

of the accounts of them, but a copper-lead-zinc compound, in which the proportions of the three elements vary very much. Its analysis has consequently thrown little light on the source whence the metal was obtained.

The process of manufacture was undoubtedly that known as *Cera perduta*, in which the object is first modelled in very fusible wax. The model is then overlaid with finely levigated clay, and built up to a sufficient thickness. Through an orifice, afterwards made in the clay, the wax is melted out, and the molten metal run into the vacuity. By this process each article requires a model for itself, and only one casting can be made from one mould.



FIG. 3.

As the present natives of Benin are incapable of producing, at the present day, any works approaching these plaques and statuettes, it may be that the art was brought to the West Coast Hinterland by some European trader, prisoner or resident, who, observing the skill of these people in the modelling of clay figures, such as the Fantee women fashion, may have instructed them how to do the same in wax, and how by overlaying the model with clay to finally reproduce it in metal.

It is possible, on the other hand, that their knowledge of founding was derived from purely African sources. The ancient Egyptians knew how to cast in bronze, in which there was, however, no zinc. The Benin upper

classes are not negroid, their features are regular, and their skin olive-coloured. It seems not improbable, therefore, as another explanation of the presence of such high works of art in Benin, that many centuries ago the city may have been occupied by an offshoot of the same central Soudan race, with the leaven of Abyssinian or Egyptian influences among them, as now occupies Nupe, a few hundred miles further north; but that through intercourse with the debased coast tribes, they became demoralised and degenerated into their present low civilisation. The metal work discovered in the city may, therefore, be the relics of a former higher civilisation; or they may, as Commander Bacon has suggested, have been the spoils of some campaign, kept as fetishes. When, however, their full history is elucidated, an interesting and unsuspected chapter in the history of West Africa will undoubtedly be brought to light.

THE PROPOSED UNIVERSITY FOR BIRMINGHAM.

THE movement started in Birmingham fifteen years ago for the establishment of a University in the Midlands has been growing so steadily in energy and in volume that the promoters feel justified in taking definite steps for the accomplishment of their object. The first stage of operations was reached last year, when the College founded by Sir Josiah Mason in 1880 was incorporated by Act of Parliament under a new constitution, and received the new name of "Mason University College." An important step forward was taken last week, July 4, when the first public meeting in favour of the proposal to create a University was held in the Council House, under the chairmanship of the Lord Mayor of Birmingham, and was attended by Mr. Joseph Chamberlain, M.P., and an influential gathering. The proceedings must have been in the highest degree satisfactory to the promoters, for not only were some interesting speeches delivered and much enthusiasm displayed, but a very substantial proof of the earnestness with which the scheme is being taken up by the inhabitants was afforded by the announcement of promised donations to the requisite funds of about 96,000*l.* The next step will be the issue of a public appeal for further donations; and it is confidently expected that the sum of 250,000*l.*, which it is estimated is necessary to complete the equipment of the College, to found new chairs, to supply additional buildings, and to provide for the administrative machinery of the University, will before long be subscribed.

The proceedings at the recent meeting included the resolution, "That in the opinion of this meeting it is essential that in the interest of the city and the Midland district generally, a University shall be forthwith established in Birmingham." Mr. G. H. Kenrick, who moved this resolution, is a manufacturer at West Bromwich, employing a large number of men; and is himself a donor of 10,000*l.* to the fund. He has for many years taken a prominent and honourable part in promoting elementary and technical education in the city; and his opinion on such a question, whether as a man of business or as a school manager, is entitled to respectful attention from his fellow citizens. After referring to the influence which the existence of the University would have upon the training and education of teachers, Mr. Kenrick went on to give his view as to the intimate relation which must be established between the University and the industries of the district; and it is to be hoped that both parties, the professors on the one hand and manufacturers on the other, will be careful to note the very sensible observations of the speaker upon this topic.

No man can now stand up and say that industry can get on very well without science. That idea has been almost given up, but a more dangerous one has arisen in its place.

Some manufacturers know quite well that their industries are dependent upon scientific knowledge; but they have got into the way of saying that they do not want people around them knowing too much, and that when they want a scientific man they can send for him. But a man of science called in on such occasions is not always able to prescribe the exact remedy for the particular disease concerning which he is consulted. This is not to be wondered at, considering that industry has done her best so long to keep science at a distance, that science has pursued her own path independently with small direct reference to the needs of industry.

Prof. Tilden seconded the resolution, and took the opportunity of pointing out that, though in the past there had been much prejudice in the minds of British manufacturers against a University training, because they had been disposed to regard it as all very well for clergymen and schoolmasters, but useless in practical affairs; nevertheless a University rightly organised and rightly conducted might be made a most practical kind of thing.

