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A WOMAN'S LIFE IN AN AFRICAN VILLAGE (See page 4)

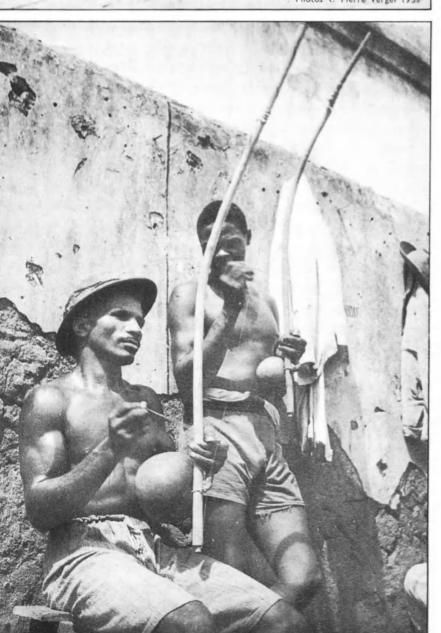
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TRADING BLOWS TO MUSIC

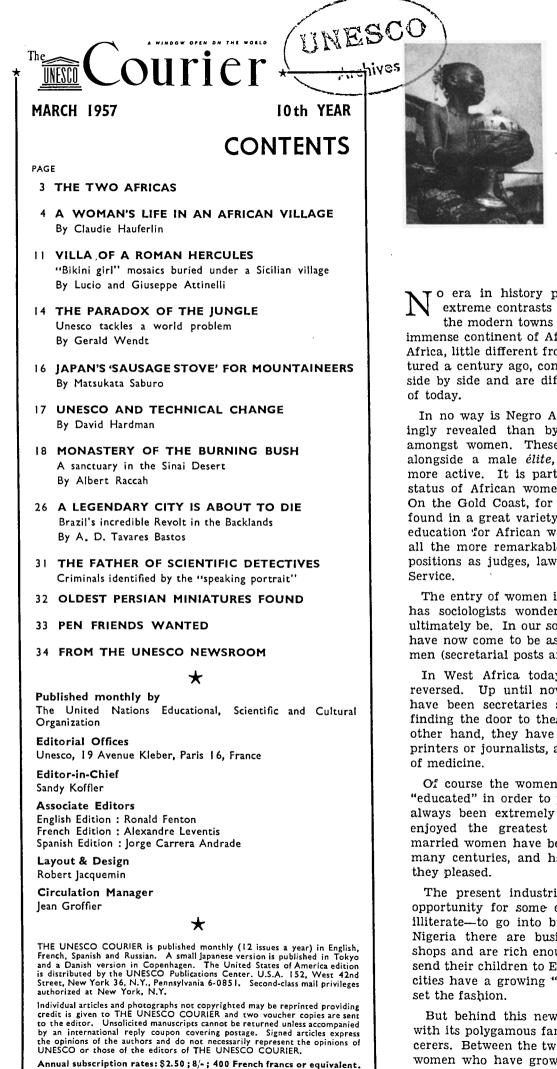








One of the most entertaining spectacles to be seen in Brazil is the capoeirs in which two men engage in a strange bout to the rhythm of music. These performances, greatly beloved by the people of the Northeast, are usually staged as a Sunday distraction. The music is played by three men on instruments called berimbou-long, musical bows fitted at one end with a calabash which acts as a sound-box (left). Sometimes the musician playing this primitive harp holds in his other hand a wicker rattle which he shakes each time he plucks at his instrument, while the spectators sing. The contestants crouch for a moment or two before the orchestra as if to collect themselves and prepare for the bout. Then they go for one another, lashing out blows and throwing themselves on the ground, and go through the motions of a violent struggle in which every action in reality is feigned and carefully timed to the rhythm of the music. Sometimes the "fighters" break off the contest and do a march in dance time or a series of acrobatic feats. (For the story of a far more serious battle in Brazil, see page 26)



(M.C. 57.1.110 A)

The Unesco Courier. — March 1957

COVER PHOTO

Seated on a processional carriage, young girl of Porto Novo, Dahomey, proudly holds the symbol of the realm —a covered chalice with decorative geometrical openings. The chalice represents the unity of all the people of the kingdom of Porto Novo, for only when all hands join to stop up the orifices can it be filled with water. Slung from a chain round the girl's neck is the sword symbolizing the authority of the king. (For story of the women of Dahomey see page 4.) (© Pierre Verger 1957

N o era in history perhaps has ever afforded more extreme contrasts than our own. Side by side with the modern towns now springing up throughout the immense continent of Africa, for example, the traditional Africa, little different from the one our grandparents pictured a century ago, continues to exist. Both live almost side by side and are different facets of the same reality of today.

In no way is Negro Africa's modernization more strikingly revealed than by the swift growth of an *élite* amongst women. These women are taking their place alongside a male *élite*, each year more numerous and more active. It is particularly in West Africa that the status of African women has changed most profoundly. On the Gold Coast, for example, women are today to be found in a great variety of professions. Considering that education for African women is such a recent thing, it is all the more remarkable to see them holding important positions as judges, lawyers, journalists and in the Civil Service.

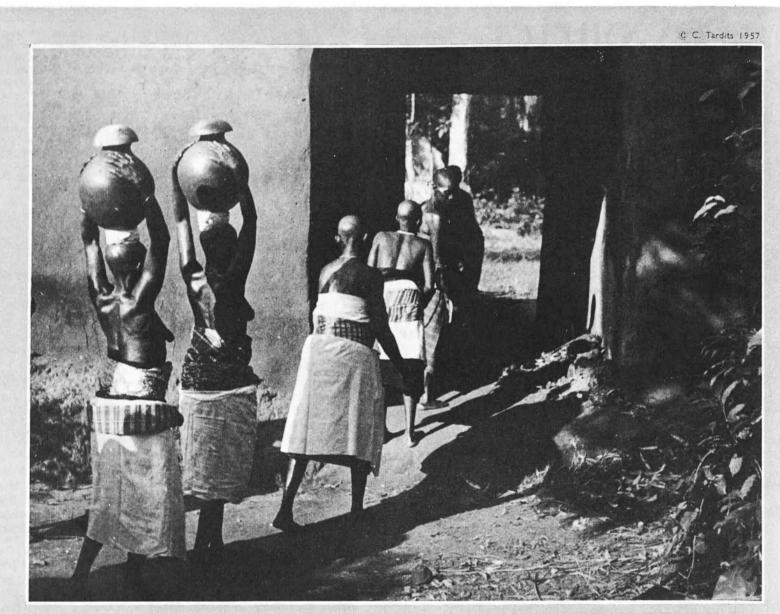
The entry of women into so many new professions now has sociologists wondering what the consequences will ultimately be. In our society there are certain jobs which have now come to be associated with women rather than men (secretarial posts are an example).

