

COLOSSAL MARBLE STATUE OF AUGUSTUS.

Head restored.

PLATE 30.

illustrated an agonistic victory on this spot. The frequency or sporadic nature of their occurrence may also determine their own nature and destination. So, for instance, it was the frequency of the appearance of bronze and iron spits, pins and rings, at the Argive Heraeum which led me at an early stage of the excavations to surmise that these objects may have served as money (no actual coins having been found in these deposits), and would thus throw some light on the tradition that Pheidon of Argos had on this very site deposited the ὀβελίσκοι (spits) when coinage was introduced by him—which view has since been accepted and developed by the special numismatic authorities.¹ It will always be of unique importance to the archaeologist to see antiquities as they are buried in the ground, and no amount of work in the study, far removed from classical lands, will make up for the absence of this experience.

Concerning all these circumstances of discovery careful and complete records must be made on the spot and during the process of excavation, and these records must ever be available during the subsequent and important process of cleaning, sorting, and piecing together what has been found. At every stage, moreover, and with every object found, its relation to, and bearing upon, the site as a whole must be borne in mind. The topography, nature, and destination of the site will be essentially modified in the mind of the student as he allows the actual light of individual finds—the “black layers,” “pockets,” and other groupings of objects in the earth, their individual nature, distribution, and numerical frequency—to add their testimony to the other evidence at his disposal. The nature of such “black layers” or “pockets,” showing that meat and bones have been thrown in with the objects, may, under certain conditions, point to the proximity of an altar or a grave. Agonistic prize-vases may add their evidence to the identification of an agonistic centre. Sepulchral vases naturally point

¹ See Svoronos in the *Journal Internat. d'Archéologie Numismatique*, ix., 1906, pp. 192 seq.

to graves. Votive offerings of definite character may help us to identify a certain sanctuary; the numerical proportion, again, of such finds among each other may show, *e.g.*, whether a large number of cooking utensils point to domestic dwellings, which an isolated case would not do, etc., etc.

Yet how far have these conditions, which are essential to a proper excavation, been fulfilled in the excavations with which I have been acquainted? To avoid the spirit of unfair criticism of my colleagues—some of whose work, in spite of all the deficiencies of their equipment, has been most productive of important and brilliant results—I shall, as far as possible, confine myself, in pointing out the shortcomings of our actual methods, to my own work; though, in fairness to myself, I must add that it was under the circumstances not inferior in method to that of other excavators.

The first and foremost difficulty to be met is the absolute inadequacy of means for the undertaking of such work. This applies to almost every excavation with which I am acquainted. We should hardly think of undertaking the building of a road, still less the construction of a railway, with such rudimentary preparations and equipment. And we must remember that, besides the difficult tasks similar to those of a great engineering enterprise, an archaeological excavation is followed by the additional duty of preserving, describing, and identifying the priceless objects which the spade of the excavator has brought to light.

The excavator, in most cases, when he begins his task, has had no training in the actual work of digging the earth. He is not acquainted with the use of the proper tools—which are rarely provided in an archaeological excavation: with the engineer's experience how to attack the problem of an unsurveyed site: with the ordinary experience of a foreman in directing the work of a gang of men. The difficult position in which one thus inexperienced is placed, when he has to organise and to distribute large gangs of workmen, themselves

sorely in need of instruction in digging and in the very use of the implements of their craft ; when, after five or six gangs of men are properly set to work, he is suddenly appealed to by one gang on completion of their task with the question, how they are now to be shifted to another quarter ?—all this confusion can well be imagined when there is no engineer or proper master of the works provided, and when the funds will hardly admit of the employment of such skilled assistants. The site once defined, an important problem is to fix upon the best spot for dumping the waste earth. The greatest mistakes can here be made. I would but remind the reader of how Schliemann (and later his successor, Dr. Doerpfeld) had to cut through the previous dumpings covering the remains which he had in later stages to excavate at Hissarlik, and the confusion—often the complete obliteration—of archaeological landmarks which was thereby caused. Instances of such difficulties, arising out of a false step in choosing the dumping ground, abound. But the main reason for the occurrence of such primary mistakes is to be found in the fact that, from the very outset, the funds available do not admit of a proper laying out of the work on a scale commensurate with its importance, and that those providing for the work are not filled with the conviction that no money is misspent which can in any way reasonably be expected to make the work more methodical and complete. To convey the refuse earth any considerable distance from the site would be far too expensive with the limited sums at the disposal of the excavator, who can only hope to pay the expenses of the actual digging and finding, and dare not even consider the following stages of preservation, transport, and elaboration. The methods employed in conveying the earth have been, and generally are, the rudimentary transport by means of baskets, each carried to and fro by a workman. Naturally it becomes a matter of vital importance that these should not be carried far. The wheel-barrow is not always available. In my excavations at the Heraeum

we had from twenty to forty carts with horses. I believe Schliemann was the first to use the small Décauville railways. But in large excavations many innovations and improvements might here be introduced.

Has any one of these excavations, in which it may reasonably be expected that stones and other objects of great size and weight will have to be lifted and transported, been supplied with a crane, or even with an ordinary pulley? Look at the masses to be handled in the excavation of the Temple of Zeus at Olympia, and remember that this was one of the excavations most liberally supplied with ample means by the German Government. Sir Charles Newton was in an exceptionally favourable position; for he had with him the handy crew of the British man-of-war, with their appliances, directed by competent officers, when he carried on his excavations at Cnidus, Halicarnassus, and Branchidae, and transported the treasures there found. I remember how, when in 1891 we excavated at Eretria, having no means to raise them, we had to break up successively the large blocks of sandstone superimposed one above the other, before we came upon the sarcophagus itself, which, I still venture to think, is, with a high degree of probability, the tomb of Aristotle.

I repeat, that, for a great excavation—especially one like Herculaneum—we may expect the expenditure of as much labour, time, and money as are devoted, let us say, to the boring of a great tunnel. The preliminary care and study, the provision of all improved machinery and appliances for working the ground, should certainly be as liberal and as advanced as in a great engineering enterprise. Unless the “handiwork” stage has been reached, when in a given house or in a “pocket” the most careful digging with the use of the penknife of one expert is called for, human ingenuity is to be summoned to devise means of mechanically dealing with large masses of earth, not only thus economising and accelerating labour, but insuring greater accuracy in the production of results. If lava be met



TWO MARBLE RELIEFS. BACCHANALIAN PROCESSION AND SEATED DIONYSOS.

Head of Dionysos restored.

PLATE 31.

with in the upper layers, the newest machinery should be devised for cutting and removing it.

But, above all, while the work is carried on, there should be an adequate staff of experts to supervise and direct and to determine important points at once and on the spot; for these cannot be as profitably dealt with in the later stages when the works are removed far from the site in which they were discovered. Besides the archaeologists and engineers, the architect, the geologist, and chemist ought all to be on the spot to determine the questions within their special province as they necessarily arise in the course of the actual digging. How often, while excavating the Argive Heraeum, was their help indispensable, when the analysis of the various earths, of a small quantity of colouring matter (which might have thrown light on the nature of the paints used by the ancients), was required! The important question of the preservation of volatile and delicately changing substances arose. Such timely assistance might have saved much that was destroyed or damaged, and been of general help in many other departments of excavation.

Undermanned as we were, most of our excellent and enthusiastic helpers being untrained to such work—in fact, often students who had not yet completed their preparatory studies in archaeology,—how could the records be properly kept, when our limited means did not provide us with proper repositories for the finds or with the arrangements for their classification? The notebooks of my assistants were diligently kept according to their lights; every basket full of materials found at a given spot was marked with a paper enclosed to identify the spot and the date of its find. They remained during the season beside our tents, the rain softening the adhering earth as it penetrated the baskets. At the end of the season, in carts and on mule-back, the more brittle objects packed as carefully as possible in boxes and oil-tins, our finds were carried for several miles to Argos, and there deposited in

the small local Museum—a few of the most portable objects being at once transferred to Athens. At the end of the fourth season all that was deemed important and could thus be transferred was taken on railway trucks to Athens. Our means of transportation were quite inadequate, and no proper help was forthcoming from other quarters.

Once transferred to the Central Museum, the baskets and boxes were deposited in a room which happened to be empty. Here the unpacking began, and those assistants who had taken part in the excavation—the distribution of work having been planned and organised—were charged with the difficult task of sorting and cleaning, great stress being laid upon the fact that the records indicating the exact spot whence the objects came should be preserved. This work was then carried on spasmodically during some years, during which time all the objects had to be removed from one room to another—as the space was required by the Museum authorities. Further, the assistants at first engaged on the work were called away by their appointments, studies, or careers in the United States; others had to take their place in the excavations and be trained anew, sometimes leaving before the task was completed; and the delicate and confusing work on the finds at the Museum often passed from hand to hand. It was even impossible to secure the services of some who had taken part in the excavations for the work of final publication. I myself, the hapless director of the whole excavation and responsible editor of the results, resided in England, and could only pay occasional visits to Greece, there to maintain some system and order in the arrangement and publication of the material. Moreover, the book was printed in America, under the guidance of an “Editorial Committee of the Institute,” with whom, while I resided in England, at a distance of several thousand miles, complicated questions of ways and means of publication (to be finally ratified by the vote of a large and heterogeneous general committee), of illustration, editing, printing, etc., had to be



WALL-PAINTING. TOILET SCENE.
Severer style.

PLATE 32.

agreed upon and settled. The assistants, to whom I had justly assigned the publication of the several chapters over their name, were scattered over Europe and America, and all criticism, suggestions, advice, and injunction had to be conveyed to them by me through correspondence. The misunderstandings and delays spread over years, and the final official publication at last appeared, when later discoveries had caused the objects and the views originally expressed in many cases to be antiquated and superseded.

How can justice be done, under such conditions, to the priceless treasure which the spade of the excavator reveals to the world? How can accuracy and thoroughness in the excavating work and in the elaboration of its result be thus ensured? No doubt there have been many excavations more amply provided with means, with a more adequate staff of expert assistants, with material aids to excavation, and with far more favourable arrangements for cleaning, sorting, restoring, and publishing the results attained. But there have been many in Italy as well as in Hellenic countries where matters were in every stage worse. Even in the brilliant German excavations of Olympia, generously endowed by the Government, it took about twenty years to present the excellent final publication to the expectant world. The results of the excavations on the Acropolis of Athens, the objects there found at the end of the eighties of the last century (the work of studying and arranging them also passing through several hands), have not yet been all given to the world. I could even adduce more striking cases than these from all parts of the world, including Italy.

I therefore repeat that our methods of excavation now in use, the equipment and preparation with which we undertake huge tasks of this nature, the actual methods of digging, of finding, arranging, and elaborating the treasures, the numbers, constitution, and regular functions of the staff,—all require complete revision and reform. No better opportunity of effecting such salutary changes can be found than when such

a huge enterprise as the complete excavation of Herculaneum presents itself. This would furnish the supreme type of the most improved methods and procedure in such important scientific enterprise. And, should the work be undertaken there and carried to a successful conclusion—which can only be done by means of these improved conditions,—it will be not the smallest of the important results that the whole practice of excavating will thus be raised to a standard adequate to the importance of the scientific results to be attained.

It is in the light of these experiences that we now desire to sketch out in its essential features the plan of such an international excavation of Herculaneum. The task will be considered from three points of view : (1) before the actual excavation ; (2) during the excavation ; and (3) after the objects have been found.

CHAPTER II

BEFORE EXCAVATION

INSTEAD of laying down dogmatically our plan for a future excavation of Herculaneum in a form which might readily assume a magisterial and presumptuous tone, in prescribing what ought to be followed by those entrusted with the work, we think that it will be more advisable to put what we have to say in the form of a supposition that the enterprise has actually been decided upon as an international excavation, and that we are following in imagination the various phases of the work.