He urged upon the meeting the importance of noting what is being done in other countries, especially the United States of America and Germany, and pointed to the fact that in these countries not only are Universities numerous, but are influential and richly endowed; while the directors, managers, and even foremen in manufacturing concerns are almost entirely men who have received a complete scientific education, and have taken a degree in one of the Universities, or if not in the University in one of the polytechnics or technical schools. The polytechnics of London and the municipal technical schools in this country are institutions which have done, and are doing, good service; but there are indications that the public do not realise how different they are from their prototypes on the Continent, partly in consequence of the inferior quality of the teaching staff, and partly by reason of the fact that the instruction given in such institutions in this country is only partial, and does not demand the devotion of the whole time and energy of the student. As to the influence of the Universities in England, it was obvious that the ancient Universities, though perhaps partly alive to the question, are incapable of providing what is wanted by industry. A great opportunity is now at hand for creating a University of a new type, in which all that is best of the old and the new can be associated together; not merely a large public school, but a place for men and women, a place for study and also eminently a place for research, and a place where that predominance of examinations which unfortunately prevails so generally in most British universities would be got rid of. In constituting her University Birmingham would do well to emphasise the claims of science in its application to industry by establishing a faculty of "technics" in which "applied science" should be put on an equality, so far as honours and rewards are concerned, with the faculties of arts and of pure science. Mr. Chamberlain supported the motion in a speech which passed in review the course of events which had led up to the movement then inaugurated, and made a strong and effective appeal to local patriotism which had done so much in the past, which had made Birmingham what it was, and which he believed would now set the crown upon their educational work.

The Bishop of Hereford, in moving for the formation of a general committee, made an interesting speech which was listened to with all the more attention that the Bishop of the diocese had endeavoured to throw cold water on the scheme by pointing to the spiritual destitution of the district, and indicating his opinion that this ought to be remedied before other schemes were brought forward. The Bishop of Hereford, however, pointed out that not only was it impossible to put a stop to a great tidal movement which arose out of civic patriotism, but that the work in which they were engaged was actually

more likely than any other to help the growth of that spirit in every denomination in the city which would never rest till the spiritual needs of the community were adequately supplied. The Bishop in concluding referred to Bristol and its University College, of which he is President.

At one time it seemed probable that the Birmingham project would take the shape of a federation of colleges among which Bristol would be included. That idea seems now to be abandoned. But the success of movements of this kind seems to be dependent chiefly upon financial support; and if Birmingham brings her scheme to completion it may be hoped that this will serve as a stimulus to other cities to follow her example, so that at some future, not far distant, time, not only will London have a University worthy of her great position, but every large centre of population will be occupied by a seat of learning at once the guide and helper of local industry and a focus of the light and culture of the world.

THE NATIONAL MUSEUM OF NATURAL HISTORY.

THE imminent retirement of Sir William Flower after his long and extremely efficient service as Director of the Natural History Museum, is an event of very serious importance to the progress of natural science in England. At one time the national collection, like any little country museum, was a jumble of curiosities and antiquities, the stray result of capricious generosity. As knowledge grew, the various departments became specialised, and in the middle Victorian period, thanks to the prescience of Owen, and the active interest of the Prince Consort, a prodigious dichotomy was effected. The collections relating to what are called by a well-known if illogical term, the Natural Sciences, were separated from the sculptures of Assyria and Greece, from the papyri and coins, the remains of the arts and manufactures of earlier civilisations, and were lodged in the magnificent palace in South Kensington. They were placed under the care of a small army of specialists—zoological, botanical, geological and mineralogical—and these were directed by a single controlling general, directly responsible to the nation through the Trustees and the Treasury. The great abilities of Owen, and the coordinating genius of Sir William Flower, rapidly made the British Museum of Natural History an institution of world-wide importance. Scientific men from provincial England, from Scotland and Ireland, from the Colonies and from other nations, came to regard it more and more as the greatest of centres for the elaboration of all knowledge in natural science depending on the presence, classification, and display of material specimens. As the reputation of the Museum has grown, so also has grown the work done and to be done in it. Collectors from all parts of the world lavish on it or offer to it for sale the best of their specimens; naturalists bequeath to its care their treasured collections from a thousand sources, and so material for scientific work accumulates. The members of the staff become specialists of extraordinary knowledge; many of them, junior and senior, are experts of European reputation in their own departments. Among all the activities of our great nation, the scientific activity of the Natural History Museum takes a great and increasingly great place.

It is obvious that as this organism grows in activity and specialisation, the position of its Director becomes more arduous and important. The Director of the Natural History Museum should be the leader of the natural sciences in the Empire. He has the opportunity of influencing both society and the Legislature by personal contact and intercourse. He should be the channel through which the scientific workers of the nation make known their needs and aspirations. He should have