In West Africa today some of these roles are being reversed. Up until now at any rate, men, not women, have been secretaries and typists, the girls apparently finding the door to these careers closed to them. On the other hand, they have found no difficulty in becoming printers or journalists, and even monopolize certain fields of medicine.

Of course the women of Africa have not waited to be "educated" in order to play a role in society. They have always been extremely influential, and in some regions enjoyed the greatest independence. In West Africa, married women have been traders in their own right for many centuries, and have disposed of their earnings as they pleased.

The present industrialization of Africa has been an opportunity for some enterprising women—even though illiterate—to go into business on a big scale. Thus, in Nigeria there are business women who run chains of shops and are rich enough to build modern homes and to send their children to England or the United States. Some cities have a growing "smart set" of elegant women who set the fashion.

But behind this new Africa there is still the old one with its polygamous families, its minor rulers and its sorcerers. Between the two Africas there is no hostility. The women who have grown up according to the traditional customs point to the girl "intellectuals" and say: "Now our daughters are showing us the way."



A WOMAN'S LIFE IN AN AFRICAN VILLAGE

by Claudie Hauferlin

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Millions of women in France's African territories went to the polls for the first time last year, thus marking another important step forward in the progress of women's rights. On November 18, 1956, nearly half a century after the first women in Europe won the suffrage, millions of those in Africa reached the same milestone on the road to emancipation. Yet African women in these territories are not newcomers to politics. Widows and mothers of not less than two children have had the vote for the past ten years. They made up about one-third of the electorate at the previous elections in January 1956.

Then, on June 23, 1956, without any protest marches, suffragettes in action or serious political discussions disturbing the peace of African homes, the right to vote was extended to all women in these African territories on exactly the same basis as for women in France. This right became a reality on November 18 when the women cast their votes in elections for the municipal councils of African communes, to which they themselves are eligible for election.

It is still too early to analyse the results and to comment

on the response the women made to their first chance of voting. One thing we do know is that the vast majority were villagers and that most were illiterate. Candidates met this problem by identifying their parties with a colour or a picture. One party used an emblem; another outlined its programme in picture words; people voted "palm tree" or "elephant."

Even in a country like Dahomey where French has been taught for many years—the first schools were opened by missionaries as long ago as 1861—there are still very few educated women. In today's schools boys still far outnumber the girls. Women, therefore, are the guardians of traditions and cling, in far greater numbers than men, to ancestral rites and customs. Only a small proportion of women voters live in modern towns, lead the life of a modern woman or experience her problems. What is she like then, this African woman of tradition who is typical of the vast majority? How does she live? The author of the following article, who spent two years among the women of Dahomey and came to know them well, has attempted to answer these questions. **U** NTIL that warm January morning when I arrived there, Dahomey to me was only a narrow pink or mauve strip squeezed in between Nigeria and Togoland on the patchwork that West Africa makes on the map. Now I know it as a landscape of alternate greens and reds, of green palm trees and fields contrasting with the red tracks and mud villages through which I drove from the coast to join my husband who was on a two-year sociological mission for UNESCO.

I expected a jungle; I found a garden. South Dahomey is a vast palm grove shielding long, straight rows of maize, bean, peanut and manioc fields.

"Dahomey", my travelling companion said to me, "has something of Asia about it. Its population is as cramped as in some of the delta regions of India." Then he added, "Did you know that three to four hundred people are crowded together into one square kilometre in some parts of the country?"

I expressed surprise and asked, "How do they manage to live?"

The answer came forth with a chuckle, "Everything here runs on oil, palm oil. Dahomey's great wealth is its palm trees. When the year is good there's prosperity: the men buy bicycles, get married, have big ceremonies for the dead; the women get new skirts and new jewellery. When the year is bad, no tax money comes in and then there's trouble. Everyone is tied to the palm grove: the men are the owners, do the planting and transporting; the women make the oil and sell it. The future of Dahomey depends almost entirely on its palm trees. As soon as new trees are planted in the bush up spring the country's only factories—its oil works."



Jeweller's window in a Garden of Eden

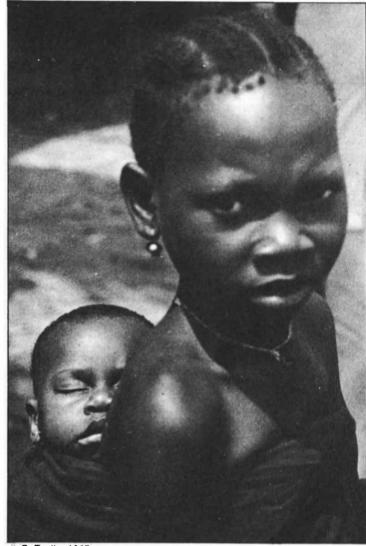
A ND SO I reached my new home. It was just over 30 miles from the coast, a little outside a village on the edge of a plateau overlooking the immense delta of the Ouémé, the great river that cuts across Dahomey from north to south for several hundred miles. On one side was the palm grove, on the other, at the foot of the cliff, six miles of swamp through which the river twists and winds. During half the year it overflows its banks so that the houses have to be built on stilts.

The house stood inside a circle of trees—palm trees, banana trees and papaw trees. There was even a pineapple patch. And then I realized where I really was —in the middle of the Garden of Eden, exactly as I had seen it depicted in so many old prints. "Nothing is missing", said my husband pointing to a ditch. There, lined up in a row, I saw 32 snakes' heads, a glitter of green, yellow and black, like in a jeweller's window. They had been killed the day before by the men clearing underbrush around the house.

It was at Mitro, the nearest village, that I began my career as an ethnologist's wife. Mitro lies at the foot of the cliff bordering the marsh, and is reached by a red earth track. African villages are often so well hidden

that it takes a stranger a long time to find them. Mitro is at the junction of two tracks, one leading down to the swamp, the other skirting it. They link together all the villages located at the foot of the hill.

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WOMAN'S LIFE (Continued) A wife's household in Dahomey: husband plus 20, 30 or 40 in-laws

Where the tracks meet, the market place is set up.

The thousand or so inhabitants of Mitro live hidden away behind the thick screen of banana and palm trees, coco-nut palms and silk-cotton trees that line all the paths. There is nothing to guide the stranger except the rhythmic tappings that can be heard through the greenery—the tapping of drums, gongs, bells, rattles and sometimes even of pieces of broken pottery. The presence of a house is revealed, not by a curl of smoke, hardly even by a path, but by the noise of rhythmic tapping. The impact of Africa is on the ears rather than the eyes.



Special veneration for mothers of twins

M r first visit to the village was paid to the wife of the schoolteacher who had once been a teacher herself. She spoke excellent French with just a slight trace of what might easily pass for a southern French accent. She wore a Dahoman dress—a full, flowered cotton skirt tied under the bosom, and a broad-sleeved, round-necked jacket. Her hair was done up in little tight coils drawn back over the nape of the neck with a thread.

