

ducted showed that ordinarily the pressure is not affected at all by alcohol. But arterial pressure, like all pressure, is a reaction between two opposing forces, the strength of the heart's action on the one hand, and the friction in the arteries on the other. Alcohol might increase one of these while correspondingly diminishing the other. In fact, this was found to be the case; for if the constrictive reaction of the arteries was paralyzed by severing their connection with the vasomotor centres, it was found that the heart dilated so much more fully under the influence of alcohol that the increase in the flow through the carotid would amount to from 50 to 75 per cent., although the frequency of the heart-beat was unaffected. The apparatus was so arranged that every five minutes there was an alternation between supplying the heart with blood mixed with alcohol and with pure blood, while the blood that passed through the carotid in each five-minute half-period was collected. The result was invariably as stated. It follows, therefore, that alcohol has a double effect on the circulation, at once stimulating the heart and paralyzing the vasomotor centres. But if this be the case, the flow of blood must be greatly increased, and consequently there should be a dilatation of the smaller vessels which would be shown by that instrument which detects changes in the volume of a limb. Dr. Wood's communication was set forth in so interesting a way, and his delivery was so admirable, that the audience was vivaciously responsive.

Professor Brooks, of the Johns Hopkins University, explained how he had discovered that the principal axis of symmetry of the mature oyster is already marked in the ovarian egg—in the egg before it is yet an egg, and while it is still attached. In that stage of development it has a kind of stem, in reference to which the nucleus of segmentation is symmetrically situated. It also has a shell at that time, but as soon as it is expelled the sea water enters the shell, and the egg slips out; whereupon, in ninety-nine cases out of a hundred, the egg assumes a spherical form, so that the axis which its stem had marked now appears to be obliterated. However, in one egg out of every hundred a sort of neck remains, which is identifiable, by its peculiar shape and by the situation of the nucleus, with what was at first the stem. The segmentary spindle and all the segmentations are placed symmetrically to the axis of this neck, and the identity of the axis can be traced throughout the animal's life. It is perhaps the only case in which a principal feature of a mature, individual, and unattached animal is so indubitably determinate from the very first.

Mr. Agassiz, the President of the Academy, gave a fascinatingly interesting account of his last *Albatross* expedition. It was intended to explore a part of the Pacific Ocean that had been quite unknown. We will not undertake to state all the lines run over, but the following will show some of the principal passages, though not always in chronological order: From Panama to the Gallapagos (on the equator due south of New Orleans); thence to Callao (12 degrees south); thence to Easter Island, and to Manga Rava Islands (on the tropic of Capricorn westward of Pitcairn, due south of Sitka); back to Acapulco (south by west of the city of Mexico). In this quadrilateral,

particularly in its southern part, was found a large district of the ocean characterized by a bottom of manganese nodules, with scarcely anything else. Each haul would fetch up two or three bushels of what looked like potatoes, running up to the size of cannon balls. Such a bottom is found nowhere else, although manganese nodules have been brought up sporadically. Elsewhere the bottom is covered with an ooze largely of decaying animal matter, affording plenty of food, but in this district there is very little food. It is a sea-bottom desert. It lies upon a plateau some 2,000 fathoms deep, between which and the coast is a series of deeps where the soundings were most irregular, some of them reaching 4,000 fathoms. It is curious that the explorers took with them a chart from Kiel, where they found laid down, on the evidence of a few soundings, the "Albatross Plateau," a sort of clairvoyance of what was to be. Mr. Agassiz called it a guess. Over this plateau there are no currents. No food is drifted there, and consequently there is no animal life at the surface. There being no life at the surface, no food can drop to the bottom; and that explains its being a desert. In the Humboldt Current, animal life reaches a depth of 300 fathoms. Where there were currents, plenty of food and animal life was everywhere found. The amount of animal life on the surface of the Humboldt Current is immense, but it diminishes very rapidly as the depth increases, because the temperature falls very rapidly. It would be 72 degrees Fahrenheit at the surface, 52 degrees at 30 fathoms, and at 100 fathoms not much above 40 degrees. Many of the so-called deep-sea animals really do not live below 150 fathoms; but they are brought up in the hauls, and, being much damaged, are supposed to have come from great depths. Mr. Agassiz remarked that this relation between the distribution of animals and the currents throws a certain light upon former geological conditions. It was the eastward currents that stocked and peopled the islands of the Pacific; and there were greater currents in geological ages.