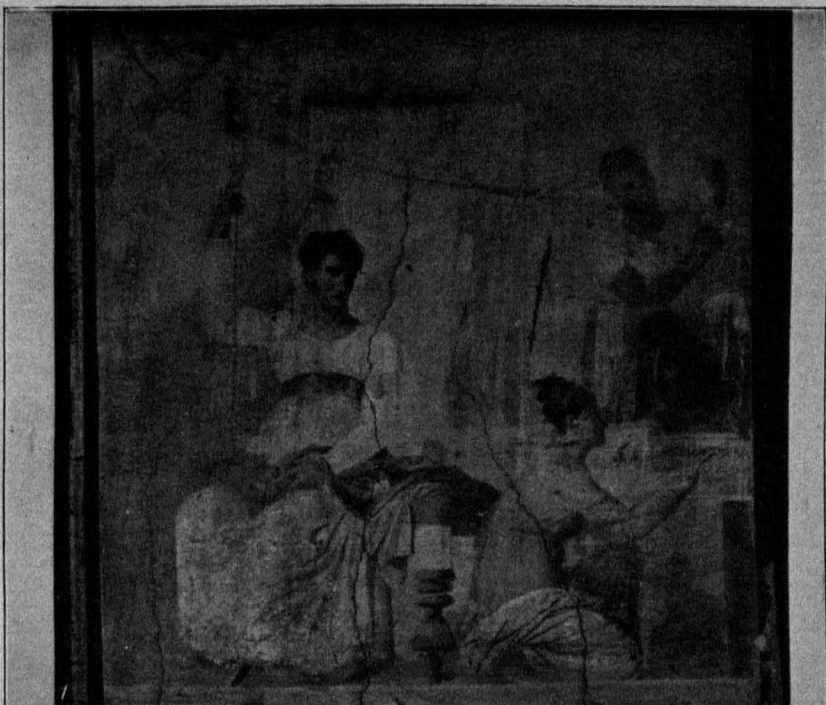
We thus hope to avoid the constant repetition of the "injunctive" forms, "ought, should or would," which would make our exposition tedious and pedantic ; while, at the same time, the fictitious character we adopt will free us from the charge of arrogantly prescribing the lines which in this great work are absolutely to be followed.

Yet, while adopting this lighter form of an imagined realisation of our plan, we would urgently beg the reader not to consider what we are here writing as merely imaginary or even fantastic. It is not a playful excursion into dreamland. On the contrary, the postulates are all within the sphere of sober and practical realisability. We choose the hypothesis that our general plan has been adopted and is being carried out, because we can thus show how in detail and definitely the various problems are to be dealt with. We wish to recognise the difficulties incidental to the execution of such a

complicated and arduous task, and we wish practically to make the test of our calculations, assuming that the work is actually proceeding, and the numerous dangers to its realisation—which at once occur to the practical and conscientious mind—have in every case to be faced and overcome. The most useful critic of any new project or plan is he who begins his strictures with: “But how would you,” or “how could you deal with this and that unfavourable contingency?” It is especially such a critic whom we wish to meet and to satisfy.

The national committees have done their work and have done it well. Large sums have been transmitted to the Treasurer of the International Committee at Rome. His accounts are regularly audited and are submitted in a report to the International Committee, by whom they are published annually. There is now the first important meeting of this International Committee, which, on this occasion, is honoured by the presence of H.M. the King of Italy, who consents to take the chair.

The first important business on the Agenda paper is the final organisation of the International Staff, which has been officially appointed by the King, who has consulted with the Minister of Public Instruction and with the Secretary of the International Committee. The latter has been in constant communication with the different national committees and learned bodies abroad. The Secretary reports that a few decisions still remain pending; for the invitation to the distinguished German archaeologist X. has not been finally accepted, as it was not yet decided whether he could relinquish the important work on which he was engaged in Asia Minor. He also reported that, on the urgent recommendation of the Italian Civil Engineer (who had carried the Mont Blanc tunnel to such a successful issue), he had conferred with the American Committee, as to whether the services of the American Mining Engineer R. (well known for his improve-



TWO WALL-PAINTINGS.
 ? Preparations of Actors and Musical Concert.

ments in the new mode of using gentle hydraulic washing for removing large masses of earth in mines) were available.

So far the staff consisted of fifteen Italian and fifteen foreign members.

A discussion arose, whether the number of foreign members of the staff should be equally balanced, and if so, on what principle? It was pointed out that, in the interest of the work—which was, after all, the matter all had most at heart—such a formalistic principle might be disadvantageous; that certain individuals might be required for the work irrespective of their nationalities, and that thus some one nation, perhaps not one of the great Powers, might be able to furnish more men actually required than another State. It was decided—all the foreign representatives, excepting one, agreeing—that no absolute regard ought to be paid, either to the size of the contributory State or of the contribution made by it to the fund, in selecting members on the staff; though some consideration ought to be given to such qualification.

All this referred to the full members of the staff. It was furthermore reported by the Secretary that he had been informed by several of the national committees, that they had made provision to pay stipends, and studentships to their own members on the staff and to the students sent out by them. These stipends differed among each other. The question then arose, whether all such stipends ought to be paid out of the international fund or not; and whether it was desirable that there should be uniformity among the stipends of the staff. The matter was referred to a Committee for the drafting of a report to be sent to all the national committees, mentioning the proposal of those committees who offered to pay the stipends themselves, asking for their several opinions, while suggesting the desirability of a certain uniformity in the scale of payment.

It was also reported that sixty younger foreign students had been announced by the national committees as ready to

take part in the excavations. After some discussion it was decided that these should be divided into two categories: (1) Associates; (2) Probationers. The Associates should be considered as members of the staff and should be under the common control of the staff. They should not, however, be eligible as members of the several committees of organisation and administration, nor as directors of departments. The Probationers should not form part of the staff; and, while being present at the work in which they could be employed, they would be under the immediate direction of the members of the staff of their own nationality, who would be responsible for their good conduct. They might, however, in due course be proposed as Associates.

The Committee was furthermore informed that a considerable number of these foreign members had already arrived at Naples, and that the question of their housing and support had become urgent. The Sindaco of Resina had already informed the Secretary that a certain number of the better houses in the town had prepared apartments and rooms which might be found convenient lodgings for members of the staff. He enclosed a list of such available houses. But prominent members of the staff had suggested that it was desirable that meals—at least the midday meal—should be taken in the immediate vicinity of the works, and that there ought also to be some place where the whole staff could meet and confer. The Secretary reported that a wealthy citizen of Naples had offered a sum to provide for such a meeting-place. It was decided that temporary buildings or sheds should be erected on the site for a common dining-hall and meeting-room (to serve also as a reading and writing room, with foreign newspapers) for the use of the staff, and that arrangements be made that midday and evening meals be supplied at cost price.

It was also pointed out that, in preliminary consultations with members of the staff, it was found urgently desirable that certain temporary buildings be erected, viz. (1) a large



WALL-PAINTING. MEDEA

PLATE 34.

shed for the storing of the objects unearthed, immediately upon finding them, grouped and kept together for the time being in strict accordance with the district, layer, or spot where they were found ; (2) large sheds where the various objects—statues, inscriptions, vases, etc., etc.—when released from Shed I. should be stored ; (3) large cleaning and sorting shed ; (4) chemical laboratory ; (5) photographic studio, drawing and designing room ; (6) engine-house and machine-sheds ; (7) power-house. A large house in Resina was available which could serve as the central offices, where records could be kept and all clerical and administrative work carried out. The necessary appropriations were made to meet these demands, the Secretary, Treasurer, and Minister of Public Instruction to form a Committee together with five members of the staff to see that this preliminary work was done.

The discussion concerning the organisation of the staff required so much time and thought that it had to be deferred to another meeting. At the subsequent meeting this organisation was decided upon in its main lines. From the very outset it was agreed that the members of the staff, including the Associates and Probationers, should in no wise be grouped according to nationalities, but according to the natural needs and exigencies of the work itself. It was even thought desirable as a principle that the nationalities should as far as possible be mixed and blended.

Though the International Committee considered itself responsible for the general constitution governing the action of the staff, and would always be ready to act as a court of final appeal on all questions referred to it by the staff or in all matters of difference on which the executive authorities could not agree, it was felt that the greatest latitude and power of self-government should be given to the staff carrying on the work, and in no sense should an initiative or interference on the part of the International Committee concerning the actual work of excavation be admitted.

This body, consisting of the full members of the staff, should form the chief authority on all matters of administration and all that concerned the actual prosecution of the work. The only appeal from its decision rested with the International Committee, such an appeal being granted if at least four members of the staff sued for it in writing.

The staff was presided over by the Chief, an Italian appointed by the King on the recommendation of the Minister of Public Instruction. There were also to be three Vice-Chiefs to take his place in case he was forced to absent himself from the excavations. The Chief was the administrative head, and was to have authority and responsibility during the work in all cases where immediate action was called for, and where there was no time to refer matters to the several special committees or to the staff as a whole.

Though thus the staff as a whole was the chief power on the spot, for the practical working of the several departments there were to be sub-committees, each electing its own chairman. These several committees immediately concerned with the distinct departments, their chairman being the acting head of the department, were to be the following: (1) Committee on Engineering; (2) on Geology; (3) of the Chemical Laboratories; (4) on Architecture and Drawing; (5) on Sculpture; (6) on Painting; (7) on Inscriptions; (8) on Ceramics; (9) on Numismatics; (10) on the Minor Arts—terra-cottas, gems, etc., etc.; (11) Committee on Discipline; (12) the *Domus* Committee—housing, food, domestic and social arrangements; (13) Committee on the keeping of Records; and (14) Committee on Publications. Each of these committees should have the power of co-opting members from among the Associates. In the case of the Committee on Discipline there would still be the power of appeal to the whole body of the staff, and finally to the International Committee at Rome.

It was agreed that the language to be used at the meetings



WALL-PAINTING.

? Muse or Sappho.

PLATE 35.

should be Italian ; but that those unable to express themselves adequately should be allowed to use their own language, means of conveying their opinions to the meeting being provided.

The first meetings of the International Staff were concerned in forming the sub-committees and in defining the various departments of work, and then proceeded fully to discuss, and to decide upon, the general plan of work to be followed. Previous to these meetings the engineers and geologists had for some time been actively engaged in making a more thorough survey of the whole region adjoining the ancient site, small tentative borings were made to discover the exact distribution of the lava in the eruption of 1631, and the different configuration of the soil was determined at various points below Resina and in the immediate neighbourhood.