She was an important figure at Mitro. In Dahomey, the teacher and his wife command a good deal of respect, exactly the same as they do in France. But there was something even more important than that about her. The year before she had given birth to twins, and in Dahomey twins are an object of special veneration. Here, Madame Dionne would have received the honours paid to a king!

"First, we must go and see the chief of the village", she said to me. A few minutes' walk brought us to the mud wall encircling the houses where the headman's family lived. Nearly all families live in enclosures shut off from prying eyes not only by the bush but also by a circle of thick walls. This is the home of the ten, twenty, thirty or more persons who make up a big African family. It is called in Dahomey the *houeta*, but Europeans call it simply the *tata*.

Discreetly informed of our arrival, Akadjamé, the headman, was waiting for us. He sat in front of his mud house surrounded by the village notables. They all rose as we arrived and the headman welcomed us with the traditional bowl of water. After making his introductions the headman took me over his home. There were separate houses for his six wives, and others for his mother, his old uncle, his aunt and his brothers. They were all built in the same style—red mud cabins roofed with dried palm branches, clustered together in groups of three or four and connected by paths where goats were frisking about. A little to one side I noticed a building on stilts —the family store-house.

"There was a time", Akadjamé said, "when the fields and palm groves were common property and all members of the family tilled the earth together. Every day or second day the head of the *tata* distributed to the women the maize and yams needed by each household. But now the men want to divide up the land as soon as their parents have died. Nobody works together any more and if you need help you've got to pay your neighbours and even your friends. If the men have no more land or not enough money to support their family they leave the village and look for work at Cotonou and Porto-Novo. The country is changing", the chief concluded rather heavily.

Sé Kandé, one of the headman's wives, no doubt sensed my curiosity for she invited me into her house. It consisted of a big room divided into two by a mud partition. One side was the bedroom, furnished with a bamboo bed which Sé Kandé shared with her two children, and a wooden chest containing her clothes. The other half of the room was a smoke-blackened kitchen, the lower half of its walls painted with white kaolin. The floor was strewn with dried cow-dung trampled down to form a smooth, hard surface. A stew was simmering on a hearth formed of four up-turned pots.



My greetings in Gun raised a laugh

A the end of our visit, Akadjamé saw us to the gate where a pile of corrugated zinc gleamed in the sunlight. "I am getting my roof redone", he remarked in a feigned casual tone. I nodded gravely. Next to a bicycle, a zinc roof is one of the most coveted signs of wealth in Dahoman villages. It stands up to hurricanes and, above all, puts an end to the irksome task of



repairing the thatch periodically. But a zinc roof costs a small fortune and only the well-to-do can afford one.

By now we were surrounded by the villagers. They came from everywhere. The schoolteacher's wife answered their eager questions. No, I wasn't the wife of the administrative officer. I asked her to tell them that I would like to visit the womenfolk. I read their invitations in the expressions of mingled amusement and surprise on their faces which seemed to say, "Now that's strange: we'll see if she really comes."

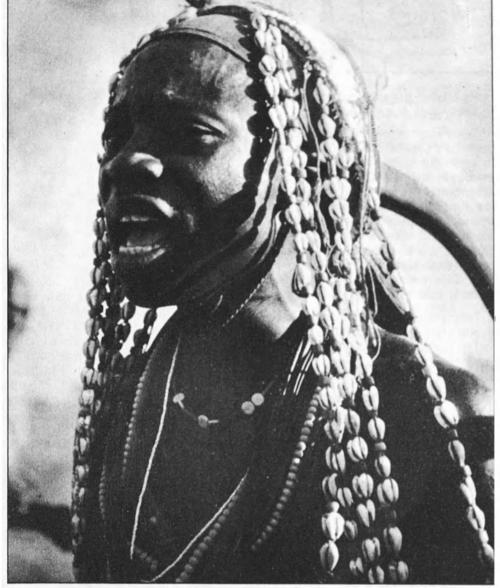
After a few weeks I began to know Mitro fairly well and greeted the people in *Gun*, the local language, which never failed to provoke mirth and amazement. At first the women regarded me with some suspicion. But before long the village grew used to my curiosity. After two or three months some of the women were openly jealous because I hadn't visited them more often or because I had not yet returned their call.

My days were usually spent with three women: Bosi, a young Protestant, Vidéhou, the old fetish woman and Henriette, who was soon to be married. But it was Tavi, a follower of the thunder cult, and a staunch defender of tradition, who initiated me into the joys of African family life. Tavi was well known in the village since she had had twins. Unfortunately one of them had died.

Tavi turned up at the market one morning wearing a claret-coloured skirt hemmed with cowries, the shells which used to be brought by ship from the Indian Ocean and were long used as money in Africa. "This is the special dress for mothers of twins and for twin children", she explained. "Women wear it on the days they go

to market to buy the food to be offered to the twin deities." Curious to see what happened, I couldn't resist following her home. She laid out a little food in front of a wooden doll which she then washed and put to bed on a stool. "This is my child who has gone to fetch wood", she said (for you never say that a twin is dead). "I look after





C Pierre Verger 1957

SHELL-MONEY made from cowries was the most usual form of currency in Western Africa until the middle of the 19th century. Particularly abundant in the Indian Ocean, cowrie shells were first brought by traders to West Africa where they were fastened together in long strings of 40 or 50. Today, women of Dahomey use them for decorating head-dresses (above). A claret-coloured skirt hemmed with cowries is a distinctive dress worn only by mothers of twins and the twin children. To be the mother of twins is considered a special honour in Dahomey, ensuring great respect.

him in the same way as I do his brother Maca, and when Maca grows up he will look after him himself."

That is how I came to know Tavi's family. Like all the women in the village, she came to live here after her marriage. Seated in the courtyard, she pointed out her husband's house, then her brother-in-law's, the two houses of her mothers-in-law (those of the wives of her husband's father), then the houses of two uncles, a widowed aunt who had come back home to live with the family, and finally, four brothers-in-law and their wives. I added them all up; there were at least sixteen persons she couldn't afford not to get along well with...not counting her husband's first wife.

I began to understand the meaning of the saying, "Marriage is a family affair" and the wealth of diplomacy that tradition sometimes attributes to African women. Later, at Abomay, I even met a family in which the wives, tired of the quarrels between their hus-

bands, brothers-in-law, fathers-in-law and uncles-in-law, had formed a small drum orchestra to show the men that it was not so difficult to get on together. To follow

Cont'd on next page

WOMAN'S LIFE (Continued) A hair-do that spelled a quarrel: curls swept over the forehead

one's husband is nothing, but to marry a whole family of in-laws—that is a real art.

