloth, knives, and bullion, to be exchanged for spices. Not one ship or seaman was ever to see England again. By devious ways the story came back of the capture of a Portuguese ship in Indian waters, of fearful losses by fever, of shipwreck in the West Indies on the return voyage, and of murder of the survivors by the Spanish. ("Ledger and Sword," i, pp. 14-15.) Surely only a great faith could have seen beyond these feeble attempts and tragic failures the founding of a colonial empire.

Although the *Edward Bonaventure* of the first English voyage had returned with a cargo of spices before Houtmann had started with the first Dutch expedition, in the last years of the century the Hollanders were leaving the English far behind in the race for the Indies. So many vessels were the Dutch using in the Indian trade that in 1599 they sent agents to London to buy or charter English ships. The answer given to these agents was as follows: "Our merchants of London have need of all our ships and have none to sell to the Dutch. We ourselves intend forthwith to have trade with the East Indies." ("Ledger and Sword," i, p. 20.)

For there were now signs of a real awakening among London merchants to the possibilities of the Indian trade. It was realized that only by a strong organization could anything be accomplished. A movement was afoot to secure a charter conferring exclusive right to the Indian trade for a term of years. The first meeting held by the promoters was on September 24, 1599. A notable gathering it was, including members of the Turkey Company and other merchants and men of substance in the city, several aldermen, and the Lord Mayor himself. Then there were men who had sailed with Drake and Cavendish, veterans of the northwest and northeast voyages, men who had braved the power of Spain on the seven seas and were willing to do so again. Within a short time 33,000 pounds were subscribed and steps were taken to obtain a charter. Now ensued long-drawn-out delays. Elizabeth was negotiating a treaty with Spain, and wished to do nothing to offend that nation.

A memorial was drawn up showing "Certayne reasons why English Merchants may trade into the East Indies especially to such parts as are not subjecte to the Kinge of Spain and Portugal. . . ." On the last day of the sixteenth century, Elizabeth signed the charter of the Governor and Company of Merchants of London trading to the East Indies; conferring the privilege of exclusive trade into the "countries and ports of Asia and Africa, and into and from all of the islands, ports, towns, and places of Asia, Africa, and America, or any of them beyond the Cape of Buena Esperanza or the Straits of Magellan, where any traffic may be used." (Purchas, ii, pp. 366-391; also "Ledger and Sword," i, p. 43.)

Long before the charter had been granted, the merchants had been making preparations for a voyage. The first vessel purchased by the company was the good ship *Susan*; later the *Hector* and *Ascension* were acquired. The adventurers then sought for a larger and better ship; one that was fitted not only to carry a cargo, but to hold her own in a fight with the best of the Portuguese vessels. Such a ship was found in the *Malice Scourge*, a ship of 600 tons burden, with a privateering record. She was rechristened the *Red Dragon*. The cargo purchased consisted of iron and various cloths, such as kerseys, broadcloths, and Norwich stuffs. It was the English policy from the first to make the Indian

trade build up home industries by sending the products of English factories to barter for spices. ("Ledger and Sword," i, chapter ii.)

The commander and ships' captains were very carefully chosen. The chief in command was Captain James Lancaster, captain of the *Bonaventure*, of the voyage of 1591. All of the other captains had made the Indian voyage before. ("Ledger and Sword," i, p. 41.) Among the many records available of preparations for the voyage, it is interesting to note that "Edmund Scott, who pretends to a knowledge in the choice of drugs and spices, is to be employed in the voyage upon putting in 200 pounds venture." ("Calendar of State Papers," Colonial, East Indies, 1513-1616, p. 119.)

The "four tall ships" sailed from Woolwich, February 13, 1601. No farther from home than the coast of Guinea, a Portuguese carrack was sighted, and the English were soon transferring 146 butts of wine, besides stores of oil and meal, from her hold to their own. Probably the plentiful supply of wine thus provided did much to bring on the scurvy which soon ravaged the crews. The Admiral had taken the precaution to bring in his own ship "certain bottles of juite of limons which he gave to each one as long as it would last, three spoonfuls every morning fasting." The other vessels seem to have been unprovided. By the time the Cape was reached, 105 men had succumbed, and a six weeks' stop was necessary to restore the survivors. Another long stop was made at Madagascar.

