

Entering the mutilated houses, whose roofs are now the clouds, we have more than ever cause for regretting their violation. In the structure called the House of Aristides, the remaining frescoes are fast fading. On the walls there are well-nigh invisible pictures of the Sacrifice of Dirke. Next comes the House of Argo, ornamented with silver citherns and small satyrs. In the halls may still be seen large clay posts, which supported the stone benches. The niche of the household gods, the inner court with its waterless fountain, may all be seen, and there is also to be found more than one mark of the devastations committed by the soldiery of the eighteenth century. The baths too are still intact, and likewise narrow walls that may once have served for horses, if one may judge by the bones that have been found in them. The baths have been only partially uncovered, and extend far down under the ramshackle huts of modern times, their gutters clogged with a mass of rubbish and loose stones."

CURIOSITIES OF A SEED-WAREHOUSE.*

By CARNOCHAN DOUGLAS.

THE remarkable tulip-mania which swept over Holland three hundred years ago, when the cost of bulbs rose above that of the most precious metals—as much as four thousand five hundred florins being paid for a single root—still remains without a parallel in the history of gardening. Nevertheless, far larger sums change hands in a season over simple seeds than the outside public, however devoted it may be to the art of gardening, has any idea of.

Take the innocent sweet-pea, for instance. Who would believe that, of the better varieties, an average wholesale price for its seeds may be estimated at from one hundred to three hundred pounds per ton; and that anywhere from fifty thousand to one hundred thousand pounds would represent the output, wholesale, in one season alone? A specially choice novelty would command at least five pounds per ounce retail—which would total out to one hundred and seventy-nine thousand two hundred pounds per ton, if such a quantity were ever required. This is a truly astonishing figure—an ample fortune for many a man.

As compared to these, we find the cost of the cheaper varieties of seeds—say, the common convolvulus—would probably amount to only fifty-six pounds per ton wholesale.

Even so, the vegetable and agricultural seeds vary in representative money value: cauliflower, onion, celery, parsnip, mangold, swede, turnip, clover, and grass seeds all differ in price according to their quality and novelty.

It is obvious that the enormous quantities of seed required are not grown within the British Isles; they are gathered together from every corner of the world, and the intermediary between the grower and the retailer or market-gardener is the wholesale seed-merchant.

The heads of these wholesale houses are not known to the general public. Advertising in any form is as strictly tabooed as it is by the members of the Royal College of Surgeons; the retail houses only may advertise to their heart's content.

The bulk of the seed imported is temporarily stored in large warehouses, whose mysteries are strictly guarded and inaccessible to the outsider.

The flower-seed department alone of one of these large depositories occupies a whole building consisting of a basement and four floors. The ground-floor is entered through massive double iron fireproof doors, which effectively protect it from fire and thieves.

In the center of this floor are large bins filled with seeds, mainly sweet-peas; while round the sides run long fixed counters where men are busily employed, one of each couple weighing out the quantity ordered, while the other puts it into seed "pockets" or brown-paper bags, according to the size required.

Behind these workers the walls are lined with innumerable drawers filled with loose seed. These contain every known variety of flower seed carefully labeled each with its Latin name. Some of these drawers, when filled with choice kinds of seeds, such as primulas and cinerarias, represent an enormous money value. One pound of such seed would cost from one hundred and thirty to two hundred pounds wholesale; or a choice petunia-seed, for example, would range at about ten pounds ten shillings for a single ounce.

On the next floor, in place of the drawers of seed, part of the walls are filled with pigeon-holes, into which the packets of different varieties of seeds are put. At the counters in front of the pigeon-holes men and women are engaged rapidly filling and making up the packets, which are placed in the holes ready for dispatch at a moment's notice.

The center of the floor of the third story is piled high with sacks to replenish the drawers and bins on the lower floors. Here are bales and bales of nasturtium-seed from Great Britain and the Continent; tons and tons of sweet-pea seed from California; also tons of mignonette-seed harvested on the banks of the Loire, the native land of Margaret of Anjou, queen of our Henry VI., or grown on the fields near the Bode-thal, in the neighborhood of the fairy-haunted Brock-en; while the rest was harvested in Essex. In addition to all these, there are innumerable bags of mari-gold and eschscholtzia seed.