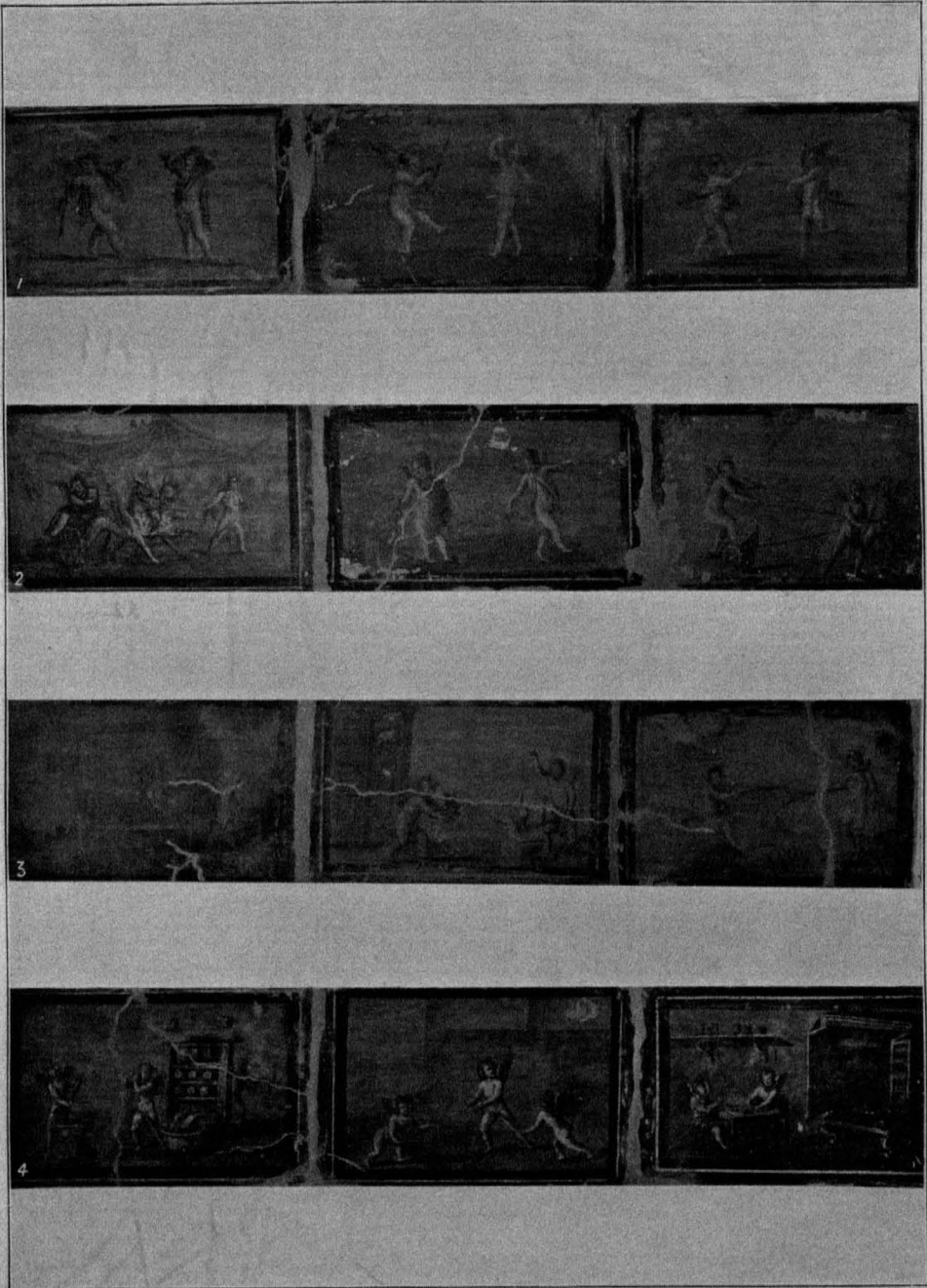
The first important question of a more general nature was discussed at great length and with thoroughness, namely, How far the excavations were to proceed from above, leaving the exposed remains open to the air ; or by means of tunnelling from below, leaving the surface and the houses of Resina undisturbed ? It was agreed that, in the lower portions towards the sea, where the depth of soil was not so great, the excavations were to proceed from above. This was especially the case to the north-west and south-east of the "Scavi Nuovi,"¹ where, moreover, there were no houses—the Royal Gardens of Portici are on the one side, and open fields on the other.

But towards Resina to the north, following the line of the streets, it was agreed that methods of tunnelling should be adopted. A lively discussion of a technical nature ensued between the engineers—the opinion of the geologists being called in as to the nature of the covering-soil at various points—as to how great a span could be left in any given case, between the solid mass of earth left standing in the middle

¹ See maps, Plates 10 and 11.

of the streets and the point where the houses cleared were supposed to end; also by what means these broad arched tunnels could be walled and concreted; how far steel pillars and girders could be used at various points without interfering too much with the appearance of the portions laid bare. Of course a complete system of electric lighting was to be employed from the beginning, and permanently installed in the portions excavated.

At this point the engineers and geologists appealed to their colleagues representing the artistic aspect of the enterprise, as to how far such subterranean exposition of the remains, with, perhaps, a forest of iron pillars, girders, and trestle-work, might not seriously impair the artistic effect. It was strongly maintained by a member of the staff, who especially represented the artistic aspect, that elements introduced into ancient structures and works of art which frankly, on the face of them, impressed upon the eye their true nature as preservative supports, in no way interfered with the effect which an ancient structure was to produce. On the contrary, from the very outset it impressed the antiquity of the work upon the spectator, and was far preferable to all forms of restoration which remodelled and modernised an ancient structure, or hid or covered the support necessitated by age and the ravages of time. It was like the repair or a *puntello* on ancient sculpture, which interfered far less with the essence of a work of art, than a complete restoration in which missing parts (noses, hands, etc.) were supplied and counterfeited as antique. To take a definite instance, he maintained, that in the Praxitelean Hermes at Olympia, the iron bar below the knees to the foot, formerly to be seen, was now replaced by a smooth new restoration of the leg (evidently borrowed from the Apollo Belvedere) which was quite out of keeping with the statue itself and disturbed its proportion and artistic effect. The presence of such pillars and girders in the Herculanean tunnels, besides clearly announcing the excavation of the buried city, would become, in that light, a picturesque



WALL-PAINTING.
Frieze with Amorini variously occupied.

element in itself, like the complex fretwork of scaffolding in great modern buildings, which produced a peculiar artistic effect in itself. The general appearance of such an underground city, with well-regulated electric light, would add to the sumptuous effect of the excavations as a whole, and would avoid the monstrous and flat appearance which pertained to Pompeii, where street after street and house after house presented themselves to the weary tourist in the hard and uncompromising light of a Southern day.

Another member of the staff also pointed to the great advantage pertaining to such an underground exposition, in that the objects were sheltered from the effect of climate, sun and rain, which were visibly damaging the exposed buildings and the frescoes on the walls of Pompeii; while the danger, ever present, from future eruptions and the rain of ashes, which might at any moment bury and destroy what had been excavated with such pains, was averted in the case of such a subterranean city.

The report of the engineers favouring the excavation in part from above, and in part by means of permanent tunnelling, was thereupon unanimously adopted.

The next question discussed was the disposal of the refuse earth. A letter was read from the Minister of Public Works at Rome, stating that the Government were ready to transport all the refuse by means of railway-trucks, if it could be brought from the excavations to any point on the Naples-Salerno line. The material would then be transferred in order to be utilised in the Naples harbour works. A member suggested that it might be utilised nearer home in the building of a *molo* for the harbour of Resina or Portici; but it was decided to leave this question in the hands of the Ministry. On the other hand, it was agreed that a complete system of Décauville rails was at once to be planned from all the centres of excavation to converge upon a plot of ground to be walled in at a point joining the Naples-Salerno Railway. That all the earth

brought to this enclosure was to be passed through a series of sieves—ranging from wide steel bars, to hold the larger and heavier objects, to the finest wires, retaining a small gem or sliver of metal—succeeding one another on slopes; that, under careful supervision, this earth was to be examined for any objects that might have escaped the notice of the excavators on the spot, and that the refuse should then be automatically transferred to the trucks belonging to the Department of Public Works.

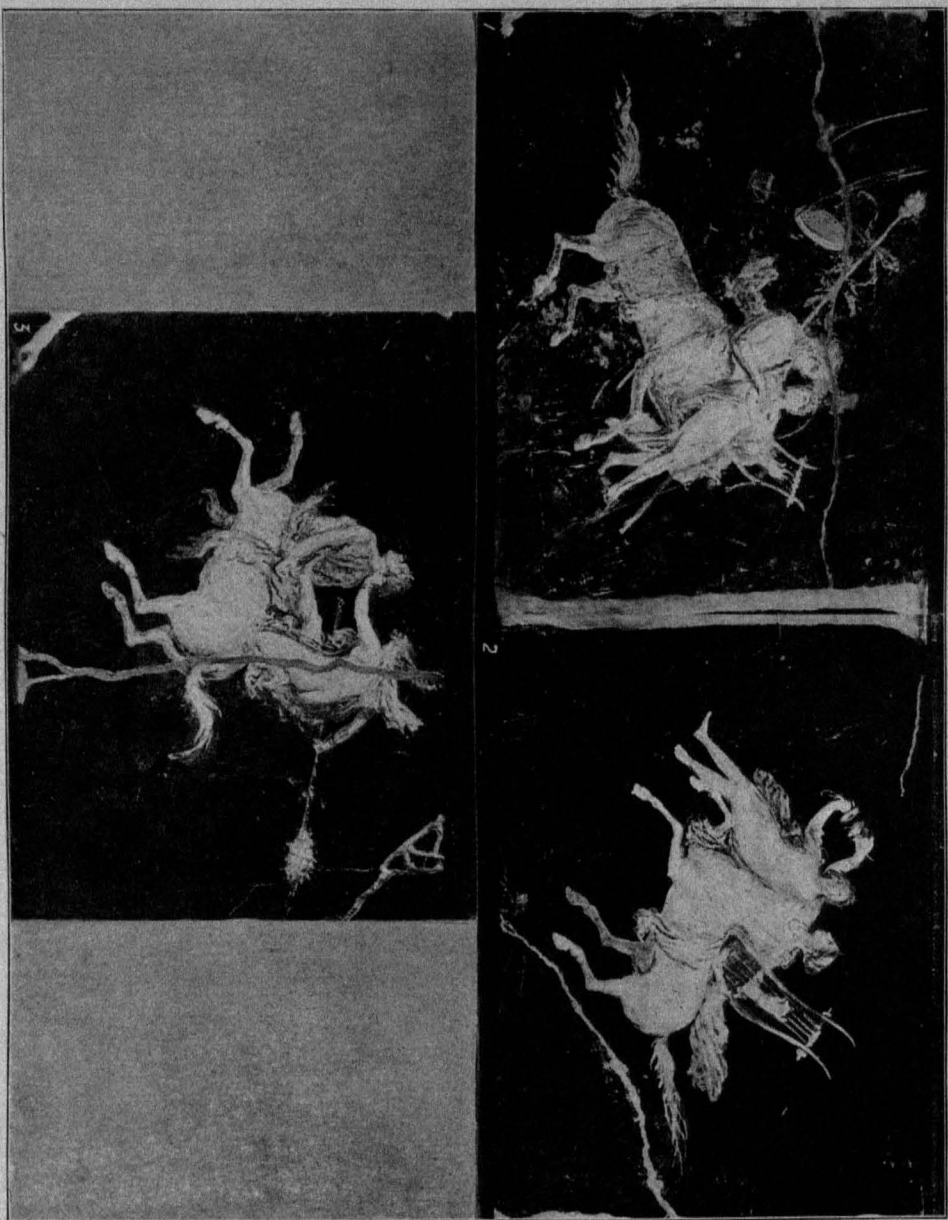
The important question now presented itself to the staff as to how, and at what point or points, the excavations were to be begun.

The question of the actual extent of ancient Herculaneum was now discussed among the archaeologists.¹ Whether or not Herculaneum had town walls rested on very slight evidence. It seemed clear that the limits of the town could be defined in the direction of the sea. On the north-west side the theatre may mark the limit of the town; while the great villa, the "Casa dei Papiri," certainly does this to the west. On the north-east, Dall' Osso was led to believe that, on an analogy of Naples and the Piraeus, where we have the clearest specimens for the Hippodamian plan of laying out the city, the main street, running north-west and south-west, divides the town into two halves. We might thus compute an equal distance to the north-east from the main street as the portion towards the sea now gives us. But the outlines of both Naples and the Piraeus are not so regular as to give any certainty in this respect in the case of Herculaneum. The same uncertainty is to be found in attempting to define the south-eastern limits. Beloch may be right in considering the large building at the south-east (marked in La Vega's map with a cross,² and thought by him to be a temple) a villa outside the town, and thus defining the town limits to the north-east of that building.

On the whole it was agreed that the exact limits of the

¹ See Book I. Chapters I. and IV., and Plates 10 and 11.

² See Book I. Chapter I., Plate 11.



