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## **B Representation of Parasitic Diseases and Parasites in Early African and pre-Columbian American Art**

### *General Statements*

Within the frame of this publication even a very brief outline of early African and American art cannot be given. Only a few points which have a direct bearing on the subject under discussion will be mentioned.

Among the works of art – sculptures and paintings – created in the course of time in many countries, there are comparatively very few representing parasitic infections and diseases due to parasites. The obvious explanation is that certain diseases or pathological conditions such as paralysis of facial muscles, club-foot, tumors, blindness are easily noticed and were reproduced. On the other hand, most parasitic diseases or infections have no external characteristics which were widely known and could be shown in a work of art. When, however, external characteristics existed in parasitic infections, they were, similarly to the case of non-parasitic diseases, utilized by the artist for reproduction; examples are elephantiasis, gangosa, uta and syphilis.

### *I. Early African art*

Representations of parasitic diseases in the art of ancient Egypt and in early African art south of the Sahara are discussed separately on account of the numerous fundamental differences.

#### **A. Egypt**

There are a number of statues and reliefs showing signs of non-parasitic diseases and pathologic conditions, for example Pott's disease, atrophy of leg muscles, umbilical hernia, achondroplasia, blindness (many illustrations in GHALIOUNGUI and EL DAWAKHLY, 1965). Representations of parasitic infections, on the other hand, are very rare.

### *Different Infections*

#### Schistosomiasis

GHALIOUNGUI, 1962, 1963, as mentioned before, described reliefs of two tombs of the Ancient Empire in Sakkarah with figures showing certain pathological changes which GHALIOUNGUI believes are probably caused by schistosomiasis (see chapter on blood-flukes).

#### Elephantiasis

In the Egyptian Museum in Cairo there is a statue in painted sandstone of Pharaoh Mentuhotep III (1998–1991 B.C.) of the XIth dynasty with a great symmetrical enlargement of both legs. As elephantiasis usually does not affect both legs equally, it is doubtful whether the statue represents a case of elephantiasis as assumed by RIAD, 1955, p. 62.

#### Tick infestation

D. R. ARTHUR, 1965, published and illustrated what is possibly the oldest record and the oldest figure of ticks. It concerns a fragment of the head of a hyaena-like animal from an Egyptian tomb dating from the eighteenth Dynasty, about 1500 B.C. ARTHUR pointed out three excrescences on the inside of the ear and gives reasons for considering the possibility of these excrescences representing ticks. (For additional details, see chapter on ticks.)

## B. Africa south of the Sahara

The literature on African art has become very large and only a few publications with numerous bibliographic references are given in the following: ELISOFON and W. FAGG, 1958; GABUS, 1967; GOLDWATER, 1964; HIMMELHEBER, 1960; HOLAS, 1960; LEUZINGER, 1959, 1963; PAULME, 1956; WILLETT, 1967.

#### *General remarks*

Regarding statues, two different ways of representation can be distinguished:

- a. The *pole style*, a kind of cubism, essentially a composition of spheres, cylinders and cones. By the pole style it is possible to attain the greatest power of expression by means of the simplest forms and a minimum of surfaces. The figure gives the impression of a compact block and is constructed from stereometric forms.

b. The *round style*, a realistic and expressive style. The artist, however, is not merely copying nature. Everything essential is accentuated in an expressive way, the natural proportions are disregarded, the head is frequently oversized<sup>1</sup>.

Frontal posture is the rule. The figures do not show movement to a great extent. They appear generally immobile but often with a certain dignity, especially the ancestral statues.

Some sculpture is highly abstract, for example that of the Bakota in Central Africa. Sculpture of the Yoruba and Eko tribes, on the other hand, is more naturalistic. Essentially different are the terracotta heads of the Nok culture and the bronze heads of Ife.

The great majority of African figures and masks are wood carvings. The single figure is shown standing, sitting or kneeling. The figures vary in size from half life-size to small statuettes which were kept in the family home. The larger figures were placed in shrines or on graves.