Tavi, like any new wife in a Dahoman family, was in a way the "Cinderella" of the household. She it was her father-in-law called on to draw the water, she it was her mother-in-law asked to grind the pepper for dinner. Whenever I visited her, I would find her either sweeping her aunt's house or returning from an errand for her uncle or another relation. So Tavi will certainly not object when her husband takes a third wife since all the work to be done for the in-laws will be passed on to the newcomer. Now I understand why the women of Dahomey go to such lengths to introduce their best friends to their husbands "with a view to marriage".

Polygamy on the grand scale, however, is rare at Mitro. Seventy-five per cent of the marriages are monogamous, and in thirty-two out of forty-three polygamous ones, there are only two wives. The headman alone, who is the biggest landowner at Mitro, has six.

Bosi, the young Protestant, was her husband's only wife, but she didn't find the work in the *tata* too trying. Unlike most Mitro women, she would not have liked her husband to take other wives even if it had meant their taking over part of the household chores. "Women are jealous creatures", she said to me, "and you seldom find two wives of the same husband getting on well together." As if to confirm what she had just said, a quarrel broke out in the house next door. A woman began to sing:

A bird has fine feathers, Feathers made for the bird. A beast has but its hide, And never can it wear the feathers made for the bird.

"That's the wife of my husband's younger brother", said Bosi with a smile. "She's having a quarrel with her husband's other wife." The other wife was sitting in front of her house crushing palm nuts; without even raising her head she immediately started to sing her reply :

She's got a big belly, Big as a boat with too much cargo aboard, Shoulders like bicycle handlebars, And she has the nerve to insult me.

"You can say anything you like with a song", said Bosi. She also explained to me that women once went in for a "quarrel" hair-style known as "turn your back on the other wife". It was the ordinary hair-do in curls, but the curls were brought over the forehead instead of the neck!

In the United States you can buy postcards for all likely—and unlikely—occasions, even the teething of a red-haired baby. In Dahomey, they "say it with a song" and have a repertoire of allusive songs and couplets to fit every event. In one, the family of a young man who has just been married jeers at the parents of an unsuccessful rival; another mocks a shy fiancée; and there is a song for the reconciliation of two feuding families. This does not mean that in Dahomey everything ends in a song. At Porto-Novo songs once led to such violent incidents between one quarter and another that they were prohibited.



Going back to father = going home to mother

B OSI went on to tell me that she thought her sister-inlaw would go back to her father—the African variant of our, "it's all over between us and I'm going back to Mother".

Although true polygamy is dying out, it is giving way to what the Africans, with a wink, describe as successive polygamy, which was much frowned on in the past.





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The Unesco Courier. — March 1957 DOUBLE - AXED THUNDER GOD

Woman of Dahomey marching in religious procession carries the double axe-head emblem of the Nigerian god of thunder, Shango (3). Emblem is mounted on head of wooden statuette depicting a woman leaning on heads of two kneeling servants. Double axe-head, anancient religious symbol of the the thunder god, is also found in the Minoan civilization of Crete and Asia Minor. Greek god Zeus is often represented with same double axe-head. In traditional Dahomey dance, gaily clad woman (1) bows to partner (unseen in photo). Many popular modern dances of West Indies are partly derived from tribal dances of Dahomey and Nigeria. Dancers are watched by grave-faced teen-age girls (2). In Dahomey, girls usually marry at 16 or 17.

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Bosi's husband had had three wives, and though it was Bosi's first marriage, her friend, Tavi, had had two husbands. Vidéhou, the old fetish woman, seemed to me to be the champion of divorce; she was living with her seventh husband. Husbands seldom repudiate their wives. Usually it is the wife who leaves her husband. "He didn't give me any children", one of the women told me. Another complained that her husband didn't give her enough to eat, and Tavi confided to me that her husband spoke slightingly of her family.

Divorce is not a long-drawn-out process. The wife goes back to her father's house until she remarries, which usually does not take long. The new husband may be said to pay for the divorce since he refunds to the first husband the dowry he had originally provided.

"When I was young", an old woman said to me in a those-were-the-good-old-days tone, "it was the family that picked the husband and there were fewer divorces than now." Today a girl marries at 16 or 17 and chooses the husband she likes. In the past, Europeans who often did not hesitate to criticize and denigrate African society, picked on one shortcoming which seemed undeniable. African families married off young people without their consent and often against their will. They pointed to many cases of girls promised in marriage from early childhood, or of widows forced to marry one of the brothers of their deceased husbands. Viewed in the light of European morals and manners, the reproach was justified, but it was directed at one of the bases of African family life, where women are the means for creating or renewing firm family alliances. An agreement between families was regarded in the light of African wisdom as far more important than transient charms or a passing infatuation. The effect of this, therefore, was that family considerations overruled all else.

For the women themselves, the paramount aim of marriage was—and still is to have children. The Mitro women have an average of four children, of which only two usually survive. I met one old woman



WOMAN'S LIFE (Continued)

Hubby brings the bride her dowry; it takes him six months to earn it

who was the mother of twelve. Childless women divorce their husbands. Vidéhou, who had had seven husbands, explained: "They didn't give me any children, so I left them. Now I have a son." For a woman will always blame her husband if she is childless. "A woman can always have children", asserted one old woman, and the opinion of elders is always treated with respect in Africa, where old age and wisdom are practically synonymous.

It would however be quite wrong to imagine that the feelings of the young people had no outlet. Bosi told me tales of unhappy marriages and sensational abductions.

Of the hundred or so songs I collected only one is about a lover's feelings in which the admirer avows his passion:

> I shall walk beside you To see what you will say. I shall walk beside you To see what your father will say. I shall take your pitcher of water And place it on your head; When lifting your pitcher of water My hand will touch you.

A recent law that appeared to affect only a private sphere of life was to shake traditional African society to its very core. This was the Mandel Law of June 1939, giving the African girl the right to refuse a husband she did not wish to marry. Not only did it bring about the rupture of old alliances between families in many different walks of life; it also gave women an effective means of resisting their parents' wishes. Aged fathers were hauled one after another before the authorities by their children. Cupid now had poisoned darts for those who crossed him.

The marriage system was changing, but the old forms and procedures subsisted in their entirety.



Lovers clasp hands but never kiss

W HEN Henriette and Paul found that they were in love, Paul announced the news to his family.

Uncles and aunts of the young man went off one morning to visit Henriette's family. A thousand and one subjects were touched on—news of the two families, the state of the crops, the weather omens. A few allusions were thrown out to a possible marriage. Henriette's family had no objection and returned the visit a few days later. Paul's uncles and aunts then came back with the first presents, which make up the "little dowry"—a few bottles of gin, *apéritifs* and a little money—to express their gratitude to Henriette's family for giving its assent. The figure of the "big dowry" was fought out by both parties stubbornly but with imperturbable dignity. From that day on, the young people were considered to be engaged; in other words Paul was authorized to pay court to Henriette.