DECORATIVE WALL-PAINTING.

Bold decorative style.

town itself could not be defined with certainty. Nor was this deemed essential.

It was felt by all that, as regards the town, the most important point was the main street running from north-west to south-east. This street was already discovered in the eighteenth century.¹ Now it was, above all, important to rediscover this street.

The first suggestion made was, that, by working up the street of the "Scavi Nuovi," we must strike the main street at right angles, probably at a point between two buildings (the Curiae or temples)² and immediately opposite the Basilica.³ This would at once give us the most important central points of the town. We know also that the excavation of the Basilica was not completed in the eighteenth century,⁴ and that we might here expect to make important finds.

In connection with this desistance of the early excavators, it was also maintained that we know that some years were spent in digging tunnels all round the Basilica.⁵ Now, the points where these tunnels were begun are fixed by the distance, given in *palmi*, from the theatre. Such a point might easily be identified, a shaft sunk, and the earlier tunnel followed up to the Basilica.

Another member, however, pointed out that the work at the Basilica was given up because some cottages above collapsed. Now, this group of cottages has been identified as lying between the "Vicolo di Mare" and the Gardens of Benedetto and Priori to the south.⁶ These cottages can easily be found now, and a shaft sunk there would bring us to the Basilica.

It was shown that a complete excavation of the Basilica was one of the most important and promising tasks. In the eighteenth century it yielded a rich harvest of paintings and statues, and we know that the interior of the building was never attacked by the excavators (see Part I. Chapter I.). It

¹ See Chapter I. Part I.

² See Chapter I. Part I.

³ See Chapter I. Part I.

⁴ See Chapters I. and IV.

⁵ See Chapter IV.

⁶ See Chapters I. and IV.

could be predicted almost with certainty that great finds would here be made.

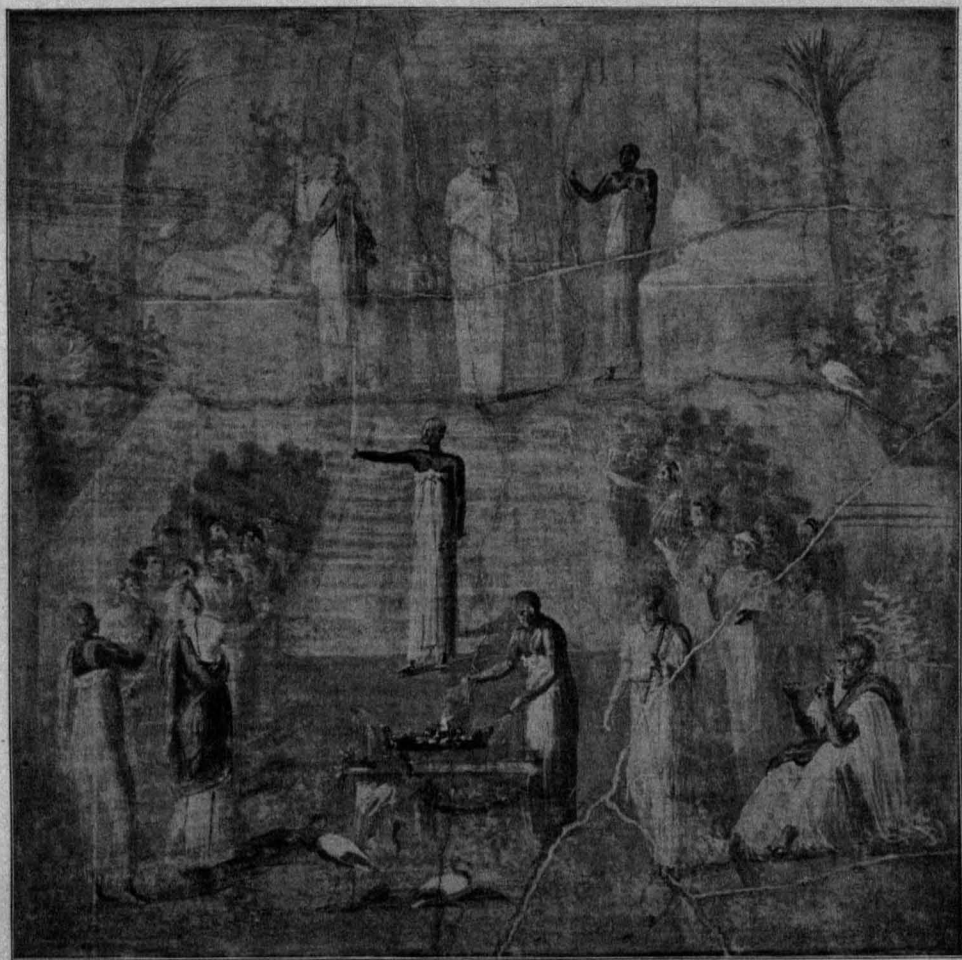
Ultimately it was agreed unanimously that the work of tunnelling should be begun up the street of the "Scavi Nuovi," so as to reach the main street opposite the Basilica. Simultaneously a shaft was to be sunk at the cottages above mentioned to reach the Basilica at this point, and, while excavating the Basilica, to tunnel in the direction of the "Scavi Nuovi" in order to meet the tunnel coming in that direction from below; also to work to the right and left along the main street when this was reached.

From the very beginning also excavation from above, entirely clearing away the top-soil, was to be vigorously pushed forward on the open land to the right and left (south-east and north-west) of the "Scavi Nuovi."

Furthermore, as Ruggiero (Introduction, pp. 40 and 41) has shown, the site of the great villa, the "Casa dei Papiri," can easily be found. It is almost due west of the theatre, the so-called *terrazzo tondo*¹ of the villa being about 370 metres from the theatre and 39.68 metres from the Caravoti (now Fanelli) garden.² It really stands in the Royal Gardens of Portici with no houses above it. Thus shafts could at once be sunk here, and it can then be decided whether the excavation should be from above, clearing the whole villa, or by means of tunnellings. In any case, when we remember the splendid finds in works of art and in manuscripts made in this villa, the knowledge that the excavation was not completed in the eighteenth century, and that the portions towards the ancient town still remain unexplored and intact, make it imperative that this work be at once undertaken. Works of art were found in every room of the house, and manuscripts were not confined to the library. We may therefore confidently look forward to the discovery of important treasures on this spot.

¹ See Part I. Chapter I.

² Ruggiero, *Scavi d'Ercolano*, p. x1. Introduction, *ib.* Map, Plate 11.



WALL-PAINTING. CEREMONY IN THE WORSHIP OF ISIS.

PLATE 38.

Attention was also drawn to the fact that, if Beloch¹ is right in considering the large building at the south by south-west side of the ancient town (marked as a temple with a cross in La Vega's map) a villa, this might also give a great yield. It was decided to sink a shaft at this point and to begin extensive operations there.

Finally, it was decided to sink shafts at a point to the north-east, in the direction of Santa Maria di Pugliani, where objects were found (wall-paintings, etc.) which led Ruggiero² to believe that the house formed part of the town. Dall' Osso,³ on the other hand, has good reasons for holding that this also was a villa. There are no houses above this spot.

The whole meeting agreed in deciding that, however desirable it was to excavate the town itself, in view of the *a priori* probability of making important finds in villas, and especially of the fact that by far the greatest treasures and the largest number of works of art and manuscripts all had come from the one villa, we must strain every nerve to discover such villas. Therefore, while the regular work was proceeding into the heart of the town, besides the shafts that were to be sunk at the points just indicated, several gangs of men were to be distributed over the whole immediate neighbourhood of the ancient town, to sink trial shafts in the hope of discovering such villas. As soon as such a site was identified, systematic excavation on a larger scale was at once to be vigorously pushed forward. This, in the opinion of the majority of the staff, appeared to be the most important part of the whole task before them.

At the end of these preliminary meetings of the staff it was also agreed that the actual workmen should, as far as possible, be drafted from Resina and the neighbouring towns.

¹ *Campanien*, p. 229.

² *Scavi d'Ercolano*, p. vii. See Book I. Chapter I.

³ *Tribuna*, January 29, 1907. See Book I. Chapter I.

CHAPTER III

DURING EXCAVATION

THE work is proceeding vigorously at several points. As we view the busy scene from the higher ground, we can distinguish different centres of excavation where masses of workmen are digging energetically. They become more distinctly recognisable by flags which are marked with different letters. In some cases it is only by means of these flags and the rails leading to the spot that we can identify them; for these are the tunnel or shaft mouths, and the work is proceeding underground.

As we look down from our higher point, we distinguish two large groups of workmen to the right and left of the "Scavi Nuovi"; these have flags marked respectively A and B. They locate the excavators clearing the masses of earth towards the Royal Gardens of Portici and the open spaces on the south-east. The flag marked C shows the mouth of the great tunnel following up the street to the north-east beneath the town of Resina. D and E are the flags to the north, marking the shafts sunk on the supposed site of the Basilica and at Santa Maria di Pugliano. F is the shaft-mouth at the great building to the south-east of the town, and G denotes the shaft to the "Villa Suburbana," the "Casa dei Papiri." Smaller flags in the distance tell us of the various exploring parties who are sinking shafts to find further suburban villas.

The high flag-pole, with the Italian flag fluttering in the wind, almost in the centre of the whole work, is placed in front of a shed to which telephone wires run from every one



BRONZE STATUETTE. AMAZON.

PLATE 39.

of the centres of work. Here the Chief of the staff with several vice-chiefs and *aides-de-camp* is always to be found, and is in constant communication with the several centres. Questions are at every moment referred to headquarters, and doubtful points submitted here for his decision—points relating to the administration of the work and the progress of the work itself. Either the Chief or one of the vice-chiefs is always to be found here. But periodically one or the other, who is *du jour*, makes the round of all the works on inspection.

Another characteristic feature of the scene before us is the network of rails issuing from these several centres, and all converging to one point, the enclosed yard near the railway line. Here the trucks are plying to and fro from the open excavations or the tunnel-mouths, depositing the earth which is here carefully sifted before it is transported. But we also notice switches on these lines of trucks which lead to the large group of sheds near the Chief's office; and we can see how certain trucks, bearing small flags with the same letters as mark the flags at the point whence they come, are shunted to the sheds. The trucks contain the objects discovered at each point, and these are deposited in the large shed, each grouped separately according to the letter and number (A 5, D 3) on the flag, marking the truck that brought them.