The ancestral figure is of special importance. It is the dwelling place of the spirit of the dead who can protect and assist, and also punish a person. The ancestral figure requires respect, it receives offerings and by incantation and magic, it is supposedly possible to communicate with the dead.

Other figures represent great chiefs of the past, mythological heroes and demons.

‘*Fetish*’ figures are regarded as having magic power in themselves. They can protect and help the owner but also attack an enemy. The fetish is usually a small wooden figure which may be decorated by painting, by glass beads and feathers. Some fetish of the Senufo are covered by a piece of cloth so that only the feet of the wooden figure are visible, feathers are fixed on the top of the head. The power of the fetish is often supposedly contained in some magic substance placed in a hole in the fetish figure or put in a small sack attached to the figure. The owner tries to please the fetish by rubbing it with palm oil, by painting it or by giving it various offerings.

‘*Amulets*’ may be of very different shape and material; they are chiefly worn for protection.

‘*Masks*’ play a very great rôle in the life of the negroes. Most African masks are carved from wood. Occasionally other materials were used; metal masks, chiefly of bronze, were used by the Senufo. Among tribes which are famous for the carving of masks

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<sup>1</sup> The remarks on style are based on E. LEUZINGER, 1963, pp. 20-23; see also VON SYDOW, 1930.

are the Baule, Guro, Senufo, Dan and Kran in the Ivory Coast, the Bambara in Mali, the Ogowe River and Cameroon tribes and the Bayaka and Bapende in the Congo. (See: HARLEY, 1950, and HIMMELHEBER, 1960.)

The design of the mask may be abstract or realistic, it may have been originally determined by magic and myth or more rarely by symptoms of diseases. The masks are often painted brown or black, with or without additional colours. Ibo and Ogowe tribe masks, representing dead people, are frequently white. Masks may be overlaid by various materials.

Different from the statues with their static quiet dignity, the masks have an underlying dynamic quality. They are worn with a gown which covers the bearer completely. They are full of magic power and when worn at ceremonial dances are regarded as being the spirit of the ancestor or of the demon which they represent. Masks should inspire fear. The bearer after dancing and moving in various ways often speaks in an unnatural voice, supposed to be that of the spirit.

Masks are used for many purposes; here we are only concerned with their relation to medicine. Masks with realistically represented signs of a certain disease are regarded as being able to cause and to cure it and are therefore used for treatment. Unrealistic masks likewise are supposed to cure diseases by magic (note 1).

A person wearing a mask and gown should neither be recognized nor touched. Masks, when not used, were usually kept in a certain place under the custody of a respected number of the community, frequently a blacksmith.

From the foregoing it will be understood that for our purpose, the early representation of parasitic diseases, statues in a realistic style and likewise realistic masks are of special interest.

Representations of parasitic diseases in Negro art in as far as they are known at present date from the time of the Nok culture (c. 500 B.C.—A.D. 200) to the twentieth century.

### *Different Infections*

#### *Gangosa, Nasopharyngitis multilans (tertiary yaws)*

The mutilations of nose and mouth due to tertiary yaws were reproduced in terracotta heads and wooden masks. A terracotta head, 10.2 cm high, is kept in the Ife Museum, Nigeria (plate V). It has been dated provisionally as belonging to the 12th–14th centuries and resembles some of the small terracotta heads from

Esmeraldas, northern Ecuador, representing face mutilations caused by American leishmaniasis (plates II, III, and IV).

The most impressive representation of gangosa in African art is found in realistically carved masks of different regions on the West African coast, especially in southeastern Nigeria (plate VI). They have been described in some detail by SIMMONS, 1957, from the Ibibio tribe in the Ikot Ekpene district of the eastern region of the Federation of Nigeria. Masks showing gangosa lesions are mentioned also by STEINMANN, 1943, by HARLEY, 1950, and by HIMMELHEBER, 1960.

In a larger collection of these masks, it is not difficult to trace the different stages of the mutilations due to gangosa. There are also unrealistic masks apparently inspired by gangosa (plate VII).