On the shelves that flank the sides of this granary are placed smaller-sized bags containing costlier varieties of different seeds—one with six and a half pounds of a choice variety of pansy, representing a money value (wholesale) of eighty-four pounds. Asters are

there in endless variety, for of these seeds some growers order as many as twenty pounds to be used for cut flowers alone.

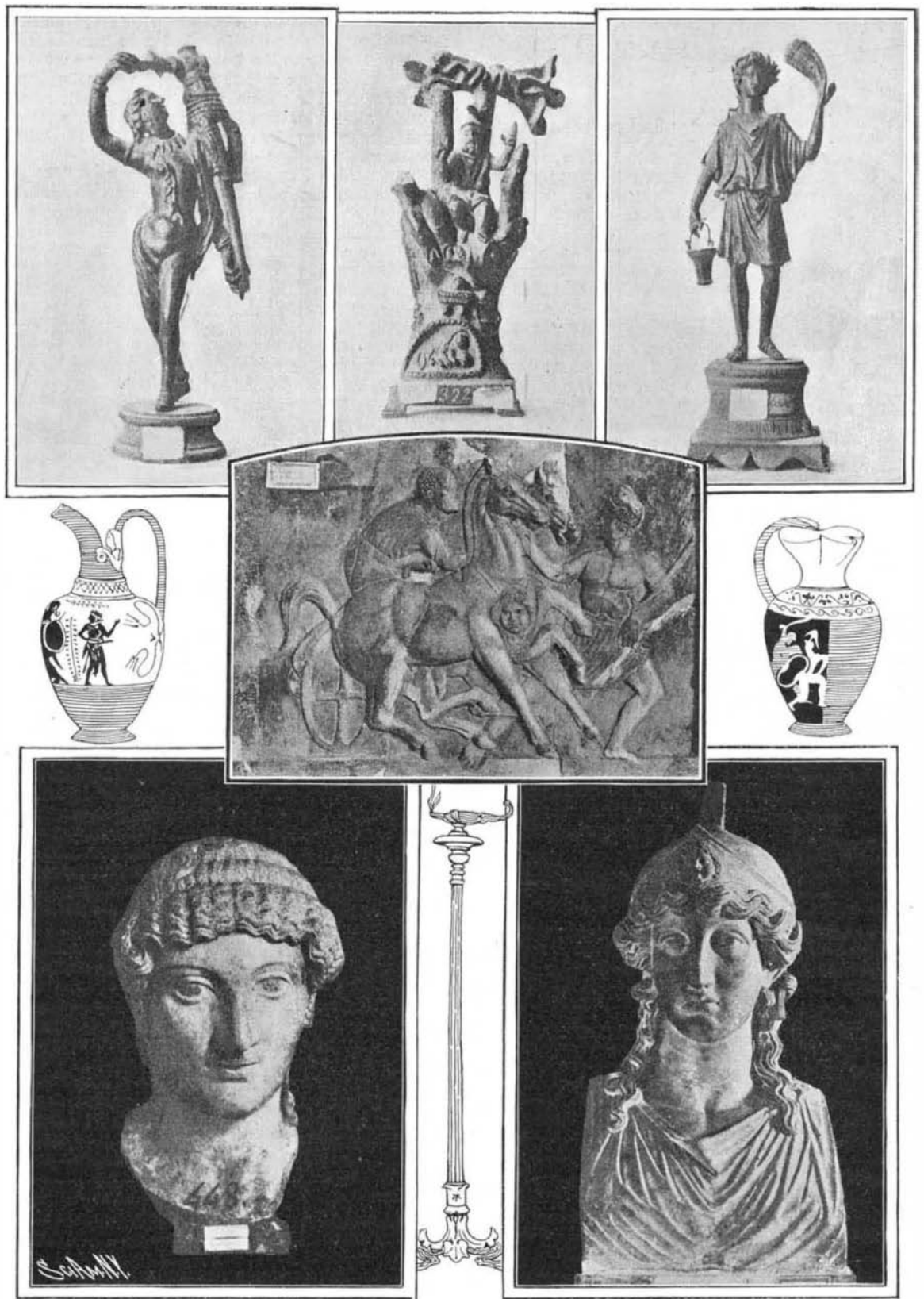
A large portion of the top floor is covered with bags of seed piled high to the ceiling, which are likewise used to replenish the stock on the lower floors. The more interesting portion of this story, however, is that part partitioned off with strong wire-netting and securely locked. Behind this stout barricade are kept what are known as the stock seeds of the firm. These seeds have been carefully selected and improved on the firm's own trial-grounds, to insure that the seed for disposal one or two years hence may be of the very best strain. These are sent to those countries whose climates are best suited to their reproduction and their products, and received back after harvest. Before the seed thus obtained is allowed to pass into the hands of the retailer it is once more tested to see if its growth is perfect.