Courtship is always discreet and chaste. When Paul wanted to give Henriette a little money for her to buy something she wanted, he would never hand it to her directly, but would slip it under a mat though he would peep round to make sure that he had been noticed doing so. Lovers in Africa clasp hands and engirdle each other's waists, but they never kiss. The old fashioned type of African never kisses on the mouth, and the big love scenes in films never fail to provoke peals of laughter and derision among the audience. Movie manners may be gradually invading the town but have not yet reached the country.



Visits are always a dressy occasion

P AUL and Henriette's engagement lasted over a year for they could not marry until Paul had got together

enough money for the "big dowry". It amounted to quite a sum. At Mitro, where a farmer's average income seldom comes to more than 3,000 francs a month, as much as 15 to 20,000 francs is paid out as dowry in the form of money, bottles of rum, gin, *apéritifs*, skirts, jewellery and cooking utensils.

Quite apart from the question of the dowry, the period of betrothal is very expensive. The fiancé is expected to give presents on all occasions, and they are at least as frequent as in France. Presents do not yet have to be given for birthdays, namedays, Christmas and the New Year, but there are ceremonies in honour of the dead or the birth of a child in the fiancée's family (as African families run to hundreds and even thousands of members, births and deaths are pretty frequent occurrences), ceremonies in honour of ancestors and vodun rites. On all these occasions Paul had to remember not only his fiancée but also, and more especially, his future in-laws.

Paul and Henriette were married while I was at Mitro. He first let his fiancée's family know that the dowry was ready. That evening the womenfolk of the family conducted Henriette to Paul's *tata*. All present were dressed up in their Sunday best. The richest women wore skirts of satin brocade, nylon, *broderie anglaise* or velvet. Paul, as a good host, saw that everyone had something to drink, and when a drummer beat out a compliment, a singer sang his praises or a dancer performed some specially brilliant feat, he rewarded the artist by sticking bank notes on his forehead.

For ten or so days after the wedding I found Henriette dressed in her best clothes, continuing to receive congratulatory visits. When I called on her she set before me, in accordance with Dahomey good manners, a simple flower-patterned bowl with a lid, containing bananas and a packet of cigarettes. People never forget to thank their visitors for coming and present them with something commensurate with the visitor's importance and the host's means. Is this due to a desire not to be outdone, or not to remain indebted to one's friends?

Some days later, Henriette came wearing her best clothes to return my visit, and I thanked her with a gift of money. Etiquette demands that the affection or esteem that one has for persons be shown by the extent to which one dresses up when visiting them. Whether the visit is to a close friend or an important personage, formal dress is always *de rigueur*. When we pay a visit to a close friend, however, we are more likely to dress informally.

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Hidden under a Sicilian village: THE VILLA OF

by Lucio and Giuseppe Attinelli

A ROMAN

HERCULES

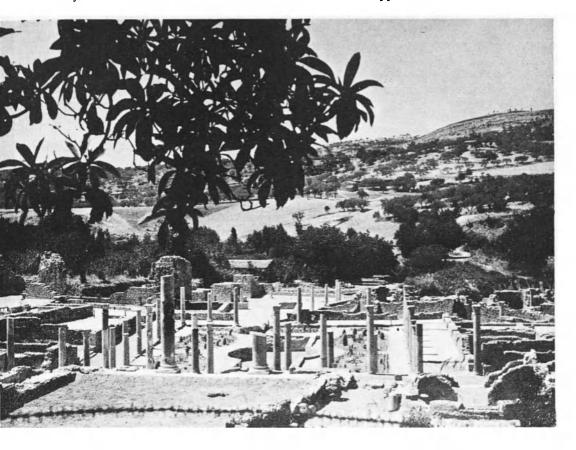
S OARING skywards like some Gothic cathedral, the small village of Piazza Armerina crowns a hilltop in the interior of Sicily. Clustered around the summit, the houses seem to cling to the steep slopes like gnarled carob-trees whose long, tenacious roots reach deeply into the soil. Here, paradoxically, the green vegetation seems to harmonize with the almost unbearable brilliance of a scorching sun. There is not a breath of wind and the air, vibrating in the intense heat, gives the little place an aspect of unreality.

In this setting, like a desert mirage, a magnificent Roman villa has awoken from a long sleep and has stretched itself in the sun like some fabled Sleeping Beauty. As it has been freed from the earth accumulated through the centuries, little by little new details of its construction have became apparent and, though the main building has been completely revealed, the annexes have yet to be uncovered.

Before the villa was discovered, placid cows wandered here and ruminated to the sound of the carefree shepherd's flute, while, only a few feet beneath the ground on which they grazed, lay a wealth of treasures.

Archaeologists in charge of the excavations say that the still-uncovered buildings are spread over a very wide area, as well they may be, judging by other great houses like the villa of Tiberius at Capri and the huge Villa of the Papyrus at Herculaneum, the city which was destroyed by the eruption of Vesuvius in 79 A.D.

The buildings at Piazza Armerina follow the natural curve



PIAZZA ARMERINA an ancient hilltop Sicilian village (top photo) crowned by its domed basilica. Underneath it the remains of an Imperial Roman villa, built for the Emperor Maximian, have been unearthed. On left, the peristyle or colonnaded interior court of the villa on some of whose granite pillars the Corinthian capitals still remain.

Photos & Giuseppe Cappelani

Cont'd on next page

ROMAN VILLA (Continued) Ten 'Bikini Girls' dancing a graceful mosaic water ballet

of the hill and spread out in a series of terraces. Experts say that the Roman Emperor Maximian, called "Hercules" by his subjects, built the villa in the third century A.D. as a hunting lodge and a comfortable "retreat" in which to practise otium (the Latin word for "leisure" or "ease"). This was the ancient form of "rest cure" which though later considered as unfitting for a man, has today been reinstated under the name of "relaxation" as a way of counteracting the wear and tear of modern life. There seems to be nothing new in this world—as other features of the villa show. One of these is a central heating system using the walls to radiate heat often thought of as an achievement of modern technology and there are two rooms for bathers — a frigidarium (cooling room) and a tepidarium (a warm room between the hot baths and the cooling room).

The architectural beauty of t : villa is matched by the richness of its interior decoration

. both testifying to an art in full flower. The splendid mosaics reveal many aspects of Roman life in the third century and illustrate the new forms of artistic expression of this period.

One of the mosaics shows ten beautiful women wearing "bikinis" similar in cut and size to the modern two-piece bathing suits which caused such an outcry when they first appeared on European beaches a few years ago.

These pretty bathers dance in a circle shaking cymbals and other musical instruments which strongly recall the picturesque rhythmic equipment featured by South-American bands. This mosaic is the only existing example of this particular type of entertainment (of which the Romans were past masters) which closely resembles our modern revues.