On June 2, 1602, the squadron reached Achin, in Sumatra, where were found 18 sail in the harbor, including Spanish, Portuguese, Dutch, and traders from various parts of Asia. Learning the name and rank of the native potentate, Lancaster filled in one of the form letters signed by the Queen, with which he was provided, and hastened to present this to the monarch, together with a belt, some pistols, plumes, looking-glasses, glass toys, and other trinkets. Doubtless the letter made a favorable impression, but the gifts won the King's heart, and he was ready to promise anything. While he was in this mood Lancaster secured his signature to a treaty. The Admiral had much to learn in regard to native princes and their promises; he soon found that it was one thing to hold a treaty and another to secure cargoes of spices.

However, Lancaster bethought him of another way to obtain a lading. English vessels need not lack cargoes so long as Portuguese carracks were on the seas. Leaving two factors, the English sailed from Achin, and within a short time captured a 900-ton prize laden with cloves and pepper. Returning to Achin, Lancaster loaded the *Ascension* and ordered her home to gladden the hearts of the waiting merchants. The *Susan* soon followed, while the *Dragon* and *Hector* went to Bantam, in Java. Here no difficulty was met in establishing a factory, and, English wares proving popular with the Javans, trade went merrily on. The Admiral purchased a 40-ton pinnace, and sent her to the Moluccas to establish trade there, while he with his two remaining vessels returned to England. The King of Bantam sent to Queen Elizabeth as a present "certain Bezar-stones, very faire." (The bezoar-stone is a concretion in the alimentary canal of ruminants, especially of a certain species of goat. Bezoars were formerly considered as very valuable in medicine. They are frequently mentioned in records of Indian voyages.) Elizabeth was never to receive the present of the King of Bantam, as she died before Lancaster reached home. (Purchas, ii, pp. 392-437.)

One day in June, 1603, a messenger rode into London with the message for the East India Company that the *Ascension* was in Plymouth. Letters were written to the West Country that provision be made for the comfort and relief of

the sick among the crew, and further forbidding the officers to break bulk or sell anything until London was reached. A record later in the month says, "The *Ascension* is in the River," and mentions that six canvas suits *without pockets* were to be made for the use of the porters employed in handling the pepper and cloves. The cargo of the *Ascension* consisted of 210,000 pounds of pepper, 1100 pounds of cloves, 6030 pounds of cinnamon, and 4080 pounds of gum lacquer. ("Calendar State Papers," Colonial, East Indies, 1513-1616, p. 138.) The other vessels of Lancaster's fleet arrived in due time, bringing altogether 1,000,000 pounds of spices.

The company, although much embarrassed by deaths among the members and by difficulty in prompt disposal of the spices, in March, 1604, sent a second voyage, using the same ships that had gone on the first. Henry Middleton was placed in command. The journal of this voyage is the only unmutilated record we have of an early English voyage to the Indies. Some few incidents of this venture will be mentioned. As usual, the crews suffered fearfully from scurvy while opposite equatorial Africa. Under date of May 6, we find the entry that ". . . many of our men are sick of scurvy, calenture, bloody flux, and worms, being left to the mercy of God and a small quantity of lemon juice every morning; our physician shipped for that purpose being as unwilling and as ignorant in anything that might help them." ("Voyage of Sir Henry Middleton," H. S., p. 6.) It is difficult to understand how, after the experience of Lancaster on the previous voyage, the company could have neglected to provide an adequate supply of lemon-juice.

The Admiral had orders not to stop at the Cape for refreshment, but when the sick men saw that he intended to run past, a cry for mercy went up, and Middleton, looking out of his cabin door, ". . . where did attend a swarm of lame and weak diseased cripples," was moved to pity and consented to run into Saldania Bay. (This harbor, named in honor of Saldanha, a Portuguese commander, was resorted to by the ships of all nations that followed the Cape route. It is our modern Table Bay.) The sick were all restored by the fruits, vegetables, and fresh meat obtained at Saldania, but before the squadron reached Bantam in December conditions were just as bad again. Here the Dutch proved good friends, meeting the English outside the harbor with fresh food and offers of assistance. The latter were gratefully accepted, since the English crews were scarcely able to bring the vessels into the harbor.