As in the case of famous racehorses, the pedigrees

stately *Tulipa gregii*, and delicately tinted Murillo tulips. There are, however, also lilies from Japan, freesias from France and Sicily, beautiful ranunculi from Italy and Anjou, not to mention narcissi from the Channel and Scilly Isles, tuberoses from the United States, and lily of the valley from Germany.

The vegetable department is equally fascinating. For example, Rochfort's Market, one of the choicer varieties of cucumber-seed, has a wholesale value of about eighteen shillings per ounce, or thirty-two thousand two hundred and fifty-six pounds per ton—if such an immense quantity were required by any individual, which is never the case.

When we realize that one ton of this seed might, on an average, produce something like seven hundred and sixteen million eight hundred thousand cucumber plants, we may have some faint idea of the truly appalling and colossal vista of indigestion for which it would be responsible should an unwary public have no proper regard for its *petites Maries*.



Victory bearing trophy.
Aphrodite.

Hand in pose for taking oath.
Two-wheel chariot guided by a Moor.

Youth with bucket and flabellum.
Pallas.

HERCULANEAN MARBLES AND BRONZES PHOTOGRAPHED FOR THE FIRST TIME BY PROF. DOMENICO LOSACCO OF GIOJA.

of these precious stock-seeds are carefully preserved in large, heavy-locked ledgers, so that the family tree of each class of seed may be readily traced back through generations of ancestors. This is a highly important and intricate part of the detail of the business.

The trial-grounds on which these test results are obtained are likewise replete with interest. The seeds to be tested are sown in short rows, each row being numbered, and a full description kept in the firm's books. When the blooms have reached maturity they are examined as to color, habit, size, etc., and should any "rogues" be present they are carefully noted in the firm's trial books.

In another warehouse there is to be seen a large staff busy with the execution of orders for bulbs. These also had traveled far and wide ere they reached the heart of foggy London. The bulk came from Holland; for instance, such hyacinths as Czar Peter and La Grandesse, with their gorgeous scented blooms, or the

Cauliflower-seed is here in abundance, and not less interesting from the fact that it has been grown on the slopes of Mount Vesuvius, and fertilized by the lava poured out in past ages, possibly even by that which engulfed historic Herculaneum itself.

Tiers and tiers of sacks are piled high up on this floor, all filled with broad beans, the greater part of the early varieties of which have been grown near Seville or on the plains of Italy. Quantities of peas of all varieties are collected on another floor, hundreds of tons of the seed of this favorite vegetable passing through the building in one season. Hundreds of bushels of these have come the three months' journey by sailing-vessel from New Zealand; others have been brought from Canada; others again have been harvested in the fertile plains of Germany near the Hartz Mountains.

Elsewhere are stored immense quantities of the scarlet-runner bean. How little the amateur gardener,

* Chambers's Journal.

when he invests threepence in half a pint for his garden, knows about his purchase, or realizes how far these beans may have come! There flashes through his mind no picture of the districts in far-away Galicia, behind the Carpathians, where they have been harvested. The work of farming and harvesting these beans is done mainly by peasants quaintly dressed in their native garb of sheepskins, who cultivate small portions of ground. After harvest these men flock to the local markets, each with the produce of his small plot of land, which he disposes of to the buyer. The buyers, chiefly Jews, make a good profit as middlemen between the peasant cultivators and the British wholesale merchant, and hundreds of bushels of beans are thus sent *via* Danzig and Hamburg to London. In a lofty granary are piled quantities of radish-seed, of which some growers plant as many as twenty bushels. How insignificant seems the ordinary ounce one buys when compared with this! Close by are stored tons of the seed from which our favorite spring onion is raised, and which claims southern France as its home.

It is wonderful to note the care necessary for the production of those velvety lawns for which the British Isles are so famous. The answer given by the old gardener at one of the Oxford colleges to the American who asked him for his lawn-recipe does not quite suffice.

"You cuts un and rolls un and cuts un and rolls un," replied the old man.

"Is that all that is required?" asked the stranger.