### *Sleeping sickness – trypanosomiasis*

In endemic regions the natives knew for centuries by experience that sleeping sickness was nearly always fatal. Amulets were worn for protection against sleeping sickness. The Wellcome Historical Medical Museum in London has an amulet made from an iron sheet, folded and ridged to imitate the tip of an antelope horn, supposed to have been made by the Bapende.

On plate I we illustrate an unusual wooden Fetish statuette from Gabon used for magic treatment of sleeping sickness. The figure is a realistic representation of a very emaciated woman.

(The figure has already been reproduced by HOEPPLI and LUCASSE, 1964).

### *Elephantiasis – *Wuchereria bancrofti* infection*

We give representations of elephantiasis of the scrotum from different periods.

a. The Museum of Jos, in Northern Nigeria, has a terracotta statuette (torso) with a considerable enlargement of the scrotum (plate IX). This figurine is very simplified and belongs to the Nok culture (c. 500 B.C.–A.D. 200). The area in which this culture has so far been found lies across the Niger and Benue valleys mostly north of their confluence (B. E. B. FAGG, 1959 [J. hist. Soc. Nigeria, 1, No. 4]).

b. The torso of a terracotta statuette of a fettered man with great enlargement of the scrotum is kept in the Museum of Ife in Nigeria (plate X). It is 28 cm high and probably contemporary with the naturalistic art of Ife, provisionally dated 12th–14th cen-

turies. The fetters of the legs are lying over the enlarged scrotum. They are formed like flat-sectioned metal strips, almost certainly iron. The figure is from the grove and shrine of Osongongon Obamakin (information kindly supplied by Mr. B. E. B. Fagg and Mr. F. Willett). It has been reproduced by WILLETT, 1967, plate 40. He gives on figure 7, page 63, also the picture of a hand and a foot from a terracotta sculpture of a person with elephantiasis.

c. Yoruba bronze<sup>2</sup> figure in the British Museum of a sitting man, 20 cm high, in the style of Abeokuta with elephantiasis of the scrotum (plate XI).

The figure is about 80–100 years old. A practically identical bronze figure is kept in the Wellcome Historical Medical Museum in London.

d. Ashanti goldweight, 6 cm long, brass. A naked beggar with great enlargement of the scrotum is sitting with outstretched legs on the ground; the left arm is broken off at the elbow; a large bowl is standing between his feet. Pitt Rivers Museum Oxford (Plate XII). For Ashanti Goldweights, see M. WEBSTER PLASS, 1967 (note 2).

e. Treatment of elephantiasis scroti. Group of three small brass figures, size 7×8 cm (plate XIII). A man with enlarged scrotum is standing above a kettle. His right arm is held by his wife, the left one by a male person, probably the medicine-man. This group of small brass figures was found in the local market in Foumban in the Bamun area of Cameroons. Collection of Dr. L. J. Bruce-Chwatt, London (Modern).

### *Worm infection*

Fetish statuette used for treatment of worm infection (plate XIV). It is a conventional figurine from the Congo in the pole style.

### *Delousing*

A sitting woman is holding her child on her left arm (plate XIX). The child is evidently occupied with picking lice from the mother's head. Height 56 cm. North-western Baluba, eastern Congo. The statue belongs to the Rietberg Museum in Zurich and has been reproduced in: African Sculpture, a Descriptive Catalogue by E. LEUZINGER, 1963.

<sup>2</sup> Bronze: Most of the African 'bronzes' are not bronzes in the strict sense of the word, but are 'brass' in various compositions, or more rarely copper (see WILLETT, 1967, p. 55).

### *Ticks*

A highly simplified terracotta tick dating from the Nok culture (c. 500 B.C.–A.D. 200) is kept in the Museum of Jos in Nigeria (plate XX).

The publication by D. R. ARTHUR, 1965 (dealing with art in Egypt) has already been mentioned. The author found three excrescences on the ear of an animal head in a tomb of the eighteenth Dynasty (about 1500 B.C.) and considers the possibility that they represent ticks.