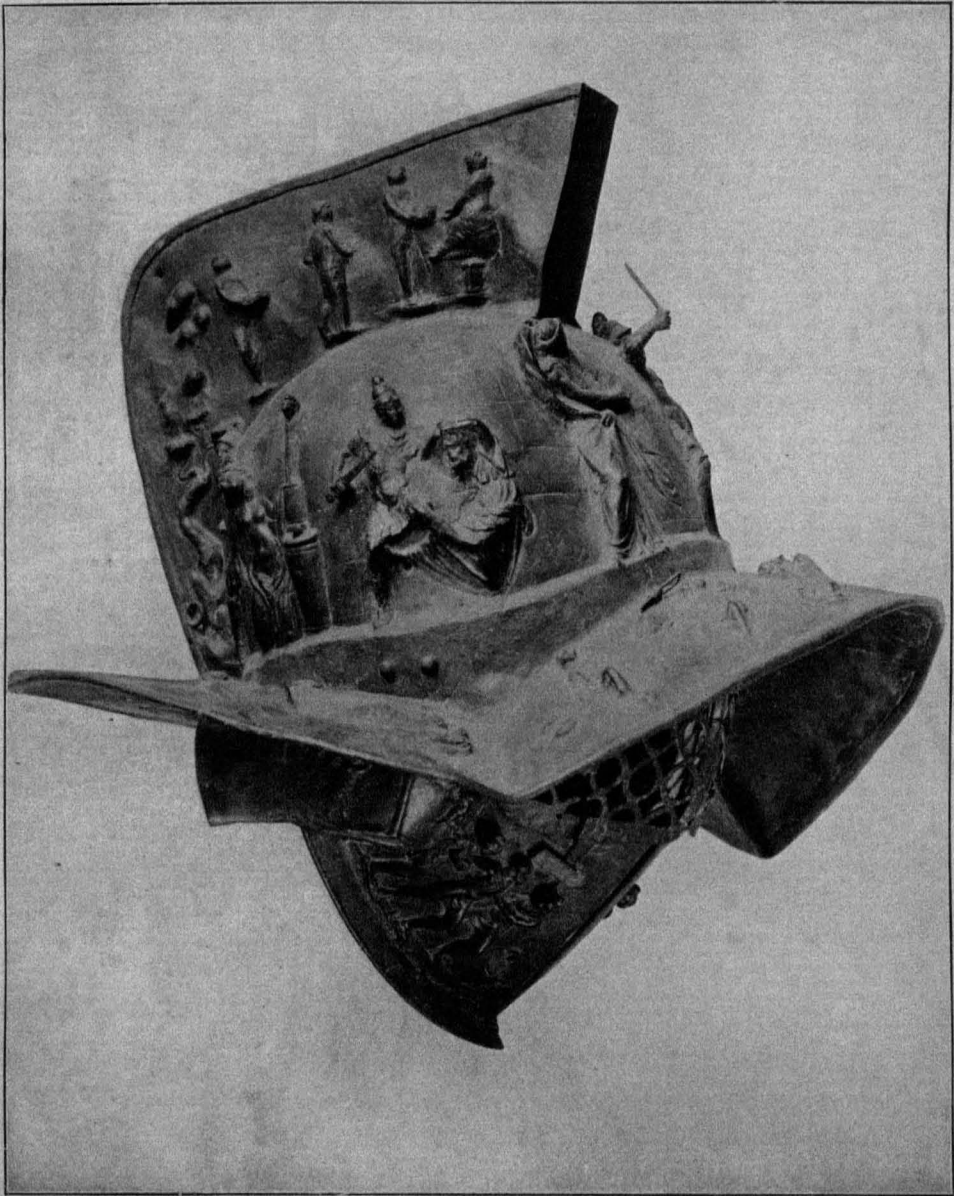
While from the tunnel and shaft mouths in the town the trucks run on wire-rope overhead, or the rails are clear of the traffic in the streets and the houses, the open space of excavation radiating on either side from the present "Scavi Nuovi" down to the railway line is enclosed by a continuous high wooden fence. It has been found necessary to do this in order to keep persons not engaged in the excavation from trespassing on the works, impeding progress and rendering the careful guarding of the objects found less effective.

The whole question of policing was one of great difficulty. It was soon found necessary to exclude all persons who were not workmen or members of the staff from the field of operations,

and at night a band of night-watchmen were always present at important works to guard the excavations and the storehouses. To ensure efficiency in this respect, and at the same time to further discipline, it was found necessary to provide all the workmen with bands worn round the arm, and even to give to each a card which was presented and left with the gate-keepers as they entered and returned from the works. This at the same time accounted for their presence during working hours, and made sure of the place being cleared when work closed.

It was found most practical to provide the members of the staff with caps and with badges distinguishing between full members, associates, and probationers. This secured for them ready access to all parts of the work, and enabled them to use their authority with workmen and against possible intruders. The large number of visitors who flocked to Herculaneum from all parts of the world, eager to see the work and the finds, soon made it necessary, while encouraging their interest, to fix certain days and hours for such visits to the different points of the excavation, when those objects that were in a state fit for exposition were shown. But such visitors were invariably accompanied by members of the staff. Special facilities were granted to members of foreign committees and contributors to the funds.

When now we visit any of the sections while the work is proceeding, we find a most systematic organisation. Each one of the sections, A, B, C, D, etc., is presided over by a full member of the staff, who may be an archaeologist, engineer, or representative of some other specialty. But each section must have at least an archaeologist and engineer in charge who are full members. Within the sections, again, the work is subdivided into groups consisting of smaller gangs of workmen distinguished by numbers, directed in their work by some member or associate of the staff, who is responsible for the workmen and must keep the full record or diary of his work. As regards the workmen, it was soon found that an *esprit de corps* was developed among each section and each gang within



BRONZE HELMET, WITH BATTLE-SCENE IN RELIEF.

PLATE 40.

? Iliupersis.

the section, and that a closer relation—resulting in a sense of loyalty to their immediate chiefs—sprang up between the workmen and their particular members of the staff. They thus called themselves, and were known among each other, as A fives or E sevens ; or by the names of their chiefs, as Giuliano's or Smith's men.

It was also found of great advantage, in order to arouse keenness and care, to give prizes for the results of work at once and on the spot. In order that picking and digging should be carried on with great care, a prize in money, the amount varying with the value of the article, was at once given to the man or the gang who discovered the object. But the prize-money was above all affected by the state in which an object was found. If it was broken or damaged, whatever its value, no prize was given. It was even found practical that a greater prize should be granted when the objects were handed over with the earth on and uncleaned, or if the workman desisted from taking the object out of the ground and called the chief at the head of his gang, pointing out the spot, so that the expert could himself dig the object out. For it was found that objects were often damaged when workmen began eagerly and roughly to clean them, to satisfy their curiosity or their greed, and that therefore the greatest praise was due to him who curbed his keenness and enabled the expert to deal with delicate objects with the proper care. While thus increasing the energy of the workmen, and at the same time ensuring care and caution, it was found that such a system of prize-money removed all temptation from among the men to steal the portable objects. For they soon found that they could rely on the fairness of their chiefs in recognising the value of the discovery, and that the sums they thus received were greater than those which dishonest dealers prowling about the works would have given.¹

¹ This system was developed by us in our excavations of the Argive Heraeum, and it was found to fulfil the objects here enumerated.

The chief of each smaller gang of workmen thus had a circumscribed area to work by himself, the plan of his work, prescribed by the chiefs of his section, and the general lines of work of each section having been agreed upon at the meetings of the whole staff; while the chief and his assessors were bound to see that these lines were followed in each section.

Now the chief of gang keeps the most careful diary of the work of his men, measuring and recording the layers as he proceeds. He must mark every object he finds with a running number, a definite colour in indelible ink showing that this mark designates the running numbers at the point of excavation.¹ An object would thus be marked B, V. 3473, showing the section, the exact spot, and the number in the course of excavation, from which the day and hour could be ascertained. These marks, it is needless to add, would be placed on a part of the object where the design would not be interfered with. Where such marking should prove impracticable, firmly adhesive labels would be attached.

To every section a photographer is attached. His work is so arranged that at every spot at which a separate gang is working he takes a photograph at fixed intervals. The negative itself is marked with the section and gang number, the date and the running number of the periodical view taken: D, VII. 12/4, 6, 10 means that the negative shows the work at Section D, Gang VII., on April 12, the sixth round of the photographer at 10 o'clock before noon. These negatives are at once taken to the developing shed and are developed, while, with the least delay, three prints are at once taken, the mark being visible on the right-hand corner. Between these periodical photographings, special photographs are taken of important objects at every stage of their discovery and emergence from the earth.

¹ We shall see in the next chapter that a different colour is needed to mark the objects in their grouping as objects—vases, statues, etc.



BRONZE TRIPOD.

Other kinds of illustrations are also frequently demanded to be made at once and on the spot. So, for instance, it is feared that the fresh and beautiful colour of a wall-painting or of some definite object may fade. One of the artists is called by telephone, and at once makes a faithful sketch in water-colour or oils, to be added to the day-book record, and fixes the state of the colours at the moment of its first discovery. In many instances the chemists have to be called in to determine how such delicate objects are to be handled. Most thorough preliminary experiments have been made, and are still being carried on, as to the exact nature of the colours used in the different works by the ancients. It is then decided whether a certain object may or may not be exposed to the light ; whether it is at once to be encased in glass, the air being excluded ; whether a glass is at once to be placed in front of a delicate wall-painting or not.

The chemical department has also done very successful work in dealing with bronzes. We are all rejoiced to hear that they can now secure immunity in the ancient bronze-*patina*, so that we need no longer hesitate, after due precautions have been taken, to make moulds from the most delicate bronzes. The exquisite bronze of the Seated Heracles, recently found in the Villa by the men of Section D, which caused such a thrill of excitement throughout the whole works—in fact, all over the world,—is now maintained by the competent authorities to be an early Greek reproduction of the famous Herakles Epitrapezios of Lysippus. We hear that the King of Italy has decided to have a number of facsimile reproductions made of this work, to be mounted on a pedestal bearing an inscription signed by the King, with the name of the person to whom it is to be presented inscribed in each case. After consultation, the King has decided to give a certain number of these to each national committee to be presented to their most generous subscribers.

Architects and engineers have also occasionally to be called

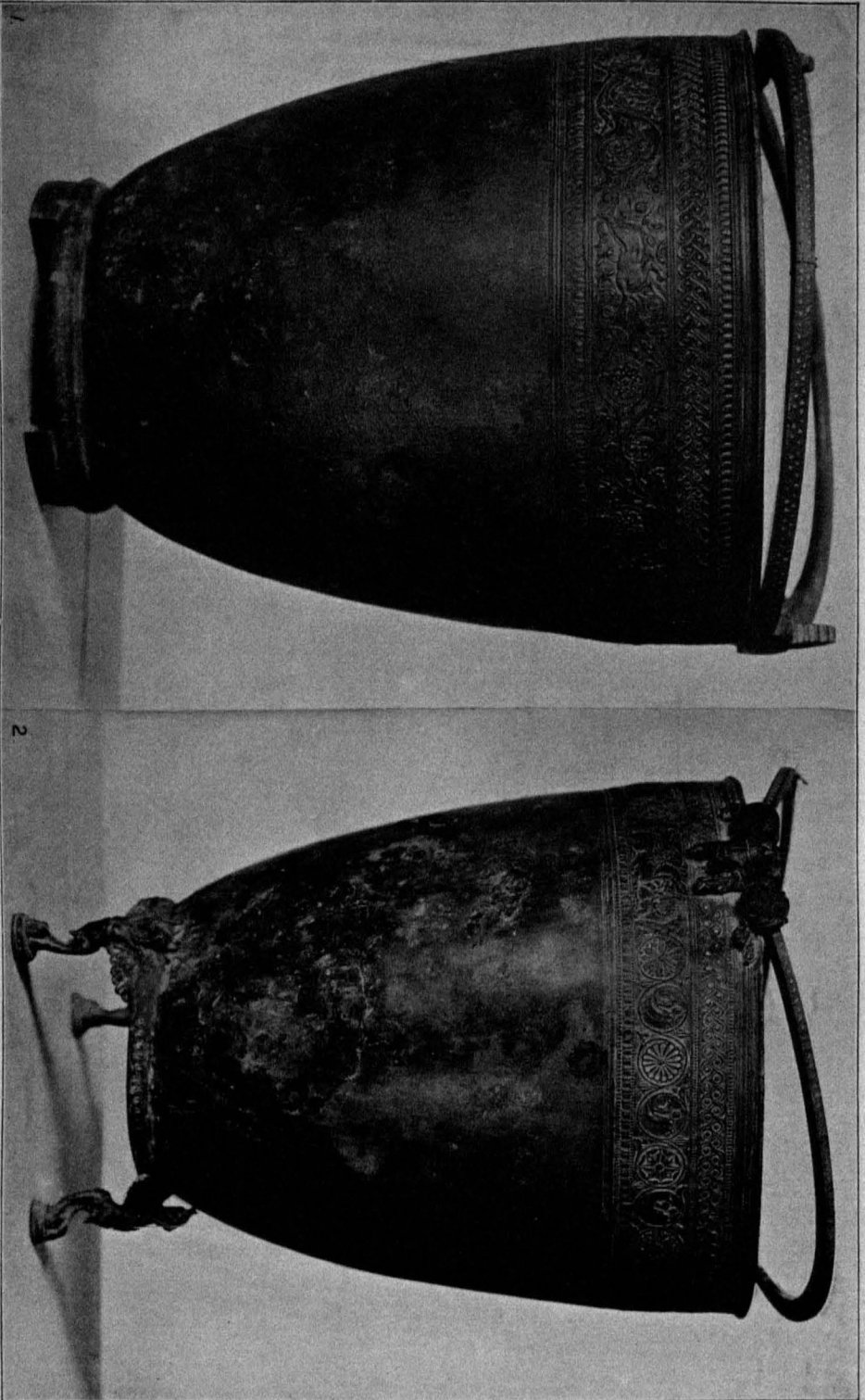
in by the chiefs of gang to decide about the safety of a wall, or to make plans and drawings of such structures as may be necessary in order that the work may proceed properly. Great difficulty has just been encountered in dealing with a house in Tunnel C. This house was found in a most perfect state of preservation, the upper storey and the roof being intact. The span of the tunnel, required to show it completely and to set the roof free, was found to be so great that it was decided to run a thick supporting wall to the top, thus, as it were, cutting the house in two, and exhibiting it in two separate tunnels.