"Ye-es, just cuts un and rolls un for two hundred years, or more, and you gets your lawn all right."

Something more is required than even this, however. The seed has been collected from many countries. Germany, Holland, Canada, New Zealand, Ireland, and the county of Kent all contribute their share toward it. The different samples thus obtained are thoroughly cleaned and "screened," so that no foreign weed may remain. The natural grasses are then mixed with just as great care as the tea-merchant devotes to the blending of his teas or the chemist to the making-up of an important and intricate medicine; indeed, the sheet descriptive of the ingredients resembles nothing more than a doctor's prescription. The quantities of each variety are all accurately specified and the names written in Latin (Latin, be it said, peculiar to the seedsman, and scarcely admissible in classic circles).

Another interesting department is that of the pea-pickers. About a hundred women are employed for the work. They are seated in rows at desk-shaped benches, and bright and happy they look working away as their tongues keep tune to their hands. Rapidly they pick out the bad peas and allow the good to fall through a hole in the desk into a bag beneath. This bad seed, when carefully separated, is used for feeding purposes. In an ordinary way these women pick from five to six bushels per day; but should the peas be weathered, as in the last season, it might take two days to pick a single bushel.

Wonderful to tell, the seedsman has also his incubator. In a room at the top of one of the buildings are found hundreds of small pots containing growing seeds. These are tests to ascertain whether or not the seeds will really grow, and in this way every lot of seed which comes into the warehouse is at once sampled—that is, fifty or one hundred seeds are counted out and placed in the testing-chamber. The results of these growths are recorded in a book, and later transferred by the testing-man into the large locked ledgers which have been already mentioned; thus percentages of the growths are obtained.

To prove the correctness of these results, a duplicate sample of seeds is put into an incubator, much after the fashion adopted by the scientist to propagate his bacilli. The seeds are wrapped in blotting-paper, then put on thick sheets of the same, and placed on zinc trays; they are then thoroughly damped and left in a hot chamber to germinate, which takes about two days. The necessity of the portly pedigree-books becomes at once apparent, because no matter what information is required, they can give it all. At a glance one can see what quantity of stock exists, where grown, and from what parentage.

The busiest time in one of these warehouses is naturally from November until February, when enormous quantities of seeds and bulbs pass through the buildings, and any one who is then lucky enough to obtain permission to visit one of these closely guarded depositories, teeming with interest, will scarcely regret the hour thus spent.

SOCIAL PIONEERS OF SCIENCE.

By T. H. S. ESCOTT.

"I CARE nothing about *homo*, Huxley, except as a creature of historical tradition." "And I, Hannay, care nothing about *homo* except as a compound of gas and water. But if you and I were better educated men than we are, we should know how to respect each other's studies more." Such was the little fragment of dialogue between two typical representatives of different intellectual cults which (being in their company) the present writer happened to overhear on the steps of the British Museum some time during the sixties of the last century. The Edinburgh Courant had been founded in the Whig interest by Daniel Defoe. More than a hundred years later it became a convert to the picturesque and feudal Toryism of Sir Walter Scott; under that dispensation it had as its last editor of any considerable distinction the clever littérateur who wrote two sparkling novels of the Captain Marryat school, "Eustace Conyers" and "Singleton Fontenoy." Hannay's admiration of "blood" as an historic force

was only less fervent than that of the weak-eyed young man who, at Mr. Spenlow's feast in "David Copperfield," took "Hamlet's Aunt" in to dinner; his "blood and culture" enthusiasm was the subject of many jokes. James Hannay also showed himself a spirited historian of the unphilosophic and pictorial sort in his book on the Gurney family, signally combining, as that did, honest reading and original thought with a fine literary instinct and a natural aptitude for happy expression.