### *Addendum*

#### *Terracotta pots to hold medicine powder*

Pot to hold medicine powder for the treatment of scabies (plate XXI). These pots are made by the Cham people in Bauchi Province, Northern Nigeria. The powder is put in the pot and blown by the medicine man on the patient. The pots have different shape for different diseases and are still made at present (note 3).

#### *Representation of slaves*

Elephant tusk with carvings of slaves secured with chains; spiral arrangement of the carvings, made probably between 1800–1850 for some foreigner (plate XXII). British Museum, London (see also FAGG, FORMAN and FORMAN, 1959).

Bronze-statuette of a naked young negro with hands fettered behind his back (plate XXIII). Alexandrian art, Egypt, second century B.C. Musée du Louvre, Paris.

Numerous illustrations of African slaves are found in Beardsley. *The Negro in Greek and Roman Civilization*, New York, 1967 (first published 1929).

### *II Early American art*

Only Mexico, Ecuador, and Peru are considered.

Reproductions of parasitic diseases and parasites in Mexican art are very rare. We mention a mural painting showing skin lesions, possibly due to syphilis, yaws, or exanthematic typhus and reproductions of fleas in terracotta and stone.

In Esmeraldas, the northern province of Ecuador, many small terracotta heads and also statuettes were found, some with realis-

tically reproduced mutilations of the face probably due to leishmaniasis.

Peruvian ceramic art of the well known Mochica pottery (note 4) has created most interesting reproductions of people and various scenes of life of the pre-Inca period, c. A.D. 400–900. Among the anthropomorphic vessels – 'Huacos' – there are numerous specimens showing different pathological conditions and diseases including parasitic infections (DIETSCHY, 1938, pp. 2012–2017; MARTÍNEZ DURÁN, 1964, pp. 87–91).

### *Different Infections*

#### *Uta – American Leishmaniasis<sup>1</sup>*

American leishmaniasis in different forms existed from Mexico southward to the northern part of Argentina with numerous cases of *uta* in Peru. *Uta* was already described in 1571 by PEDRO PIZARRO (1917).

Huacos showing destruction of nose and lips in various stages may be seen in a number of museums in America and Europe. They attracted special attention in the last decade of the nineteenth century and caused a considerable controversial literature. Some huacos possibly represent punitive mutilations. (See ASHMEAD, 1898, 1900, 1901 and the chapter on cutaneous leishmaniasis.)

A Peruvian huaco with changes which may be regarded as due to *uta* is illustrated on plate IV.

Destruction of the nose in a terracotta figure and a small terracotta head from Esmeraldas, representing leishmaniasis, are shown on plates II and III.

#### *Bubas: Syphilis – Yaws*

A fragment of a mural of about A.D. 200–300 in a ruined building at Atetelco–Teotihuacán shows a human figure with deformed legs and dark spots over the entire body (plate VIII). These spots apparently represent an exanthema or multiple ulcers and are the reason why the figure is known as the '*Buboso*' among the local people.

As smallpox and measles were introduced into Mexico only in the first half of the sixteenth century, the picture of the '*Buboso*' which was painted between A.D. 200 and 300, cannot represent

<sup>1</sup> Espundia closely related to *uta* does not require a separate discussion in as far as representation in art is concerned.

these two diseases. Typhus<sup>2</sup> was endemic at the time of Cortés; we know that several severe epidemics of not determined diseases existed in Mexico, centuries before the Conquest and matlazahuatl (typhus) may have been one of them.

It is impossible to make a differential diagnosis from the highly stylized mural which could represent exanthematic typhus, syphilis or yaws. The picture is of unusual interest. Should future research show that typhus can be excluded, the mural might be one of the earliest representations of *bubas*, a treponema infection (note 5).

It should be added that WEISS and GOLDMAN, 1954, described from two pre-Columbian anthropomorphic ceramic vessels ulcerative lesions in the upper third of a leg which the authors regarded as possibly representing syphilitic gummata.