A first impression had suggested that these extremely modernlooking girls were doing gymnastics, Professor Biagio Pace tells us in his study *The Mosaics* of Piazza Armerina, published in 1955, the year before his death. But, he points out, apart from the one certain element of water (depicted by blue mosaics)

at the feet of the girls, there is no other definite indication, and their positions do not really fit a display of women's gymnastics. Their actions can best be described as a choreographic display, in which balls are thrown and palm branches and tambourines waved to the accompaniment of graceful movements. Professor Pace considers that the mosaic represents a "water ballet" similar to our modern aquacade revues.

Ignoring previously sacred laws of proportion and purity of line, the artist deliberately distorts the hips of the dancers, thus expressing most strikingly the movement. The choice of colours and tones also adds to the expressive vitality of the scene.

The techniques used by the artists immediately suggest modern painting trends; we might well use the terms "Primitive" and "Impressionist" in talking of these works.

In any case here we see a "dynamic" conception of mosaics

for the first time. Every previously known example had reinforced the belief that the special techniques of this art prevented it from effectively portraying motion. In most mosaics action only emerges symbolically, the figures always appearing to be in suspended animation, even where the artist wishes to depict movement. In this respect, therefore, the many mosaics of Piazza Armerina constitute a revolution in graphic expression.

Inspired by the public games of the time the artist has created a kaleidoscope of glittering pictures, superb pagan songs of beauty, physical skill, strength and youth. Of these one of the most significant represents a chariot race. Skilfully caught in full élan, the athletes and horses come alive in a pictorial composition of exceptional force.

At times this particular way of treating mosaics, this

strength of expression makes onefeel that the Roman artist was more a sculptor than a painter. This feeling is confirmed by the large mosaic decorating the room dedicated to the hunt. Between two women's faces, one of which symbolizes Africa, and the other Armenia, the theme, developed on a grand scale, illustrates the different episodes of the *venationes*, the great hunts organized to track down and capture wild animals destined for the arena.

Outstanding effects of relief and realism have been achieved through a skilful choice of contrasting colours. The bodies of the wild animals seem to be writhing in pain; one can sense the straining muscles of the hunters. Each episode is a separate scene but the artist has attained a unity and a harmony of composition by a deft use of proportions. These mosaics also throw interesting light on the ingenious methods used by the hunter to get the wild animals on board the boats which were to take them to Rome, and also to land them on arrival.

Capturing the wild beasts without wounding them severely

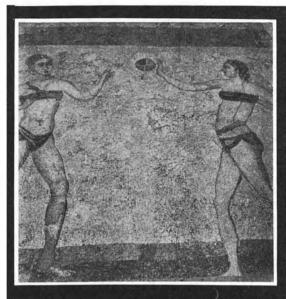
was a hazardous business. So great was the demand for lions that they eventually disappeared from North Africa. The hunters were obliged to go further and further south for them.

In another room the decorative theme chosen by the artist illustrates the legendary labours of Hercules, doubtless as a tribute to the imperial owner of the villa. Here the sculptural quality of the mosaics is still more accentuated. The extraordinary relief of certain scenes, the proportions of the bodies and the great attention to detail recall the "monumental" technique of Michelangelo's famous paintings.

The discovery of the imperial residence of Piazza Armerina is of incalculable value for the study of Roman mosaics. It is also a reminder to archaeologists throughout the world of the extraordinary research possibilities offered by Sicily. The many civilizations which followed one another have made Sicily a veritable storehouse of archaeological treasures and immense riches are still hidden in this "Island of the Sun".



BIG GAME HUNTERS capturing animals for the Roman arena are depicted in the Imperial Villa mosaics. Above, hunting the rhinoceros. The Emperor Maximian, escorted by two men with shields, is shown in same mosaic (bottom of opposite page). Sicilian Tourist Office



BEACH WEAR of today -the two-piece "Bikini" bathing suit—is recalled by scanty costumes of the ten beautiful women who are shown in one of the mosaics. Here, Roman artists gave an effective portrayal of movement. Their mosaics at Piazza Armerina mark-ed a high point in the his-tory of graphic expression.

Photos © Lucio Attinelli





THE PARADOX OF THE JUNGLE

by Gerald Wendt

O NE-THIRD of the world's usable land—15 million square miles—is warm and rainy. In what is called the humid tropics the average temperature during the coldest month does not fall below 64° Fahrenheit and the minimum annual rainfall is 27.5 inches. Some parts of this vast area are almost uninhabited, others are among the most densely populated regions of the earth.

In the 12 million square miles of the hot and humid parts of America, Africa, Australia and New Guinea the population

does not exceed ten persons per square mile, but the three million square miles of tropical Asia are populous. The valley of the Ganges and the plains of Orissa in India have 1,200 people to the square mile. The densest populations in the world are in the Bengal Delta, Cochin and Travancore in India, the Adiwerno district of Java and the delta of the Red River in Tonkin, where the population reaches nearly 4,000 per square mile.

In spite of weather conditions that promote plant growth, the standard of living is low in these areas because the land available per family is too small, because the heavy rains wash the fertility from the soil, because bacterial decay is so rapid that little humus is formed, sometimes because heavy floods alternate with dry periods, and because of the prevalence of bacterial and insect-born disease.

Like all human privation, this is a matter of world import. The humid tropics, like the arid and desert lands, extend all round the globe; they are not limited by national boundaries and their problems are essentially scientific ones of understanding and mastering nature in which not only many



W. H. O.

THE HUMID TROPICS, like the arid and desert lands, extend all around the globe; they are not limited by national boundaries and their problems cannot be solved solely by national action. Today, Unesco and other U.N. agencies are co-operating with governments to find solutions for the many problems of life in the tropics. High disease rate, for example, is a major obstacle to greater food production and improved living conditions. Above, clearing banks of a Philippines' stream, a breeding place for snails which carry the parasites responsible for bilharziasis, an intestinal and bladder disease.

nations but many sciences must co-operate. Experts in climate and weather, in geology and soils, in water control and irrigation, in plant and animal life, in bacteria and insects, in diseases, psychology and education, must put their heads together and work together.

The pattern for such co-operation has already been established by UNESCO in the five years that its Advisory Committee on Arid Lands Research has been at work. Now, the rain forest

first meeting of the new committee next July in the city of Manaus, in the heart of the Amazon jungle. In conjunction with this meeting, an international symposium is to take place on the various chemicals that can be derived from tropical plants. Another international symposium, on climate, vegetation and land utilization in the humid tropics, is scheduled to be held in conjunction with the Ninth Pacific Science Congress when this opens in Bangkok next December.

and the rice paddy, the fisheries and the milk supply, overpopulation and malnutrition, insect control and tropical diseases, eroded soil and the use of fertilizers, flood control and irrigation, and other aspects of life in the humid tropics are also being included in the new scientific research programme being undertaken by UNESCO.