Not long ago it was found necessary to transport carefully some of the earth to be analysed in the laboratory; while some bones and some specimens of cereals, found in large vases (*pithei*), were sent to the zoologists and botanists of the Royal Agricultural College at Portici for their examination, as some light might thereby be thrown on the nature of the building excavated.

Of all these incidents and facts the diary of each chief of gang takes most accurate records.

At the large store-shed, where the objects found each day are deposited, there is, always the greatest activity. The trucks marked by the flags denoting the section and gang arrive continuously. Within this spacious shed the spot for depositing the finds from each section is fenced off. The trucks are carefully unloaded, and, by workmen skilfully trained, the contents are deposited and arranged with caution, according to the days of their discovery. At the end of the day the staff-member in charge of the site excavated at once proceeds to the shed, and, diary in hand, he identifies the objects sent down, his list being copied out by the officials present during this examination, and the list (serving as part of the inventory of the whole contents of the shed) is deposited with the clerk of the shed.

With this the stage of discovery, as far as it is immediately



TWO BRONZE PAIS WITH SILVER ORNAMENTS.

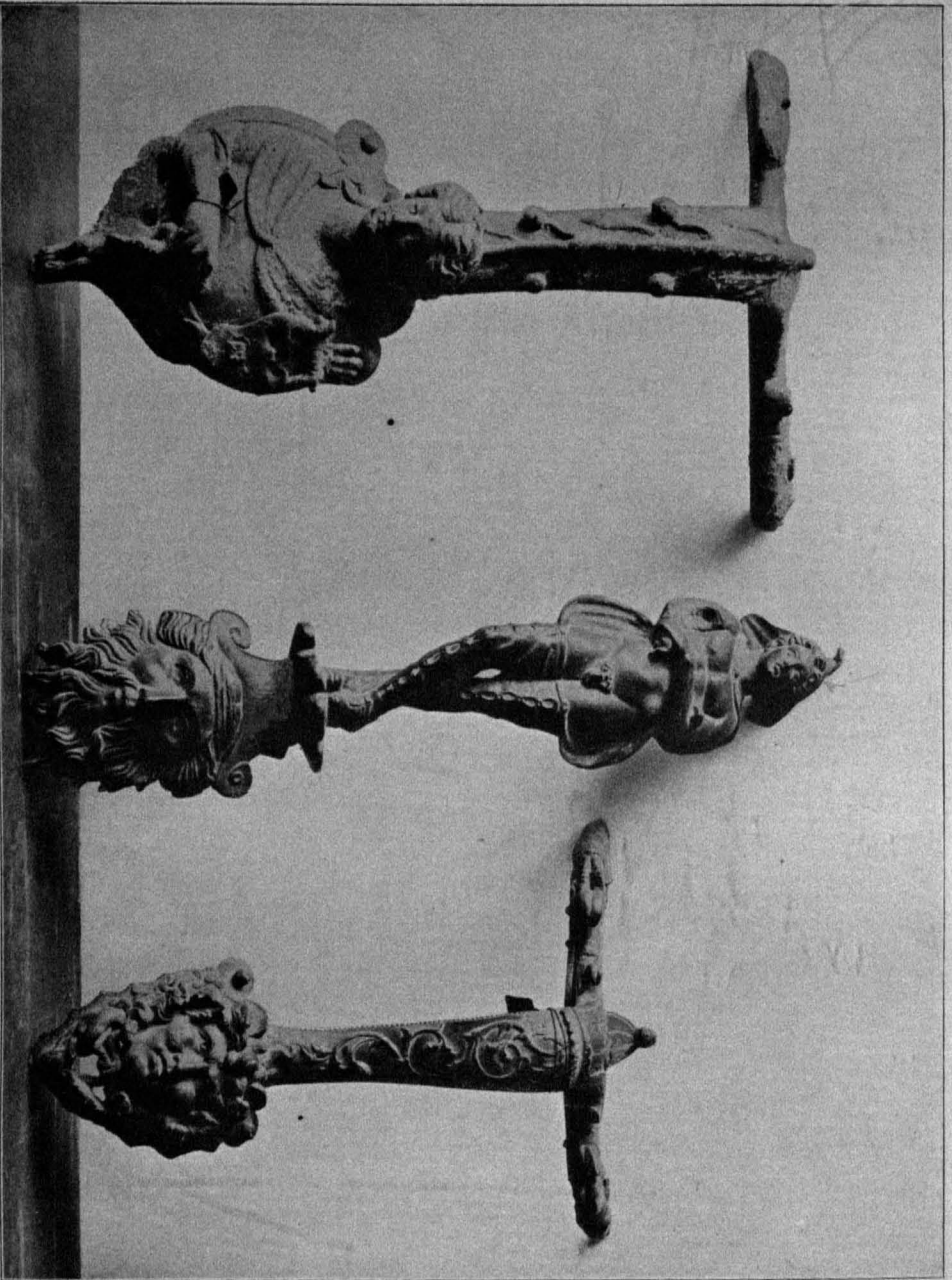
connected with the actual excavation, has ended. We shall follow the process after this stage in the next chapter.

It will, of course, be seen how numerous a staff is required ; for at no time is there any part or point of the excavation without an expert inspector. As one man cannot be present during the whole of the working day, relays of members of the staff must be ready to take their turn at the work. Besides these, as will be seen in the next chapter, a large band of trained men will be required to supervise the different store-rooms and restoring and cleaning sheds, as also for the elaborate system of keeping the records. The department of publication, finally, will also require a considerable number of trained men. Therefore our rough estimate of one hundred members of the staff does not err in the direction of exaggeration. All the younger members of the staff will have to take their turn in these several departments of the work. Besides making their work on the spot more intelligent and efficient (for it is always good in a great organisation that the worker at one department or in one phase of the work should be acquainted with the relation which his part bears to the whole), this system will offer the most complete training to the archaeological student and to the future official of a museum. But the whole work itself, as we shall further see, thereby gains in organic quality, in accuracy and thoroughness, and in the complete control of the manifold and complex results which it presents.

A striking feature in the life of the staff is the midday meal taken in common. The chief presiding calls on the different heads of sections to make a short and informal report of the progress of the work during that day. He, in his turn, may call upon one of his chiefs of gang. The work is compared, difficulties as they arise are here rapidly discussed, additional or special help demanded. But this again serves to keep all the separate sections in touch with one another, and to enable the individual members to maintain some

acquaintance with the work as a whole : never to lose sight of the due proportion in the work, to co-ordinate and subordinate their own efforts to those of their colleagues, and to foster the spirit of unity. They would thus always have present in their mind the great task which has brought them and keeps them all together, and the more remote ideals which move them and which inspired the whole enterprise.

Another striking and picturesque scene is afforded by pay-day, after midday each Saturday. The workmen, each bringing his tools, are all grouped together in a large semi-circle, according to their sections and gangs, and are called up by name. The chief and the staff are seated in the middle of the circle. As each workman advances to receive his pay in a small open envelope, he deposits his tools, to be resumed by him on the following Monday. There may exceptionally be some word of praise or blame or warning addressed to individuals. This also applies to sections or gangs. Occasionally some form of address referring to the work, to discipline, or to matters concerning the enterprise as a whole, is delivered by the chief of the staff. But here too, among the workmen as among the staff, the *esprit de corps*, encouraged among the gangs and sections, is impressed upon the body of the workmen as a whole, and every means used to quicken their intelligent interest in the enterprise and the higher aims which inspire all concerned in it.



THREE BRONZE HANDLES OR KNOCKERS.

CHAPTER IV

AFTER EXCAVATION

IN the last chapter we left the chief of gang as he had inspected the objects coming from his works after they were deposited in the large shed, with his own list in his hand ; and this list, having been verified, was copied out by the inspector of the shed. We now follow him as he wends his way up to Resina and enters a large house with the sign "Archivio degli Scavi." This house contains numerous offices with clerks, and might, from its appearance, be a bank or any large business house. He enters a room where he is received by the chief of this office, to whom he hands his day-book. A large day-book marked with the section and number of his works (*e.g.* F, 6) is produced, and, according to the date, the day-book of the chief of gang is copied out, including his account of buildings, walls, frescoes, and all the list of objects found, as deposited in the shed.

This day-book is subsequently passed on to another office where the large ledgers are kept : (1) giving a summary of the whole excavation day by day ; (2) giving the list of objects found in running numbers, without regard to the day. These are edited or abridged from the day-books. The lists of finds are then transmitted to another room, where separate ledgers are kept for each class of objects—houses, paintings, marble sculpture, bronzes, vases, etc.—into which the entries are again made. After the chief of gang has communicated his diary to the chief of the office in charge of the daily records, his work is done.

We must now return to the large shed where the truck-loads have been deposited, and see what happens here after the inventory of each day's finds, checked by the diary of the excavator himself, has been made. We must follow the history of these "objects" through the several stages while they are under the control of the excavators.

As soon as feasible, these objects are roughly sorted in the shed itself. On rare occasions some objects are found in such complete state of preservation, and so free from adhesion of earth and other blemishes, that they can at once (properly marked anew) be transferred to the special shed where the class to which they belong (statues, vases, inscriptions, etc.) are kept.

All the other finds are, in the first instance, removed to the "cleaning sheds." The official bringing them demands a receipt for the objects of which he gives a list, and this list is again copied out into the book kept by a clerk attached to the shed. The chemical staff had for some time been engaged in making experiments how to deal with the cleaning of various objects, so as to free them from earth, corrosions, and adhesions, and have devised an excellent system by which the objects are effectively cleaned (by jets or sprays of water or chemical solutions of varying temperature and under different pressure, etc.), without in any way damaging their surface or the colours and delicate polish applied to them originally. In doubtful cases, namely those that do not clearly come under the general processes adopted, the object is taken to the chemical laboratory (a receipt being given and record being kept of such transference), where the treatment is carefully applied by the most competent experts. We have already mentioned that our chemists had made most important discoveries concerning the treatment of bronze. These not only refer to the preservation of the *patina*, but to the restoration of shape and design. Shapeless masses of bronze, the appearance of which at first sight made all restoration of form and design seem hopeless, are



SILVER SITULA.

Scene in bath in *repoussé* work.

PLATE 44.

treated by different solutions until the original shape and outline and the most delicate linear ornament and inscription reappear.¹

Upon issuing from the "cleaning shed," the fragmentary objects are at once transferred to the "sorting shed," the same process of receipts and records being again followed in this case. Here every attempt is made to find the missing portions belonging to an incomplete object, and to group together the several parts of an object that form a whole. There are long tables in this shed, and the fragments, according to the class of objects (vases, terra-cottas, bronzes, inscriptions, etc.) to which they belong, are each given their table; while the fragments deposited are kept on shelves and are distributed according to the place where they were found and the date of their finding.