### *Ascaris*

The *Historia General de las Cosas de Nueva España* by FRAY BERNARDINO DE SAHAGÚN contains in the *Codice Matritense del Real Palacio* two pictures (plate XV), one of a man and the other of a dog, discharging large intestinal worms, apparently Ascaris, as far as one can judge from the rather primitive illustrations (note 6).

### *Elephantiasis – Wuchereria bancrofti*

A small clay figurine found together with six others buried under the floor of a sanctuary in a temple of about A.D. 500 in the ruins of Dzibilchaltun (northern Yucatán) shows enlargement of the scrotum as far as one can judge from the photographic reproduction in the publication of ANDREWS, 1959 (see chapter on elephantiasis). All seven figurines exhibit some deformity.

### *Nigua – Sandflea infection. Tunga penetrans*

Representations of *Tunga penetrans* infection in Mochica pottery are very rare. At present the writer knows only of three huacos showing people examining the soles of their feet with small holes wherfrom sandfleas supposedly have been removed.

The first illustration of such a vessel was given by TELLO, 1924, p. 65. Two similar vessels from Pachacamac and Marque, Peru,

<sup>2</sup> Exanthematic typhus was called by the Spaniards 'tabardete' or 'tabardillo'; the Indian name was 'matlazahuatl'.

are kept in the American Museum of Natural History in New York. They have already been reproduced by MOODIE, 1923, and are illustrated here on plate XVI.

### *Fleas*

A large pre-Columbian terracotta flea is kept in the private Rafael Larco Herrera Collection in Lima, Peru<sup>3</sup>.

The Museo de Antropología e Historia in Mexico D.F. possesses several reproductions of fleas. The flea shown on plate XVII, fig. a, is of terracotta of about A.D. 300–800. Plate XVII, fig. b, shows a larger flea in white stone of about A.D. 1200–1500.

### *Louse infection – Delousing*

A Mochica huaco belonging to the Museo Nacional de Antropología y Arqueología in Lima is illustrated on plate XVIII. It shows a woman with large lice on her gown. Her protruding canine teeth indicate that the lice will be killed. This vessel was already illustrated by TELLO, 1924, p. 24.

The increasing interest in pre-Columbian American art has stimulated a considerable number of publications. We mention here only: CHRISTENSEN, 1955, LEHMANN, 1959, and DISSELHOFF and LINNÉ, 1960. D'HARCOURT, 1939, dealing with medicine in ancient Peru, included references to works on the representation of diseases in art. These four mentioned publications have large bibliographies.

### *Discussion*

In comparing early African and pre-Columbian American art regarding representation of parasitic infections and parasites we find some terracotta sculptures with reproductions of face mutilations due to gangosa and uta respectively in very similar execution.

On the other hand, African masks reproducing gangosa have no counterpart in American masks regarding American leishmaniasis.

The writer has not found figures showing elephantiasis of the scrotum in Mexico, Ecuador and Peru such as were produced by African artists since the time of the Nok culture, about 2000 years ago<sup>4</sup>.

<sup>3</sup> The writer regrets that the owner did not allow to take a photograph.

<sup>4</sup> See chapter on elephantiasis (Dzibilchaltun).

It has been mentioned before that elephantiasis has not been described by the early Spanish chroniclers dealing with diseases of the native population shortly after the Conquest. Some modern authors therefore doubt that *Wuchereria* infection existed in Central- and South America before the arrival of the Spaniards with their slaves (ASHBURN, 1947).

Certain ectoparasitic infections and ectoparasites have been reproduced by American and African artists. Mochica vessels show pediculosis and nigua infection; reproductions of fleas have been found in Peru (terracotta) and in Mexico (terracotta and stone). On the other hand, a highly simplified terracotta tick of the Nok period was discovered in northern Nigeria, and excrescences on the ear of a hyaena-like animal from an Egyptian tomb dating from the 18th Dynasty (about 1500 B.C.) may possibly represent ticks.

Delousing is shown in an African realistic wooden statue and in Mochica pottery.

The mural of a 'buboso' dating from A.D. 200-300, discovered in Atetelco (Teotihuacán) leaves the question open, whether it represents a case of syphilis, yaws or exanthematic typhus. It is of special interest as it is probably the earliest picture of its kind.