They were discussed at a meeting sponsored by UNESCO at Kandy, Ceylon, last year, which was attended by specialists in tropical research from ten countries (Brazil, Ceylon, France,

India, Indonesia, the Netherlands, Pakistan, the Philippines, the United Kingdom and the United States), by observers from four international scientific organizations (the International Geographical Union, the International Union for the Protection of Nature, the Pacific Science Association and the Pan-Indian Ocean Science Association), and representatives from four Specialized Agencies of the United Nations (the Food and Agriculture Organization, the World Health Organization, the World Mereorological Organization, and **UNESCO**).

A general discussion on tropical vegetation opened the meeting, which closed with specific recommendations for UNESCO'S programme of research on the improvement of humid tropical life. According to the recommendations of the Preparatory Committee at Kandy, the same pattern as was used for the Arid Zones will be followed with regard to the humid tropical zones in the expectation of similar success.

The first step will be the organization of a permanent Advisory Committee on Humid Tropics Research. From Brazil, UNESCO received an invitation to hold the

The committee at Kandy submitted a list of 19 recommendations for action by UNESCO in the humid tropics programme. One called for a special effort to identify and classify the enormous number of tropical insects that play so large a part in tropical life, many of which are still largely unknown. Another indicated that priority should be given to a classification of tropical soils, with a reference collection of soil types and a study of the role of organic matter and nitrogen compounds in soils of humid regions. A third recommendation was for the establishment of a system of fellowships to enable research workers in humid tropical sciences to study abroad. The also proposed to committee UNESCO that some financial assistance be given for the publication of a map of the main vegetation regions of Africa and for the publication of bibliographies on the plant families of Indonesia, the tropical Pacific Islands, and of Africa south of the Sahara.

Man's use of tropical vegetation differs widely in various parts of the world. The Kandy meeting recognized rice culture as probably the most valuable since the flooded fields do not allow the nutrient elements in the soil to be washed away. But both the varieties of rice and the methods of cultivation can be improved. One expert, Dr. Camargo, Director of the National Agricultural Research Service, of Brazil, strongly condemned the "extractivist mentality" which extracts and exploits the wild wealth of the forest with no effort at permanent cultivation or the growing of food. "Today", he said, "the Amazon territory, with everything necessary to grow abundant food, is still importing milk, rice, beans, meat and fats.'

Malnutrition in tropical countries is usually due to a lack of proteins in the diet. Dr. F.R. Barucha, Director of the Institute of Science at Bombay, pointed out that in India there is an average of one bullock to each person, but that they do not contribute to the meat supply, and even the milk yield of the cows and the buffaloes is small

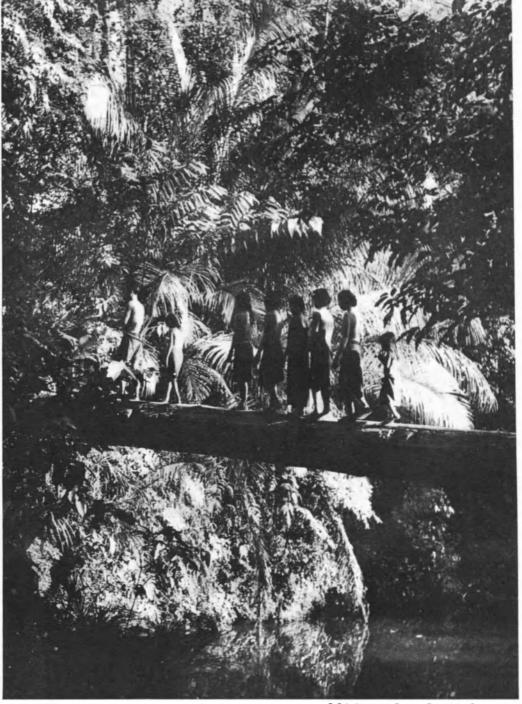
in quantity and poor in protein content because the grass on which the cattle feed is itself low in protein. One of the chief needs for tropical peoples is the development of a high-protein grass that grows well under humid conditions, if only to improve the milk supply.

Comprehensive reports were submitted to the symposium on Java and other Indonesian islands, on conditions in Ceylon, on the Caribbean region, the Philippines, the Amazon basin and the tropical zone of Africa.

One report pointed out that Africa is probably a unique test tube in which to evaluate the various physiological and psychological elements of "tropical inanition or fatigue" in indigenous peoples. It suggested carrying out comparative studies and tests among sample groups from Africa's hot tropical, hot desert, and temperate regions to evaluate the relative mental and physical capabilities of groups in each type of climate, also a study of Kalahari Bushmen-said to run long distances in extreme heat on little or no water.

An impressive panel of consultants who will be available for special reports or committee work has already been listed by UNESCO as a result of invitations from the Director-General to the member states. Twenty-three countries named 120 experts who will thus co-operate in the humid tropics research programme. They are: Australia, Austria, Belgium, Brazil, Burma, Ceylon, France, Haiti, India, Indonesia, Italy, Japan, Mexico, Netherlands, Pakistan, Philippines, Spain, Switzerland, Syria, Union of South Africa, United Kingdom, United States and Viet Nam.

UNESCO is also compiling a list of all research institutions that deal with humid tropical questions, which already shows 87 institutions in 22 countries. More will be added in the coming campaign for complete international co-operation.



TRUNK-WALKING FAMILY of the Iban tribe in Sarawak, North Borneo, crosses a stream on its

way to work in the rice paddies. In warm and rainy Asia man has found that the best answer to the

problem of growing food crops in this climate is to cultivate rice under water. This produces a better

harvest and preserves the soil. Where crops are grown in fire-cleared patches of jungle, the yields are uncertain and it is only a question of time before the absence of trees will lead to soil erosion.

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Japan's 'sausage stove' for mountain climbers

by Matsukata Saburo

The daily press recently reported the tragic story of two young alpinists trapped on Mt. Blanc in the French Alps, who froze to death despite all efforts to rescue them. The article below, reproduced from Japan Quarterly (Vol. III No. 4, 1956) tells of a simple body-warming apparatus used last May by a Japanese expedi-tion which for the first time scaled Mt. Manaslu (26,658 ft.) in the Nepalese Himalayas. The apparatus dates back some 300 years and was described by one of Japan's greatest authors, Ihara Saikaku (1642-1693) a

number of whose works are now being translated into English and French for the first time as part of the UNESCO Collection of Representative Works.

OGETHER with their modern scientific equipment the Japanese expedition which made the ascent of Mt. Manaslu carried along a very old and simple apparatus that performed an important function and performed it well. The device in question is a little heater called a kairo, or literally "chest-warmer". It is so small and simple that one hesitates to speak of it as an "apparatus", though it protected the climbers from temperatures as low as thirty degrees below zero while they were camped at an altitude of 23,600 feet.