At Bantam they found relief from the scurvy, only to fall victims to flux—doubtless tropical dysentery. In almost every day's record in the journal we find mention of one or more deaths from this dread disease. The Dutch had early discovered the water of Bantam to be unwholesome, and the mortality among the English stationed there was always high.

Leaving the *Hector* and *Susan* to be loaded with spices and despatched for England as early as possible, Middleton, with the *Dragon* and *Ascension*, went on to the Island of Amboyna. The Portuguese had a fort there, and upon Middleton's imparting to them the news that Elizabeth was dead and that early peace between Spain and England might be expected they agreed to allow the English to trade. However, the Dutch spoiled this arrangement by appearing with a strong force and compelling the surrender of the Portuguese. Middleton saw that his prospects for trade were ruined and went on to the Moluccas.

While in the Moluccas the English witnessed the capture of the Portuguese fort on Tydore, as has been recounted. They were able to secure a considerable quantity of cloves by barter, but were unable to make satisfactory arrangements

for future business. In the meantime the *Ascension* had visited Banda and trafficked for nutmegs. Returning now to Bantam, Middleton found that of the 24 men left there, 12 had succumbed to flux.

The *Dragon* and *Ascension* now sailed for home. Off Saldania Bay they found the *Hector* almost helpless as the result of a terrific storm in which her consort, the *Susan*, had perished. The *Hector* was repaired, and the three vessels reached home in May, 1606. The two first ventures of the company, considered as one, had paid a profit of 95 percent on the investment, not including interest. ("Voyage of Sir Henry Middleton," H. S.; also "Ledger and Sword," i, chapter iii.)

We cannot continue with the records of individual voyages of the East India Company, but must be content with mention of some of their difficulties and defeats, and with a general view of their achievements. English trade did not develop with great rapidity, as had the Portuguese and the Dutch. During the early years of its history the English Company was able to send no more than two to four ships annually, and the fifth venture consisted of a single ship. In numbers of ships and men, as well as in amount of capital available for trade, the English at this period were far weaker in the Indies than either Portuguese or Dutch. How did they fare in competition with these powerful rivals?

We have noted the capture of Portuguese carracks before the English first traded to the Indies. This policy was continued both by the commanders of the two independent voyages of 1591 and 1596, and by the East India Company's captains. Lancaster, of the company's first voyage, had found it easier to obtain spices by capture from the Portuguese than by barter with the natives. So we see that from the beginning the English had been the aggressors. It is true that at this time there was war between Spain and England and every English merchant vessel was a privateer. However, even after the establishment of nominal peace, conflicts were frequent. There was seldom a time when either one would not attack the other if it was considered that advantage could be gained by so doing. The English seem almost always to have been the victors in these contests. The small English vessels could outsail the carracks, and English gunners could generally shoot with greater accuracy than those of Portugal. During the early decades of the seventeenth century the Portuguese were being crowded out of their factories by the Dutch, and their vessels were being sunk and captured by both Dutch and English, so that their power in the Indies rapidly declined.

One notable incident of the struggle between Portuguese and English was the Ormuz affair. It will be remembered that Albuquerque had found Ormuz dominating the commerce of the Persian Gulf and had captured it from the Persians. Under the Portuguese the city had continued to enjoy great prosperity. Now the English were contesting with the Portuguese for the commerce of Persia, and in 1620 and 1621 there were several pitched battles in and near the Persian Gulf. Observing the growing power of the British, the Khan of Shiras, who ruled considerable territory bordering on the Gulf, undertook to force them to aid him in driving the Portuguese out of Ormuz. The company's factor at Ispahan having despatched a rich consignment of silks for Jask, the Khan captured the caravan and refused to release it, and also threatened to stop all further trade with the interior unless the English would allow their ships to aid him in the capture of Ormuz. Thus constrained, and probably not unwilling to further weaken the Portuguese, the English, in 1622, diverted several of their vessels from the Molucca trade long enough to participate in the attack on Ormuz.