Easter Island was visited, and it was most satisfactory to have an account of that enigmatical place from such an observer. The whole periphery of the island is land-walled 12 to 15 feet high, with numerous platforms for the gigantic images. In the entire absence of wood, these were roughly cut from stone with obsidian tools. The stone must have been soft when first taken from the quarry. They are idols with enormous heads and small bodies, not apparently intended to imitate humanity, and infinitely below the work found in Central America. Hieroglyphics abound which the natives can still read. Originally there must have been a population of four or five thousand inhabitants; at present the natives number fifty or sixty. Every indication is that the work ceased most suddenly, as if in consequence of some unexpected physical or psychical catastrophe. The audience was charmed with the lecture. It recalled Louis Agassiz to those who had heard that famous naturalist and lecturer.

On Wednesday the Academy visited the new Bureau of Standards with the Washington Academy of Sciences. It is as yet impossible to form any critical opinion of this institution; but it has certainly been planned upon a generous scale, with the

intention of covering every kind of standardization that there is any important wish in the country to have the Government undertake. The appearance of everything—buildings, instruments, and men—is highly creditable; and there are enough accomplished physicists in the country to make its work an object of national pride.

On Wednesday evening the Academy dined with Mr. Agassiz at the New Willard.

DR. EVANS'S SIXTH YEAR'S CRETAN CAMPAIGN.

Knossos, March 29, 1905.

Had I not already made similar prophecies, I should say, after this week spent in the Museum at Heracleion and on the site of the House of the Double Axe at Knossos, that discoveries are likely to end with the present year's work. But an incident of two days ago gives me pause. While our party was paying its last visit to the excavations, the foreman brought the curved segment of a vase-handle, instantly identified by Dr. Evans as belonging to one of the familiar Knossian funnel-shaped vases made of micaceous schist. The Italians have found the like at and near Phæstos. This handle was decorated with alternating nautilus and sprays wrought in an extremely clear-cut fashion, suggesting the best palace-style of vase painting. But the newly found fragment came fresh from a trial pit just experimentally sunk at a considerable distance west of the palace. Indeed, it lay on the upward slope of the long hill running parallel to that on which the Knossian palace stands. If followed by others, this small find must indicate the presence of important remains upon that hill. The trial pit was sunk in the line of the deep-level Mycenaean causeway discovered last year below a Roman road built along the same line about 2,000 years afterwards. These two roads run, one under the other, from the theatre building 100 yards northwest of the palace due westward. The problem in hand is to remove the upper Roman road and lay bare the lower Mycenaean one. This will probably have been done by April 14, when a visit is expected from members of the forthcoming Archæological Congress at Athens.

Incidentally there is also in progress the excavation of certain magazines lying deep down and by the side of this Mycenaean causeway. Whether there are older magazines beneath the ones now in hand remains to be seen. Fewer magazines belonging to the oldest Knossian palace have come to light so far than might have been hoped. The Italians at Phæstos have found several such, and it is equally clear on both sides that at least two distinct epochs are distinguishable in buildings and in pottery and the like. Of course, the older and the later palace both antedate 1500 B. C.; and remains both earlier and later than either have been forthcoming, not only from Knossos, Phæstos, and Hagia Triada, but also notably from Gournia, where our countrywoman, Miss Harriet Boyd, has found so much of vital importance for the history of earlier Cretan handicraftsmanship and for the understanding of the mysterious worship of the Cretan snake goddess.