In this respect those engaged at Herculaneum are exceptionally fortunate compared with other excavators. In all sites, not thus covered by volcanic eruption, the objects are found scattered all over the ancient site, often hopelessly heterogeneous fragments massed together from different parts, often far removed from their original location. This is especially the case where buildings have been subsequently erected on the earlier site and the space has been levelled and filled in, the various remains being used to level the ground as "dry rubbish." In any case the soil has been turned over, and it can readily be imagined with what effect upon the fragmentary objects strewn about. This is well illustrated by the excavations on the Acropolis of Athens, where, after the Persian invasion and destruction of the buildings on the Acropolis, the surface was levelled by Kimon, and the ruins and refuse were utilised to fill up the hollows. It was out of this confused mass of filling—what the Germans called the *Perserschutt*—that the numerous interesting finds were made. We found similar conditions in our excavations at the Argive Heraeum, where

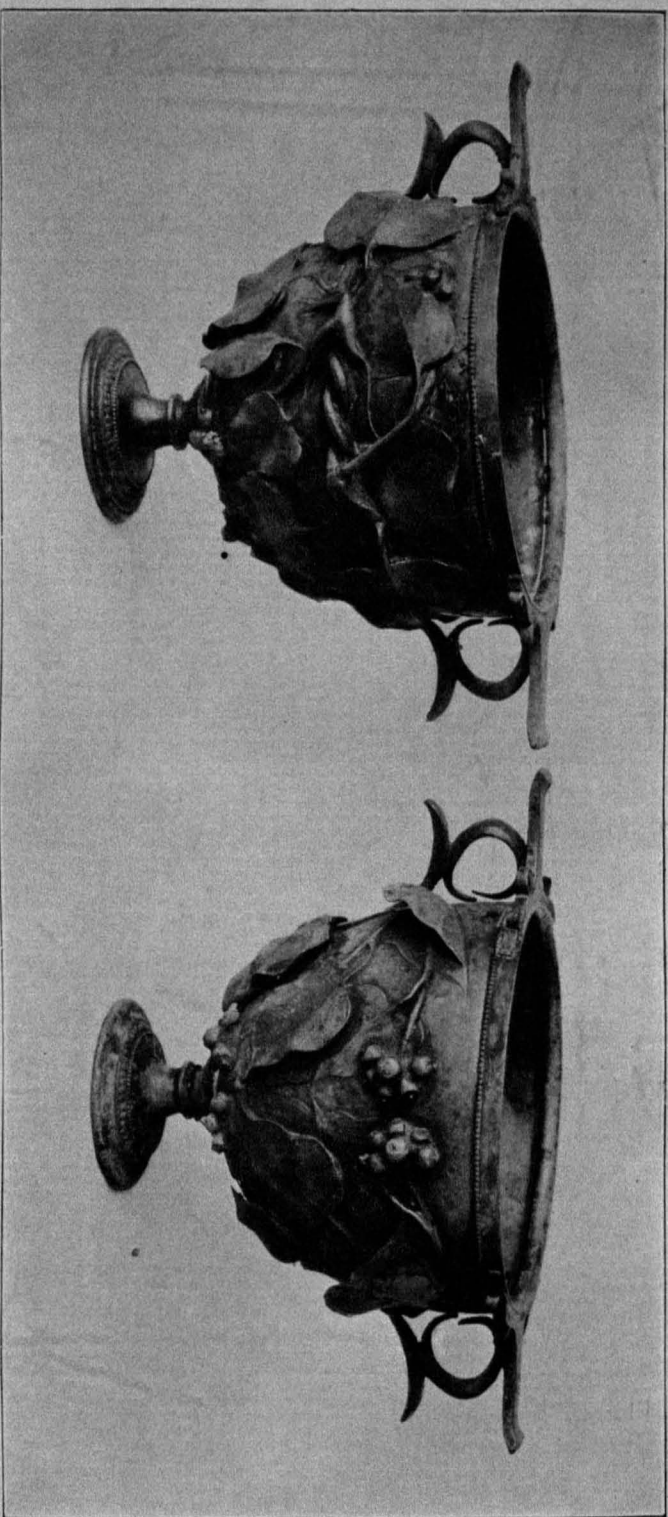
¹ It was most startling to watch the results thus attained some years ago by Mr. Bather, of the British School of Athens, in dealing with the Acropolis bronzes, and of Mr. De Cou in his careful work on our bronzes from the Argive Heraeum. Only the colour and *patina* had often suffered.

the ground was levelled and prepared below the terrace of the burnt temple, by utilising all the remains and the mass of débris about it, to fill in the ground and the foundations, when in 423 B.C. the second temple was built. It can be imagined how this refuse, containing sculpture, vase-fragments, and terra-cotta fragments, bronzes, etc., presented a confused mass of unrelated parts.* The barbarous hordes who, at various periods, swept over the ancient sites, each used what they found for their rude dwellings and fortifications and other purposes of their life. We thus come upon the several fragments of the same statue in distant parts of the site of Olympia, where, through *Verschleppung*, the so-called *Slaven-mauer* proved prolific in remains of sculpture.

Fortunately this has not been the case at Herculaneum; and though, owing to the onward rush of the mud-stream, there are isolated cases in which objects have been transferred from their original destination, the parts of the same work, even when separated, have not been wantonly mixed up and confused by the hand of man, as is the case in all other sites. The work of piecing together in the "sorting shed" has thus been far simpler and more successful than in any previous excavations.

When the fragments forming one object have thus been grouped together, they are transferred to the "repairing shed"—the same process of recording being here observed. Here a large band of most highly skilled "restorers" are engaged in fixing together the fragments, until a complete object is presented out of them. Of course, in certain cases, some small portion may be wanting and may never be forthcoming. In no case is this supplied anew and in imitation of its antique appearance. Additions are only made where structurally they are necessary to support the object or to indicate the general shape—a support to a statue, the missing portions of a vase in white plaster, etc.

The objects which are thus completed are now transferred to the different sheds, where there is already a splendid array rich in finds of every description. The shed of marble and



TWO SILVER CUPS. FRIEZE OF IVY.

made it clear that the marble statue is by him, or is a copy of one of his works, and that a whole series of other statues in our European museums can now be identified as being his.

The richest and most important shed remains that containing the Bronzes. I have just mentioned one striking find recently made. It would take us too far to attempt an enumeration of these finds.

There is also a large shed containing paintings, graphiti, and those wall-paintings which cannot be left on the houses *in situ*. Another shed contains inscriptions; another is for vases and terra-cottas; and still another for works of minor arts and crafts, including cases for gems and coins.

All the objects here deposited are carefully recorded, and at once receive a running mark in a colour (differing distinctly from the previous marking) showing the shed and the number of the object, such as S (for sculpture) 3423.

All this marking, and especially the records kept at every stage, make the care of the objects as secure as possible. In fact, it is easy to fix the disappearance of any object within the narrowest limits when it can no longer be traced; and up to the present moment no object of importance has been lost. For, the moment an object is lost sight of, it is easily traced by consulting the inventories from the first shed in which the finds are deposited in their rough state, through each transfer, the receipts for its acceptance in that department being shown, to its last deposit in the special shed containing the complete objects of its class. The point at which no receipt is found shows the shed or the intervening transfer to be the region where careful search must be made, and fixes the responsibility within proper limits.

There has recently been considerable discussion within the Italian Government and in the Italian press as to the stage at which complete articles should be transferred to the permanent museums. I am happy to hear that the balance of opinion tends towards their retention in the neighbourhood of the



SILVER MIRROR CASE WITH RELIEF.

PLATE 46.

? Ariadne. The rim is modern.

excavations until these shall have been completed, a most perfect *surveillance* now being organised at these temporary museums. It is also not yet decided whether they should finally be deposited at Naples, or whether the Royal Palace of Portici should be converted into a large Herculean Museum. Those who favour the former alternative, besides maintaining that the newly discovered objects ought not to be separated from those in the Naples Museum found in previous excavations, strongly urge that the greater distance from Vesuvius in the case of Naples offers more security to these valuable collections against the danger from future eruptions.

All the fragments that could not be identified or used in forming a complete object are deposited in a large shed where they are kept till the whole excavation has been completed. They are arranged according to sections, and at any moment a search can be made through them, if such re-examination is rendered desirable in the progress of the work.

A large house in Resina has been appropriated to the papyri. Several interesting finds of these most important treasures have already been made. At this moment the whole staff is in a state of expectant excitement, because in a house in tunnel D, in which several manuscripts have already been found, they are now about to enter a room which, in all probability, appears to be a library. Each scholar is in a state of hopeful exaltation that new portions of his favourite author may be forthcoming. Like children, even the aged and most sober are building and discussing their castles in Spain. They are impatient with the heads of that section for not pushing on the work more rapidly. But the engineers and architects use every care to secure the walls of the building and proceed with the greatest thoroughness. They rightly maintain that our impatience, and the special desire of securing certain objects, ought never to lead us to slur over the actual work of excavating and endanger the security and preservation of the structure; reminding us that in the immediate as well as the

remote past, excavation has too often meant the ruthless digging or hunting for one class of object which, in our greedy estimation, we considered of supreme desirability and importance.

A long series of investigations and experiments made by our chemists on some papyri have led to most fruitful results—not only in the facility and security with which they can now be unrolled, but especially in the restoration of such portions as were formerly deemed worthless, to a state in which they can now be deciphered with ease. The process is far more advanced than the rudimentary one described by Winckelmann,¹ and hardly improved upon down to recent times. The best chemical authorities have been at work on some of the illegible fragments formerly cast away, have dissolved and analysed the papyrus, the ink, counteracted its carbonisation and the effects of moisture, and, submerging the whole roll in some compound, they not only are able to restore colour, but to soften the mass, so that it can be unrolled naturally and easily and without damage.

So far we have followed the natural history of the objects themselves. Now to return to the human workers who found them. We left the chief of gang when he took the last step in his day's work, in submitting his day-book to the proper office of the "Archivio degli Scavi," where it was copied out and its contents transferred to the different books completing the records of the work.

At the end of every week each section meets and in consultation prepares a report of the week's work and finds, which, together with the suitable and complete preliminary illustrations from the current photographs and drawings, are then published weekly in several languages. There are printing-presses and studios for the reproduction of process-blocks on the spot. These reports are signed by the heads of

¹ Winckelmann's *Werke*, Dresden, 1808, vol. ii. p. 240.



1.



2.

FOUR SILVER MEDALLIONS.

PLATE 47.

Two in high relief, two in low relief. Apollo, Artemis, Satyr with lyre, Amorini.

each section and all the assistants, no distinction being made. The general reports on the work as a whole are signed by the Chief and the Executive Committee. A great point has been made of the necessity of thus publishing rapidly with illustrations the result of the work as it proceeds, not only because this assures the maintenance of interest in the enterprise all over the world, but also because, in the interest of science itself, it favours the proper elaboration of the results without unreasonable delay.

One of the most deplorable practices of excavators has hitherto been that the most important results of their actual excavations have been withheld from students and from the public for such inordinately long periods. The mere knowledge that discoveries have been made in certain directions has prevented those working in the same direction from completing their labours; and they have thus been kept waiting for years, while the world at large has also been deprived of the benefits which the discoveries might have bestowed. The rapid publication of such weekly bulletins obviates these difficulties and disadvantages. The Council has even considered favourably the requests of certain specialists who, apprised of particular finds through the bulletin, have come to Herculaneum to make further studies of definite objects. Such privilege is, of course, only granted in exceptional cases. So Professor Gomperz of Vienna is now at work at some papyri in the house containing them in Resina.