After a lengthy siege the Portuguese were forced to surrender. The Portuguese captives fell into the hands of the English and their lives were spared. (Purchas, x, pp. 342-374.)

The record of the relations between Dutch and English in the Indies is that of a continuous series of jealousies, accusations, and bickerings, finally breaking into armed strife. It is very difficult to obtain an unbiased view of the relations, especially since most of our sources have been of English origin. The Dutch were in the Indies in far greater strength than the English, naturally they wished to control the trade, unavoidably there was strife. In the latter part of the second decade of the seventeenth century the Dutch, on one pretext or another, seized several English vessels.

The English Company drew up a formal protest, which was presented to the home government; this was met by the Dutch sending a long list of offences committed by the English. Commissioners were sent from Holland to negotiate with King James for a settlement. The proceedings dragged on and promised little hope of relief. The English Company grew impatient and sent Captain Best to the Indies with a strong squadron to protect the company's interests, by force if necessary. Best aided the Javans to drive the Dutch out of Bantam, which proved but an empty victory for the British. Twelve English ships and 15 of the Dutch were just about to clash in the Straits of Sunda, when the *Bull*, an English vessel, arrived with news that the two nations had settled their difficulties.

The agreement which had been reached provided for a restitution of ships and property, a division of the trade on the basis of amount of capital invested by each company, and a joint council of defence. Each nation was to provide ten ships of war, not to be used in the carrying trade. The agreement proved entirely unfeasible, and was unsatisfactory to both parties.

The incident which was to promote the most bitter resentment on the part of the English was the so-called "Massacre of Amboyna," in 1623. The Island of Amboyna had come to be an important centre of the spice trade, and here the Dutch had a strong fort and garrison. The English had an undefended factory operated by a group of men, of whom Gabriel Towerson was chief. The Dutch and English had lived side by side for two years, and had shown each other many courtesies. According to the English version, the Dutch obtained from certain Japanese a confession of an English plot to surprise and capture the fort. That the little group of almost unarmed Englishmen should have entertained such ideas is not to be thought of. The Dutch invited the unsuspecting Englishmen to the fort, and there proceeded to inflict the most horrible tortures, until in their agony most of the Englishmen confessed that the plot had existed. All were then executed. ("Ledger and Sword," i, chapter vi; also Purchas, x, pp. 507-522.)

This sad affair forms the basis of the play, *Amboyna*, by John Dryden. This was written in 1672, probably by command, as an aid in stirring up English sentiment in favor of a Dutch war. The author ascribes every virtue to the English, and every sin in the calendar to the Dutch. He makes one of the latter say:

I wish your whole East India Company  
Were in this room that we might use them thus,  
They should have fires of cloves and cinnamon,  
We would cut down whole groves to honor them,  
And be at cost to burn them nobly.

—JOHN DRYDEN, *Amboyna*, Act V, scene i.

The Dutch had always regarded the islands as the district of profitable trade, and the early efforts of the English likewise had been directed towards establishing themselves in the archipelago. Ten or eleven years after the company's first venture, when they still had only the most precarious footing in a few of the islands, we find the English attempting to locate factories on the coast of India. Several such attempts failed or proved unprofitable.

In 1612, Captain Best arrived with the *Red Dragon* and the *Hoseander* off Swally Road, on the Malabar coast, with the purpose of establishing a factory at Surat. A Portuguese fleet undertook to prevent him. The battle which followed lasted, with intervals of rest, for several days, and was a desperate engagement. The Portuguese finally withdrew. Best's two vessels were not only afloat, but apparently in good condition. Very soon after this the Great Mogul granted permission for the establishment of a factory at Surat. This was the first English foothold on the Malabar coast, and was destined to grow into a great and prosperous factory. ("Ledger and Sword," i, pp. 95-97.)