As the years pass by since Dr. Evans's final campaign at Knossos, it becomes more

and more evident that his vast accumulation of ceramic specimens from various strata in the palace will yield us the means of sketching in outline the history of the potter's craft during the vast period stretching from neolithic times to the dawn of Greek history. The earliest stages have been well studied elsewhere, but only in the collections at Knossos can these stages be linked on by specimens of most gradual transition to the "Mycenæan" period as described by Furtwängler and Loschke. Professor Petrie at Abydos has followed primitive Mediterranean pottery backward into neolithic times, and similar evidence for Knossos lies still in undisturbed neolithic strata below the palace of Minos. But the evolution of artistic pottery between the stone age and the earliest days of Greece is best understood through the Knossian specimens. These prepare the careful observer for the dates supplied partly by Professor Petrie and partly by Dr. Evans, connecting the slow progress of Knossian ceramics with the course of Egyptian history. Dr. Petrie has identified the very earliest Minoan pottery with specimens found at Egyptian Abydos. Dr. Evans has found a similar link, for somewhat more advanced Minoan work, through the affinities of certain Cretan seals of the Sixth Egyptian dynasty. The three styles of Middle Minoan pottery, sometimes called the polychrome styles, have their contact with Egypt in the case of the second polychrome style of Knossos, specimens of which were in much demand for importation into Egypt. Professor Petrie found abundant evidences of this at Gurob. Two Egyptian works, imported when they were new into the Knossian palace, give Mr. Evans further interlacings with Egyptian chronology for his account of the later stratification of pottery on the Knossian site. But we hardly need Egyptian dates to enlighten us. The mere consideration that there is a whole history of art running its course, with periods of revival, perfection, and decay, thrice recurring, in the three Minoan periods, each falling into three successive styles, shows that more than two thousand years are required. Dr. Evans and his assistants have achieved nothing of more permanent and universal value for all students than this classification. Indeed, it must soon be recognized that students of Mediterranean and European anthropology can hardly dispense with the study in Crete of Cretan ceramics; and Egyptologists in particular must spend some energy in mastering the details of Dr. Evans's classification.

Meanwhile the rainiest of rainy seasons threatens the grand staircase leading up from the Hall of the Colonnades to a third story on a level with the pavement of the central court, and at its southeastern angle. Here, as readers of previous Knossian letters in the *Nation* may remember, a stairway, broken by a square landing midway, ascends to an upper story the main features of which have been preserved, including a long corridor at that level. Also, a stone with marks of a similar staircase ascending to a topmost story has been preserved and shored up approximately in its original place. Thus clear proofs of three stories are visible. But everything above the ground level has been kept in place only approximately, and there has always been danger of a fatal collapse. This actu-

ally began not very long ago—fortunately, where the damage can be repaired. The flagstones of the upper corridor have in one place collapsed, carrying with them the lowest step of the staircase leading to the topmost story. The ugly hole thus produced was prevented from growing wider and involving more damage only by the insertion of solid columnar props effected an hour or two before our party arrived. Now, it is a relief to say that a competent architect, summoned by telegraph from the British School at Athens, is directing a thorough system of repairs, and there is hope that this danger may be fully provided against before the impending visit of members of the Archæological Congress. The expense, however, will be great, and, considering that only £700 of the £2,000 required has so far been subscribed, the adequate prosecution of this year's work is in serious jeopardy.

As the visitor from Heracleion approaches Knossos, the first view of it is a very great surprise. It appears to be in a valley, because the not inconsiderable intervening depression escapes the eye, and because much higher hills flank it on the west and on the east, while on the south rises a still higher hill, the one where the tombs of Mycæan date, excavated last year, were found. He who would forget how inconspicuous was Knossos, if approached from the north and the sea, should press on along the fine road which has been pushed southward beyond Knossos and along the valley of the Kairatos, for which the town and palace of Minos were originally named. Viewed from the south, as every one approaching it from the south and the interior inevitably viewed it, Knossos occupies an impregnable position. It commanded the passage from the interior most effectually, and seems from this side to be the natural home of those who should rule the land. In agreement with the requirements of its strategical position, such fortification as Knossos certainly had was at its northern end, toward the sea. But the remains of fortification are by no means extensive, and it certainly appears that Knossos must have trusted for defence in the days of its greatest power not to strong walls, but to command of the sea. In the earliest days, when Knossos first emerged from the condition of a neolithic settlement, its safety from pirates may have been due partly to its distance from the sea (four miles) and partly to its inconspicuous position when approached from the coast.