Hannay's place in *belles-lettres* may be compared to that of another ex-sailor, the Frenchman best known by his pseudonym, Pierre Loti. Both men prepared themselves for the profession of authorship while they "occupied their business in the great waters." Each, under not entirely dissimilar circumstances, prematurely quitted a nautical life. The earliest writings of both are suffused with local color, drawn from their maritime experiences. In literary criticism and on literary subjects generally, Hannay made his mark, not only as a Quarterly Reviewer, but elsewhere on the periodical press; his "Satire and Satirists" brought him a request from Thackeray that he would annotate a new edition of the "English Humorists." "Written by Gentlemen for Gentlemen" was the description said to have been given by Hannay to the London newspaper to which he was attached before going as consul to Barcelona, where he died in 1873. Hannay may have gloried in the phrase, but it was not his. The words occur in the prospectus of the imaginary "Pall Mall Gazette" of "Pendennis," written by "Captain Shandon" in the Fleet Prison. Hannay received his consulship, not from the fourteenth Lord Derby, whose literary as well as racial qualities he adored, but from his son, the foreign minister whose accomplishments Hannay had himself described as belonging to the "mechanics' institute order." The boast of that statesman's father that he belonged to the pre-scientific age might have been truthfully echoed by Hannay himself. This fact contains, indeed, the sum and point of the conversational fragment quoted above. After practically grounding himself in medicine at Charing Cross Hospital, Huxley, on board the "Rattlesnake," practised as a surgeon in the same fleet in which Hannay had served as a midshipman. The two men, separated by an interval of only two years, began their London careers about the same time. Though not in equal degrees, both at the date of their British Museum conversation were among the men of the time.

The popular taste for Addison's and Steele's essays was the product of the coffee-house. The French traveler Thevenot, in the middle of the sixteenth century, brought from Constantinople, where the first establishment of the sort existed, the idea of the coffee-house to Paris. Before then, however, the institution had been firmly planted, not in London, but in provincial England. Among the undergraduates of Balliol College, Oxford, in 1641 was a certain native of Crete, by name Nathaniel Canopus, who could not stomach for breakfast the small-beer which was then the morning tippie of the place; he produced a tin of coffee given him by a Syrian friend. A college scout of the period, having brewed the beverage for his employer, tasted it himself, found it very good, and gave some to his friends in the buttery below. The fame of this most excellent substitute for the college ale reached the Master and the Fellows, who, between 1645 and 1650, discussed cups of hot and fragrant Mocha round the Balliol common-room. While Canopus was revealing the new drink to the college of Wycliffe, an Oxford townsman, a Jew named Jacobs, was opening the first coffee-house possessed by England as nearly as possible on the spot now occupied by the London and North-Western Railway station. The keeper of that place of entertainment retailed the berry in its best quality for consumption off the premises; probably he had supplied the gownsman Canopus when the stock brought by that gentleman from eastern Europe began to run short. Canopus seems later on to have entered into a sort of partnership with the coffee-selling townsman; for, during the second half of the seventeenth century, Messrs. Canopus & Jacobs were appointed purveyors of coffee to a little club of scientific Oxonians presided over by Dr. Wilkins of Wadham, and meeting twice or thrice a term in his rooms.

This coterie was known by the name of the Philosophical Society of Oxford. Amalgamating with London savants, some of whom, like Wilkins and his friend Wallis, soon afterward settled on the Isis, it formed the nucleus of the Royal Society. Both at Oxford and in London, whatever the place of meeting might be, the scientific usefulness of the gathering was extended by its investment with social attractions. Solid refreshment was not furnished, but an abundant and gratuitous supply of their non-intoxicating beverage was provided by Messrs. Canopus & Jacobs. The intellectual temper of English society seems to have been scientific rather than literary till quite late in the Georgian era. The "First Gentleman in Europe" had been trained in an atmosphere of the conventionally classical and literary kind. The wits whom he had gathered round him at Carlton House or the Brighton Pavilion resembled their royal patron in disliking any intellectual exertion which might bring into play a new set of muscles of the mind. Charles James Fox, indeed, to do him justice, possessed a good deal more than merely the clever schoolboy's familiarity with Latin and Greek. Samuel Johnson learned Dutch late in life as something to "grind his mind upon." Fox, like his royal master, would have shirked any such disciplinary use of linguistic study, and, in fact, so detested whatever involved abstract thought that he would not take the trouble to read so epoch-making a book as Adam Smith's "Wealth of Nations," or even to understand the rudiments of English finance.