We are given by one of the company's servants at Surat, late in the seventeenth century, a view of the trade as it was at that time. He says: "The South Sea trade is still maintained to Bantam with such cloth as is vendible there, from thence with dollars to China for sugar, tea, porcelane, laccared ware, quicksilver, and coffee; which with cowreys, little sea-shells, come from Siam and the Philippine Islands; gold and elephants' teeth from Sumatra in exchange for corn. From Persia . . . come drugs and Carminia wool; from Mocha, Cohar or coffee. The inland factories subject to it are Ahmedabad, whence is provided silks, cutlasses; Agra, where they fetch indico (indigo) . . . and fine calicuts (calicoes). Along the coast . . . Calicut, for spice, ambergreez, granats, opium, with saltpeter. . . ." ("Ledger and Sword," i, pp. 381-382.)

We learn from the above that tea and coffee were coming to constitute an important part of the company's wares.

The history of the development of the power of the British East India Company in its relations to the traffic in drugs, spices, and dyestuffs is of the greatest importance, and, furthermore, is alive with interest. Much material is available; volumes might be written. The writer of this paper regrets that lack of time forbids him to devote adequate attention to this as well as to other divisions of the general subject. He cannot close without reference to the intensely interesting material found in the "Court Minutes" of the East India Company which have been available in abstracted form in the "Calendar of State Papers." In the "Court Minutes" are recorded discussions of all of the affairs and interests of the company, ranging all the way from progress of negotiations between James I and the Commissioners of the States of Holland to mention of a complaint of a London merchant that a few sacks of cloves purchased of the company were full of stems and dirt. Only a few scores of interesting items can be mentioned.

October 3, 1615.—"Mr. Lutterford accused of mingling dust and other trumperies amongst the pepper that he had from the Company; excuses himself that he had done the like before and promises to have it screened at Naples where it is to be sold, but they held it to be a great deceit, wrong, and scandal to the Company, disgrace, discredit, and disparagement to this nation, and to maintain the honour of the Kingdom and Company resolved to have a warrant procured to make a stay of it all." ("Calendar of State Papers," Colonial, East Indies, 1513-1616, p. 431.)

January 8, 1610.—" . . . the youth, an apothecary, skilful in distillation

and commended by Lord Carew, to go as surgeon's mate's mate." ("Calendar of State Papers," Colonial, East Indies, 1513-1616, p. 202.)

December 10, 1614.—"Capt. Castleton to be entertained, (retained or hired) the duties he will have to perform; trial to be made of sundry of his proposals, including the baking of fresh bread at sea, with the grinding of corn an exercise fit to preserve men in health . . . distilling fresh water by having stills fitted to the furnaces, carrying a hogshead of fresh provisions to be used only in cases of necessity. . . . Offer of Dr. Burgis to present the Company with an antidote against poison, scurvy and other diseases with which people are subject these long voyages. . . ." ("Calendar of State Papers," Colonial, East Indies, 1513-1616, p. 353.)

November 26, 1621.—" . . . The spices given towards Christide unto any great men, honourable benefactors to this Company or to any others as in former times, not to be given this year by reason of the great damages the Company have sustained, not doubting but all that know the same will take none offence thereat." ("Calendar of State Papers," Colonial, East Indies, 1617-1621, pp. 1491-1492.)

March 5, 1619.—"Virginia wheat, called maize, much commended for an excellent strong meat and hearty for men at sea, and more wholesome than beef; the Virginia Company to be desired to procure some for trial by the next shipping." ("Calendar of State Papers," Colonial, East Indies, 1617-1621, p. 255.)

#### CONCLUSION.

Professor Walter Raleigh, of Oxford, in his essay on "English Voyagers," says: "Men have travelled as they have lived, for religion, wealth, knowledge, pleasure, power, and overthrow of rivals." In the imperfect picture which has been presented of the struggles of four nations to roll back the clouds from the unknown parts of the world, we have seen evidences of each one of the motives enumerated by Raleigh. In the cases of many of the individual actors in the world-drama, as well as of the nations themselves, an analysis of motives is very difficult. However, running all through the story we have found the same "odor of far-fetched spices," and we can safely say that had it not been for the desire for spices and drugs, and for the rich profits to be gained by a control of the supply of these, the Age of Discovery would not have come when it did.