Some difficulty was encountered in dealing with journalists who naturally flock here in numbers. They, of course, desire to give early news concerning important finds. The attitude of the authorities towards them has been decidedly favourable. Yet every effort is made not to encourage the spread of sensational and false reports, and not to lay the staff open to the charge of partiality in the distribution of news. The Information Bureau, open at certain hours, is officially empowered to give accounts of discoveries and to distribute

photographs when these have been passed by the Committee on Publication.

The final official publication of all the work is in the hands of the Italian Government, and its preparation will be spread over years. The Italian Government will invite some of the foreign scholars to take part in this final publication.

A last word on the life of those engaged in the excavations. The relation of the staff to the workmen is excellent. Discipline is maintained without difficulty. With all good fellowship, and the interest which all those who have individually to deal with the men manifest in their lives and in their welfare, the rules are carried out with justice, yet with firmness. The black sheep are at once dismissed beyond recall. This at first caused some difficulty: the traditions of personal favouritism are so deeply embedded among people who are in the early stages of self-government, that it has taken some time for them to realise the absoluteness of law and the fairness with which their superiors adhere to its requirements even against their personal interest or inclination. But they have come to put their faith in the justice, fairness, and truthfulness which are the supreme principles of the whole organisation and the leading characteristic of those in authority. There was also some difficulty owing to the intrusion of local politics. There were even traces of the activity of secret societies. Here, too, a certain humorous good-nature in wilfully ignoring the existence of such powers, as well as an undaunted fearlessness and firmness in carrying out the rules governing the work, soon convinced those who desired to divide authority that their efforts would be unavailing. Moreover, the great economic advantage to the labouring population and to the whole of the community springing from the works themselves, and the wealth brought by the masses of visitors flocking to the spot, convinced all parties that nothing but good could accrue to the whole neighbourhood, and that those responsible for

the execution of the work honestly and actively had this at heart.

Among the members of the International Staff itself all has gone smoothly. The Committee on Discipline has had no work to do. A tradition, leading to the development of a code of intercourse for the regulation of the common life, has more and more established itself. It is based upon the widest amount of freedom and independence, while recognising the manifest desire to cultivate good relations and an *esprit de corps*, constantly impressed upon all the members by the common work and the common ends. Antipathies and differences of opinion are soon reconciled or rendered harmless. Strange to say, the more noticeable differences or disagreements have never arisen between members of various nationalities; they have always occurred between members of the same nationality. It has been found that colleagues of the same nationality often manifested a want of appreciation of each other's qualities and achievements, and that in many cases, through the just appreciation of the foreign members, the scientific worth and the excellence of character of a member from one country have here for the first time impressed themselves upon their own countrymen, hitherto blind to them.

The mode of life and the arrangements for social intercourse outside of working hours have no doubt been greatly contributory in producing these good results. Besides the midday meal in common, an evening meal is also provided for all those who desire to avail themselves of it. Here, too, there are consultations and discussions concerning the work. The reading-room and club-rooms afford all varieties of games and amusements. But, occasionally, meetings are called for the more regular and formal discussion of important points concerning the work and the organisation of life, in addition to the sittings of the various committees. Twice a week there are lectures, papers are read, and a discussion follows. But the intellectual life is not confined to the archaeological interest or to any

specialty relating to the work. Literature and art of all periods and countries are cultivated ; and the most favourable opportunities are afforded to each member to acquaint himself with the intellectual, artistic, and moral movements, past and present, of other nations, through the immediate contact and communion with the best representative people from those countries into which he had never penetrated, and whose life and thought had hitherto remained remote and devoid of all vividness, if not of reality.

Physical culture is also not neglected. On Saturday afternoons and Sundays all forms of sport are cultivated, and the men, released and off duty for the time, find refreshment in practising them at odd moments. Each nation has introduced its own games and sports, and most have found favour among all. The Germans, Swiss, and Swedes have chiefly developed gymnastics, for which a suitable precinct and implements have been supplied. The English have initiated their colleagues into football, cricket, and golf. The Americans have created much interest in base-ball, which threatens to supersede cricket, as it does not require so much time. Lawn-tennis was played from the outset. Spaniards have recently taught the interesting Basque game of *palota*. Fencing and even boxing are practised in the evening. But, with the clear waters of the Bay at the very door, rowing has been the most popular pastime. The regattas on holidays cause great excitement in the neighbourhood. By a correct instinct, however, the crews are never formed on national lines ; but, as far as possible, grouped by sections and gangs. This applies also to the matches in other games. The keenness of section pitted against section, and the *esprit de corps* (spreading to the workmen as well) thus elicited and confirmed, have entirely replaced national emulation.

An incident illustrative of the *genius loci* was the departure of the veteran Professor Baumann, who had been an active member of the staff from the beginning of the work. He was looked up to by all, not only for his deep learning and eminent

achievements in scholarship, but also for his pure and honest character and the simplicity of his kindly demeanour. His tolerance, geniality, and, above all, his considerateness and helpfulness towards the younger and humbler members of the staff, made him the most popular and beloved figure of the community. In appearance as well as mentality he was a well-balanced combination of the type to which a Mommsen belonged, softened and mellowed by the gentleness and kindliness, the big and good lines, of Heinrich Brunn. He marks the splendid survival of the true German *Gelehrte* of old days, thorough in learning, unflinching in laborious concentration on work, and ardently, though unostentatiously, following the purest and the highest ideals. Baumann belongs to a type when *Streberthum* was as unknown a term in the German language as the frame of mind was in the lives of its scholars and men of science.

When health and duties at home called him away, it was with genuine grief that he left the work in which he was so enthusiastically concerned, and with universal sorrow that the news was received among all members of the staff.

A farewell dinner was given to him by the whole staff, present on that occasion in full numbers. The speech, which he made in response to the laudatory words of the Chief, was delivered in excellent Italian, concise in meaning and finished in form, sincere in the directness with which it conveyed the truest conviction, free from all rhetoric, so that the slight trace of German accent was entirely forgotten, and all who had the privilege of hearing it were so deeply impressed that the words will remain with them for the rest of their lives. He surveyed the whole of their work, and ventured to give a forecast of its total and ultimate results. Impressing upon his audience the specific nobleness of the task before them, he dwelt upon the supreme and inalienable claims of the search for truth among all human endeavours—truth in and for itself. "When truth is the aim, nothing is too high, nothing too low to merit our

greatest and most sustained efforts in the finding of it. An ant-hill religiously studied has the same justification as the exploration of the Himalayas ; the microscope applied to the smallest organic speck may lead to the loftiest truth as much as the telescope which reveals infinite worlds of planets. But at one period and among a certain definite group of human beings one sphere of inquiry may call more loudly and with greater claims for our attention and active sympathy than another. 'Charity begins at home' applies to the life of man's intellect, to the community of science as well as to social life. For us who are essentially the inheritors of Western civilisation, the great past of the ancient classical world, of Hellenism, lies nearest to the hearthstone of our earthly abode ; and, above all other periods of history, above all other achievements of man's past, this is the one which it is our duty to restore to the life of pure knowledge and science, to make our own, and to revive the best that ever lives in its spirit. That is what we are here for. Forgive me," he continued, "if I add but one word more which may seem to lie beyond the limits of our immediate work. I am not a preacher, I am a humble worker in the cause of truth. I am neither a man of the world nor a politician ; yet, as I am old and most of you are young, let me impress upon you one great lesson I have learnt here and shall take away with me to impart it to my friends at home. It is the first lesson preached and lived by one who stands as the spiritual father of the greatest of Western religions : the love of man to man, or rather of good and noble men for each other, irrespective of race, of country, of class, but united by their admiration for what is best in life and in the world—by their ideals.

"What we have actually—not in theory or in mere words—learnt, what we have experienced, felt, lived through, until it becomes a conviction, a fundamental emotion in our conscious existence, is to appreciate and to value and to love those whom we never had the opportunity of really knowing before.

National differences—above all, national prejudices—have vanished between us, based as they were on ignorance.

“This is one of the great lessons which our common work has brought in its train, as an additional gift, perhaps the most precious which has here been bestowed upon us. I am deeply grateful for it. Let every one of us as we go home teach it to our children and our friends, and, perhaps, from this small focus there may spread a warmth and a glow all over the world which will be a blessing of peace to mankind.”

APPENDIXES

APPENDIX I

DOCUMENTS¹ RELATING TO THE INTERNATIONAL SCHEME OF EXCAVATION, 1903 TO 1907

LETTER FROM LORD KNOLLYS, 1903

SANDRINGHAM, NORFOLK,
December 28, 1903.

MY DEAR PROFESSOR WALDSTEIN—I have submitted your letter to the King, who is much interested in your proposed scheme to carry out excavations at Herculaneum.

He will not, however, be in London for some little time; independently of which, he does not think there would be any practical use in his seeing you until you are able:

1. To tell him what would be the probable cost of the excavations.
2. Whether the Italian Government would agree to their being made.

His Majesty would suggest that on both of these points you should consult with Mr. Neville Rolfe, the British Consul at Naples.

With every good wish for the New Year.—Yours very truly,

KNOLLYS.

LETTER FROM PROFESSOR MERCALLI, 1904

NAPOLI, 18 aprile 1904.

CHIARISSIMO SIG. PROFESSORE—Lo spessore della roccia che ricopre Ercolano varia da 21 a 34 metri (Hamilton).

La roccia è *tufacea* come quella di Pompei, ma più compatta e più omogenea. Tuttavia c'è una stratificazione; poichè il Lippi potè distinguere *nove* varietà di tufi sovrapposti gli uni agli altri. Al

¹ For all the private letters here printed permission to publish them has been obtained from the writers.

presente non si può verificare, se queste osservazioni del Lippi sono esatte, senza eseguire scavi. Ma è certo che la parte più bassa è costituita da tufa a elementi più fini (cenere), mentre la parte superiore è un *tufo granulare* gialliccio con elementi più grossi (lapillo).

Vicino agli scavi, i tufi sono ricoperti, non da per tutto ma in diversi punti, dalle lave del 1631.

Io non sono pratico di scavi archeologici; ma mi sembra che qui sarebbero possibili e non molto costosi degli *scavi in galleria*.

Se desidera altri chiarimenti ch'io posso darle, mi comandi liberamente.

Aggradisca i sensi della mia alta stima e mi creda della S.V. dev.

GIUSEPPE MERCALLI.

LETTER OF AUTHORISATION FROM THE MINISTER OF PUBLIC INSTRUCTION, ORLANDO, 1904

MINISTERO DELL' ISTRUZIONE, IL MINISTRO,
ROMA, 21 aprile 1904.

ILLUSTRE SIGNORE—Stamane ho avuto il piacere di essere informato da Lei del grandioso Suo disegno di promuovere, sotto il patrocinio di S.M. il Re d' Italia e di altri Capi di nazioni, una iniziativa mondiale per esplorare completamente Ercolano.

Da tanta impresa, se attuata, la scienza, la storia, l' arte potranno trarre vantaggi incalcolabili.

All' ardito Suo progetto io fo plauso, e faccio voti che la grandezza e la difficoltà dell' impresa non ne impediscano l' attuazione; e che questa Italia, la quale apre le sue braccia all' amplesso del mondo, possa rivedere al sole le vestigia di quell' antica città da cui uscirono opere cotanto mirabili.

Accolga, illustre Signore, le espressioni della mia particolare stima.

Il Ministro

ORLANDO.

All' Illustre Prof. Carlo Waldstein,
Grand Hotel, Rome.

FIRST NOTICE IN *THE TIMES*, 1904

PROPOSED EXCAVATION OF HERCULANEUM

(*The Times*, April 23, 1904.)

ROME, April 22.

An archaeological undertaking of a most important character is, I learn, about to be set on foot—namely, the complete excavation of Herculaneum. It is proposed that this vast work should be carried out by the co-operation of Italy with all civilised countries, and that there