#### *Notes*

1. Masks, both abstract and naturalistic ones, were used for magic treatment of diseases in many parts of the world, for example in Ceylon, India, Indonesia, Brazil, among the Red Indians of North America and Eskimos, in the Altai (Siberia) and in Tibet. The Kobeua in north-west Brazil used a mask in the shape of a blue butterfly which was supposed to represent the demon of malaria and to be able not only to cause the disease but also to cure it (STEINMANN, 1943).

2. In this connection it may be mentioned that negro art has produced various non-parasitic insects. Bronze objects excavated at Igbo-Ukwu, Eastern Nigeria, are decorated with crickets, flies, and various kinds of beetle (FIELD, 1940; SHAW, 1960; WILLETT, 1967). Scorpions and cicadas are represented in Ashanti gold-weights (HIMMELHEBER, 1960; WEBSTER PLASS, 1967).

Regarding American art we have already mentioned the design of a swarm of mosquitoes on Mimbres pottery.

3. Mr. B. E. B. Fagg, in a letter to the author, dated 14th December 1962, quoted with his kind permission, stated the following:

"On the question of the decorated vessels used for medicinal purposes, these are from the Tangale Waja Independent District of the Gombe Division in Bauchi Province and made by the Cham

and Longudu. There is practically no possibility at the moment of ascertaining how far back this pottery tradition of the Cham is likely to go, but in any case it would be very difficult to assume that the specific diseases you mention were related to an absolutely specific type of pottery which would not have changed over the years."

The pots in their different forms are interesting and unusual, but as seen from the quoted letter, cannot be used as evidence that a specific disease existed in the fairly remote past.

4. Mochica is also known as Muchik. Mochica pottery has been found in the main valleys of the north coast of Peru. Mochica style may be regarded as a unified group in which early, middle and late stages are included. The characteristic anthropomorphic huacos are stirrup-spout vessels; outstanding among them are portrait heads.

5. In the *Codex Telleriano-Remensis* patients of the smallpox epidemic of 1538 are pictured covered by black spots. Smallpox was introduced into Mexico in 1519; some years later the introduction of measles followed.

Another disease, 'matlazahuatl', exanthematic typhus, was endemic at the time of Cortés. In the *Codex Magliabecchi* an Indian suffering from matlazahuatl is shown with brown spots over the entire body (SOMOLINOS D'ARDOIS, 1961, plate 3). Typhus was already known to the Spaniards, and the first book of medicine published in Mexico, the *Opera medicinalia* of FRANCISCO BRAVO, is chiefly dealing with typhus.

6. The Sahagún codices are a group of manuscripts written by the Franciscan friar, BERNARDINO DE SAHAGÚN (1499–1590). He arrived in Mexico in 1529 and having mastered the language of the Indians, he devoted many years of his life to the preparation of his work. He obtained personally his information from the Indians and checked his statements very carefully. His work is very accurate and reliable. A detailed discussion of SAHAGÚN's manuscripts was given by GUERRA, 1966. Here it will be sufficient to mention that there are essentially three different manuscripts: The first one written between 1558–1560 is known as *Primeros Memoriales* or *Tepepulco MS.*; the second are the *Codices Matritenses* or *Tlatelolco MS.*; the third one is the *Florentine Codex* or *Tenochtitlan MS.* It should be kept in mind that the various editions show certain differences. Regarding the numerous editions and translations into different languages, the reader is referred to GUERRA, 1966.

Our pictures of a man and a dog discharging large intestinal worms are copied from the facsimile edition of the *Codice Matri-*

*tense del Real Palacio* published by FRANCISCO DEL PASO Y TRONCOSO in 1906 at Madrid. They correspond to the figures on plate XCV with number 341 and refer to the text of chapter V of book XI, section 13<sup>5</sup>.

It may be added that the *Hortus Sanitatis* of JACOB MEYDENBACH, first published in Mainz in 1491, gives a somewhat similar picture of a man in a squatting position from whose anus large worms are passing out.

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