Spices and drugs have not lost their importance as the centuries have passed. The same pepper and cinnamon, cloves and nutmegs, that made up the bulk of the cargoes of Portuguese, Dutch, and English vessels in the seventeenth century, are still counted among the important products of the Asiatic coasts and islands. They are no longer obtained to any considerable extent by barter with natives, but are produced under cultivation on great plantations in the Dutch and British East Indies. Their culture has been most carefully studied and highly systematized. No longer do the carracks and galeots spend from six to nine months in the long Cape voyages; but speedy steamers, travelling by way of the Suez Canal, make the trip between Batavia and Amsterdam, or between Singapore and London, in a few weeks at the farthest.

This narration may have served to call to our attention that these products of the East which to-day seem so commonplace have each its story; a story written in the blood of half a dozen European nations, as well as that of countless Asiatic tribes and peoples. It is well that we should think occasionally of the little vessels, hardly as large as our fishing schooners, finding their way across trackless oceans; that we should recall the mariners on those little ships, living

sometimes for weeks on putrid penguins and foul bilge-water; that we should try to imagine the suffering of a ship's crew stricken with scurvy, bloated limbs, swollen gums, teeth dropping out; that we should think of a little group of factors on some remote island, succumbing one by one to tropical dysentery, and wondering whether any would be left alive when the company's vessel returned after its long absence. It is even well that we should bring to mind the fights which often raged for hours on tropical seas; when sailors stripped to the waist served the double-shotted guns until yard-arm touched yard-arm, and then grasped cutlass or pike to board or repel boarders. They fought because of various hatreds—racial, religious, and what not; but the immediate prize to be contended for was a cargo of spices; and among the crew of the victor, perhaps one-sixth of the value of the prize would be divided. Under whatever flag they fought, whether they died in battle, by shipwreck, or from fever, or whether they lived to return crippled and diseased to a home port, there to drag out a miserable old age, the world of to-day is indebted to those seamen.

Tschirch has said that for Pharmacognosy the Age of Discovery was not a renaissance, but the beginning of an entirely new era. Where before men had known the bark, the seed, or the wood, having only the vaguest conception of the plant from which obtained, competent observers now studied the growing plants. Garcia da Orta, Linschoten, and other scientific men during the sixteenth century made accurate observations and recorded what they had seen. Manners of adulteration were studied and information provided which was of great aid in protecting against fraud. As for the active principles of the drugs, these were for the most part to remain unknown until a much later period. Until organic chemistry had developed no intelligent investigations could be made. The volatile oils, alkaloids, and glucosides we are even now only beginning to understand.

The exploration of the East Indies resulted in bringing to the knowledge of Europeans a number of drugs which before were unknown. Among those introduced into Europe during the sixteenth and seventeenth centuries we note: star anise, areca, gamboge, catechu, calumba, and nux vomica. Probably few Asiatic plant products would to-day be considered more important than tea, which first reached England in commercial quantities in 1669. Kino, Indian cannabis, chirata, gambier, and oil of cajuput apparently did not reach Europe until later than the seventeenth century.

We may believe that even yet additions will be made to our materia medica from among the products of the Indies. From "Pharmacographia Indica" and other sources we learn of many Asiatic drugs as yet little known in Europe and America. Doubtless, upon investigation, a number of these will prove to be valuable and important.

#### BIBLIOGRAPHY.

- Abram, A.: "English Life and Manners in the Later Middle Ages." London, 1913. Pp. 67-68, 137, 143.
- Barbosa, Duarte: "Coasts of East Africa and Malabar at the Beginning of the Sixteenth Century," translated from an early Spanish manuscript by Hon. H. E. J. Stanley. Hakluyt Society, 1866.
- Beazley, C. Raymond: "Voyages and Travels Mainly During the Sixteenth and Seventeenth Centuries" (from various sources). Two volumes. New York. Found also in "An English Garner."
- Brown, Horatio F.: "Venice, An Historical Sketch of the Republic." London, 1893. Pp. 237, 238, 250-256, 324-326.