Droll as it seems, the prejudices and partialities of the macaronis and fribbles of the Regency period had something to do with setting the intellectual fashion for many years after the very nicknames of these dandies were forgotten. The court under George IV., and to some extent under his successor, reflected the literary temper of the rakish Whig leaders. The fourth George himself knew almost as much about Theocritus and Virgil as his favorite statesman. An educational reformer, incredibly in advance of his time, happening to find himself at Court on the day that Dr. Keate had been sent for to Windsor Castle, hinted to his sovereign that the Eton boys might receive occasional lessons in the applied sciences. The sovereign frowned disapproval on the presumptuous suggestion; the head-master characteristically barked out in an undertone that he should have liked to flog the man who made it on the spot. Neither the king, however, nor the arch-bircher could prevent or ignore the fact that the social tide was setting in favor of science as a recognized part of English culture. After the Royal Society for Advancing Natural Knowledge (so styled in 1662 by its founder, Charles II.) had ceased to meet at Gresham College, it found its headquarters at Arundel House. A member of its host's family presented it with a valuable library. Other donations and legacies followed. It began to be a wealthy corporation. In 1710 it was domiciled in a house which it had purchased in Crane Court.

Long before the eighteenth century had come to an end polite patronage had done much toward assuring for a knowledge of nature and its laws a recognized place in the educational course. Richard Lovell Edgeworth (1744-1817), by his turn for mechanical inventions, was led into deeper inquiries as well as into an intimacy with Dr. Darwin, the great scientific pioneer of that period. Edgeworth impressed on his daughter, the more distinguished Maria, the value of natural philosophy as an instrument in training the youthful mind. Miss Edgeworth's novels and stories, without professedly fulfilling any scientific mission, are written in a scientific tone, and in innumerable passages, as much by what they suggested as by what they said, were calculated to stimulate a popular interest in physical inquiry.

A relation of the Edgeworths, honored as a west of England worthy, Thomas Lovell Beddoes, is still locally, if not nationally, remembered as an active propagator of the new learning. Dying in 1849, he must in life, to judge from his portraits, have looked like the prose original of Dr. Dulcamara on the burlesque stage. His habitual costume was nearly that worn by Toole in the part of Paul Pry. The chief interest attaching to Beddoes comes from the fact that in his "pneumatic institute" at Clifton he had for his assistant a Cornish lad fresh from a Penzance surgeon's dispensary, Humphry Davy. Coleridge and Southey, then often in the neighborhood, were the most interested and regular witnesses of his experiments. "That boy," said Coleridge, pointing to the future inventor of the safety-lamp, "will go a good deal farther than his master." Southey's observation of natural philosophy incidentally proved more useful even than Coleridge's. Southey, indeed, did not become a real power on the Quarterly Review till some years after his first acquaintance at Clifton with Beddoes and Davy. But in John Murray's Albemarle Street parlor he was in the habit of meeting the editor Gifford, as well as his chief writers. These latter affected a contemptuous indifference to physical science in all its branches. Zinc wire, gas, water, and liquid manure were said by George Canning the Minister, as by his friend and literary collaborator Hookham Frere, to be the only matters on which science could possibly help its votaries. Fresh from his Clifton experiences, Southey had the courage to differ from his editor and his associates. "This new knowledge," he said to Murray, "is steadily creating a new literary demand that must be met." The remark was soon followed by condescending references to natural inquiry in the Quarterly Review, and by the publication of popular handbooks on natural philosophy, and so forth.

The opening of the nineteenth century saw Davy's lectures at the Royal Institution animate London with an enthusiasm for the subjects on which he discoursed. Gradually the savant became a lion in society as well as a teacher in the lecture-room. First Sir Humphry Davy, then his pupil and assistant Michael Faraday, were in high request for fashionable drawing-rooms. Lady Blessington did not consider her Gore Lodge receptions complete without one of her open-air philosophers, as she used to call them. Fugitive pieces on more or less scientific themes now commenced to mingle with the literary contents of the keepsakes and albums edited by ladies of quality, like Lady Blessington herself. The exquisites of the old literary caste did not like it. Hence the words attributed to Count d'Orsay when some one spoke to him about vegetable products: "Yes, I think I once took a pea." About this time, too, certain associations of personal romance really operated as pioneers of science with the public. There has come up a second "lion out of Judah"; so said Charlotte Brontë, who had already given the heroine description to Thackeray on the first occasion of her seeing Michael Faraday. The facial resemblance between the novelist and the philosopher was remarkable. The dramatic vicissitudes of Faraday's life; the simple beauty of his character; above all, perhaps, a general impression that his chief, Sir Humphry Davy, now very prosperous, and some thought rather pompous, owed to his pupil more than he cared to acknowledge, had created a deep interest in the great electro-magnetic researcher, who had begun life as a bookbinder's boy in a back street of the West End.

When the present writer's London life began, a little more than a generation ago, the talk in literary circles