LOUIS DYER.

FOUCQUET AND FRENCH LETTERS.

PARIS, April 6, 1905.

The Superintendent Foucquet achieved the reputation of a great patron of letters. He counted among his friends Lafontaine, the immortal fabulist; Madame de Sévigné; Mlle. de Scudéry; Pellisson. They all remained faithful to him at the time of his misfortunes, when he incurred the ill-will of Louis XIV. Sainte-Beuve, in his "Causeries du Lundi," which are an inexhaustible source of information, twice analyzed the character of Foucquet, and tried to imagine what would have become of French letters if the Superintendent had remained longer in power.

M. Chatelain has just published a huge

octavo volume on 'Nicolas Foucquet, Patron of Letters, Arts, and Sciences,' the result of protracted labor.

"I have long interested myself," he says, "in N. Foucquet and his courtiers. I lived several years among them, and if I did not succeed in liking them, I at least tried to understand them. Every human soul is an enigma, and if the well-marked personality of a man of genius seems sometimes to facilitate the solution of the problem, I did not find this precious help in the present study. But this only made the problem even more captivating in my eyes. The psychology of this singular man; his historical and considerable part in the evolution of letters, science, and art, as well as in the evolution of monarchy; the extraordinary exactitude with which it reflects the spirit and the fashion of his time and the average intelligence of his contemporaries—all excited me to make greater efforts to understand him."

Nicolas Foucquet belonged to the high parliamentary bourgeoisie which bordered on nobility and often mixed with it by buying estates and titles. He pursued his studies at the Collège de Clermont, in Paris, kept by Jesuits. He left college at the age of sixteen, and was presented to Richelieu, who, pleased by his good looks and his intelligence, pledged him not to take orders, but to follow, like his father, a parliamentary life. He at once gave him a commission to make an inventory of the titles of the chancery of Vic, which brought him in relations with a learned German, John Freinshelm. "Foucquet saw all the members of the Parlement fond of rare and precious books, searching for them and glorifying themselves with them. If the president and the councillors of the various chambers set the example, the mere lawyers who had fine libraries were legion." The books of Talon, De Thou, De Mesmes are well known to all bibliophiles, and so are those of Foucquet, with the curious emblems which appear on his bindings, and which were added at the time of his prosperity.

At the age of twenty-one Foucquet was *maître des requêtes*. He remained in Paris till 1642, when he was appointed *Intendant* of the Army of the North. He was, during the years of his début in Paris, a frequenter of the salons of two great ladies, Madame du Plessis Bellière and Madame du Plessis Guenegaud. The latter lady was a Jansenist, and it was in her house that were read for the first time some of Pascal's "Provincial Letters." Foucquet was thrown also in the world of the *Précieuses* he became a lady's poet and wrote sonnets he became attached to Mlle. de Scudéry, and to Pellisson. Nobody nowadays reads the 'Clélie' of Mlle. de Scudéry, but all the important people of the time found a place in this extraordinary work, under false names. The book was devoured by every body. Foucquet appears in it as the modern Mæcenas. Mlle. de Scudéry and Pellisson were inseparable; she was Sappho and he was Herminius. Foucquet had a deep admiration for Pellisson, who was a great scholar, a poet, and a philosopher.

Foucquet was at the same time a business man, and his friends were afraid he would become too much absorbed by his financial duties. Pellisson expressed this fear in verse, while Foucquet was at his splendid country house at Vaux.

"Dans un séjour si beau
Ne ferait-il rien de nouveau,
Et n'aurait-il point de fauveite
Dont il fût un jour l'interprète?"