- "Calendar of State Papers," Colonial Series, East Indies, Preserved in Her Majesty's Public Record Office and Elsewhere. London, 1862. Volumes embracing the following periods: 1513-1616, 1617-1621, 1622-1624, 1625-1629, 1630-1634. Papers are derived from three great archives—Public Record Office, British Museum, and the India Office. Comprises all papers connected with early voyages of northwest or other passages to India or "Cathay" in the Public Record Office, those in the British Museum, and the original correspondence, together with Court Minutes of the East India Company, from its establishment.
- Camoëns, Luis de: "The Lusiad, or The Discovery of India," an Epic Poem. Translated from the Portuguese by William Julius Mickle. Fifth edition. London, 1907.
- "Cathay and the Way Thither, a Collection of Mediæval Notices of China." Translated and edited by Colonel Henry Yule. Two volumes. Hakluyt Society, 1866.
- Clavijo, Ruy Gonzales de: "Narrative of the Embassy to the Court of Timour at Samarcand" (1403-1406). Translated by Clements R. Markham. Hakluyt Society, 1859.
- Clusius, C.: "Aromatum Medicamentorum Simplicium Historia." Antwerp, 1593. Lloyd Library, Cincinnati.
- Cocks, Richard: "Diary of, in the English Factory in Japan" (1615-1622). Edited by Edward Maunde Thompson. Two volumes. Hakluyt Society, 1883.
- Da Gama Vasco: "The Three Voyages of." From the "Lendas da India" of Gaspar Correa. Translated from the Portuguese by Hon. H. E. J. Stanley. Hakluyt Society, 1869.
- D'Albuquerque, Alfonso: "Commentaries of." Translated from the Portuguese edition of 1774 by Walter De Gray Birch. Three volumes. Hakluyt Society, 1875.
- Day, Clive: "A History of Commerce," New York, 1907. Chapters ix to xxi.
- Dryden, John: "Amboyna," with Notes by Sir Walter Scott. In vol. v, Dryden's Complete Works. London, 1808.
- Dymock, William: "Pharmacographia Indica." Three volumes. London, 1890. Lloyd Library, Cincinnati.
- Flückiger, Friedrich A., and Hanbury, Daniel: "Pharmacographia." London, 1879.
- Galvano, Antonio: "Discoveries of the World from their First Original unto the year 1555." Corrected and published in English by Richard Hakluyt, 1601. Now reprinted with the original Portuguese text, and edited by Vice-admiral Bethune. Hakluyt Society, 1862.
- Gerson, Armand J.: "The Organization and Early History of the Muscovy Company; in Studies in the History of English Commerce in the Tudor Period." University of Pennsylvania, 1912.
- Gildemeister, E., and Hoffman, Fr.: "The Volatile Oils." Second edition, by E. Gilde-meister. Translated by Edward Kremers. New York, 1913. Vol. i, chapter i.
- Hakluyt, Richard: "The Principal Navigations, Voyages, and Discoveries of the English Nation. Made by Sea or Over-land to the Remote and Farthest Distant Quarters of the Earth at any Time within the Compasse of these 1600 Yeeres." First edition, London, 1589; second edition, revised and enlarged, 1598, 1599, and 1600. Reprinted at Glasgow, 1903. Twelve volumes.
- Hawkins, Sir Richard: "Observations on Voyage into the South Sea, 1593." Reprinted from the edition of 1622. Edited by C. R. Drinkwater Bethune. Hakluyt Society, 1847.
- "India in the Fifteenth Century, a Collection of Narratives of Voyages to India." From Latin, Persian, Russian, and Italian Sources. Hakluyt Society, 1857.
- Leguat, François of Bresse: "Voyage of." Translated from the first French edition. Edited by Pasfield Oliver. Two volumes. Hakluyt Society, 1891.
- Linschoten, Jan Huyghen van: "Voyage to the East Indies." From the old English translation of 1598. Edited by Burnell and Tiele. Two volumes. Hakluyt Society, 1885.
- Magellan, Fernandus: "First Voyage Round the World." Translated from the accounts of contemporary writers by Lord Stanley of Alderley. Hakluyt Society, 1874.
- Middleton, Sir Henry: "Voyage to Bantam and the Maluco Islands." From the edition of 1606. Annotated and edited by Bolton Corney. Hakluyt Society, 1855.
- Motley, John Lothrop: "History of the United Netherlands." Four volumes. New York, 1869. Vol iii, pp. 544-580; vol. iv, pp. 105-111, 130-135, 243-250, 444-446.

- Noyes, Alfred: "Drake." In vol. i, *Collected Poems of Alfred Noyes*. New York, 1913.
- Okey, Thomas: "The Story of Venice." London, 1905. Pp. 125-129, 191.
- Polo, Ser Marco: "Concerning the Kingdoms and Marvels of the East." Translated and edited by Col. Sir Henry Yule. Third edition. Two volumes. London, 1903.
- Purchas, Samuel: "Hakluytis Posthumus or Purchas His Pilgrimes; Contayning a History of the World in Sea Voyages and Lande Travells by Englishmen and Others." Imprinted at London, 1625. Reprinted at Glasgow, 1905. Twenty volumes.
- Pyrard, François of Laval: "Voyage of." Translated from the third French edition of 1619 by Albert Gray. Two volumes. Hakluyt Society, 1887 and 1890.
- Raleigh, Sir Walter: "The Invention of Ships." No. 166 in *Old South Leaflets*, vol. vii. Boston.
- Ridley, Henry N.: "Spices." London, 1912. Pp. 1, 99-100, 158-162, 206-208, 228, 250-253, 326-327, 391-392, 424.
- "Social England." Edited by H. D. Traill and J. S. Mann. London, vol. iv, section i, pp. 70-74, 185-191.
- "Spain and Portugal, History of." Five volumes. Harper and Bros. New York, 1860. Vol. iii, pp. 202, 233-237, 242-252.
- Spielbergen, Joris van: "The East and West Indian Mirror, an Account of a Voyage Around the World" (1614-1617). Translated by J. A. J. de Villiers. Hakluyt Society, 1906.
- Stephens, H. Morse: "Portugal." New York, 1898. Chapters vii and ix.
- Tavernier, Jean Baptiste: "Travels in India." Translated from French edition of 1676 by V. Ball. Two volumes. London, 1889. Lloyd Library, Cincinnati.
- Tschirch, A.: "Handbuch der Pharmacognosie." Leipsic, 1909. Erster Band, Zweite Abteilung.
- Varthema, Ludovico di: "Travels of" (1503-1508). Translated from the original Italian edition of 1510 by John Winter Jones. Hakluyt Society, 1863.
- Vaughn, Earnest V.: "English Trading Expeditions into Asia Under the Authority of the Muscovy Company" (1551-1581), in "Studies in the History of English Commerce in the Tudor Period." University of Pennsylvania, 1912.
- William of Rubruck: "Journey to the Eastern Parts of the World" (1253-1255). Translated from the Latin by William Woodville Rockhill. Hakluyt Society, 1900.
- Willson, Beckles: "Ledger and Sword, or The Honourable Company of Merchants of England Trading to the East Indies." Two volumes. London, 1903. Vol. i.
- Zimmern, Helen: "The Hansa Towns." New York, 1895. Period II, chapters vi and vii.

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## THE COMPOSITION OF A ROMAN OINTMENT.

A Roman amphora has been found in the course of the excavations at Lugano containing a fairly soft unctuous substance with the odor of storax and turpentine. The author has been able to identify this with certainty as being a cosmetic ointment. It was found to have contained beeswax, some animal fat, turpentine, oleoresin, storax, and henna. All these were still detectable by the use of appropriate solvents and reagents. Doubtless it was the toilet cream of a fashionable Roman lady.—L. Reuter (*Comptes rend.*, 1916, 162, 471).

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