The kairo consists of nothing more than powdered charcoal wrapped in paper and placed in a simple metal container. The charcoal itself is made by baking waste hemp reeds in the earth. It is packed, rather like a sausage, into a paper tube about three quarters of an inch in diameter and four inches long, which is then tied at the ends. All one has to do to use the "sausage" is to light one end of it and place it in the metal container. A child can do this with no trouble. When the fire is lit, the container, which is about the size of a small sardine tin, can be wrapped in cloth and put inside one's clothing next to any part of the body one wishes to keep warm. The charcoal burns several hours, but the temperature is not high enough even to scorch the cloth around the container, and one can sleep with the device in one's clothing with perfect safety.

The kairo heaters carried by the Manaslu expeditioners were of a very ordinary type often used by modern city dwellers. A newer type of kairo, containing platinum wires which are oxidized with benzine fumes, threat-ens to drive the old-fashioned type out of common use, but it would have been useless to the Manaslu climbers since it does not work when the surrounding temperature and air pressure are exceedingly low, as in the lofty Himalayas.

So far science does not seem to have offered an explanation for the

effectiveness of the charcoal kairo at great heights, where oxygen is thin. Presumably the secret is that, since the charcoal is powdered, the surface area (that is, the area absorbing oxygen) is relatively large. At the same time the fact that the fuel is composed of many small particles prevents the heat from permeating rapidly. When the tube of charcoal is lit at one end, the fire first moves down the centre and then spreads outward.

Aside from small kairo carried in stomach wrappers, the Manaslu climbers also used larger ones in their sleeping bags to keep their feet warm. In this case too the simple heater proved effective.

As is true of so many of the furnishings and implements that we use all the time, the history of the kairo has not been adequately studied. Mr. T. Yamamoto, himself a manu-facturer of charcoal for *kairo*, once contributed an essay on the subject in a magazine devoted primarily to Japa-nese poetry. Mr. Yamamoto points out that the *kairo* was mentioned by the great Edo-period novelist Ihara Saikaku in his Oritome, a series of stories published in 1694. Saikaku's kairo apparently differed little in form from the type we have been discussing. In those times, however, the container was made of copper rather than tin, and the charcoal from knotgrass or the stems of eggplants.

No mention of the kairo has been found in sources earlier than 1690, nor is there any information as to the stages through which it has evolved since. One reason for the modern use of hemp reed charcoal is simply that hemp reed is plentiful and cheap, but it is uncertain when this material was adopted. Aside from posing a rather quaint problem to scientists, this little tube of charcoal packed in paper presents questions of interest to historians and particularly those who are concerned with life among the common people.

D R. ALFRED NORTH WHITEHEAD, the distinguished British-American philosopher and educationist, once remarked that "Every major advance in civilization all but wrecks the society in which it takes place." I suggest this to be no academic truism, but a truth we see in operation before our very eyes.

Many countries in the world today have an age-old culture of their own which is suffering severe strains and maladjustments because of their need to fit an alien element into their own cultural patterns. That alien element is, in brief, the tech-nological culture of the Atlantic countries. Every society into which countries. Every society into which it has been introduced has suffered It has been introduced has suffered radical change. The society of Western Europe, in the century following the Industrial Revolution, changed almost out of recognition, as the forms and patterns of thought and behaviour were swept away or were deeply modified.

Yet, in Western Europe the new element grew slowly and the process of adjustment was gradual so that in time those societies came to realize that Mankind was in the presence of a tremendous problem and began to grope towards some solutions to it.

What are these solutions whereby men and women in the Western countries sought to make Technology their servant instead of their master? One of them is Education-the need for a high level of public knowledge. Another is a wide diffusion of tech-nical skill and expertise, so that every schoolchild knows something of the workings of the machine-made tra-ditions in which he is being brought up. Another is the gradual develop-ment of social institutions, the Trade Union, the professional association, and so on—all operating within a framework which still embodies a traditional culture.

UT what of the societies where B this Technology which originat-ed in the West has been introduced as an alien element? Such a society may have none of the antidotes I have just described and so the results of an industrial revolution may be terrible. Slums grow up, workers are ruthlessly exploited, the checks and safeguards of the old culture no and safeguards of the old culture ho longer operate and soon the peasant who at least had a place in the old culture and could share in its cha-racteristic ways of thought and feeling, finds himself a dispossessed proletarian, dismayed and bewildered in the grip of a ruthless system over which he has no control.

Knowing there has come to his country a power which can perform miracles of production, which can create wealth where once there was but swamp and jungle, he may yet be unready to absorb its spiritual implications. The West has had decades to adjust itself to the new way of life. Today the processes of technological infiltration are being



A former British member of Parliament, David Hardman was a United Kingdom delegate to Unesco's Preparatory Conference in London in 1945, and has served on the British delegation at many of Unesco's subsequent Conferences.

UNESCO AND TECHNICAL CHANGE

vastly speeded up so that the impact of increased material wealth and the raising of standards of living bring in their train urgent problems.

No one can stop this process. No one should wish to stop it. It is a world movement which historians of to-morrow will discern as the dominant feature of our age. It can be described as Mankind's claim to embrace the Rights of Man.

To meet the challenge, economic

by David Hardman

mentality." Societies, like individuals, cannot *live*, cannot be happy, if nurtured on the benefits of jet aircraft and television sets alone.

I suggest that the supreme responsibility for performing the tasks of social therapy lies with UNESCO. It is this task upon which UNESCO has been engaged since its foundation. The part the Organization has played and is playing in Technical Assistance is of profound importance



James Cudney

FUTURE MECHANICS use Unesco-supplied equipment in automotive shop of Afghan Institute of Technology, Kabul. Today, more than 200 scientists and educators are carrying out Unesco technical assistance projects in nearly 50 countries. Projects range from scientific research and technical training to fundamental education to eliminate illiteracy and raise living standards.

and technical assistance is being given to under-developed countries on a more systematic scale than ever before. The United States Point Four programme, the Colombo Plan, the agreements made by the Government of the U.S.S.R. with the governments of the East, the United Nations Technical Assistance schemes—all speak for themselves. They all embody a bold and challenging plan for economic development.

At the same time is there not an urgent need to develop new social forms, new institutions, new skills, which will nurture and cherish the best in age-long traditions and cultures? To quote Alfred North Whitehead again : "The life of Man is founded on technology, science, art and religion. All four are interconnected and issue from his total in this respect : Its role in fundamental education, in the great variety of tasks undertaken by the Social Sciences Department, in the spread of accurate scientific data, in being a great clearing house for facts and ideas, in priming the pump for worldwide interest in each nation's arts and history, and above all in its unremitting challenge to the nations that all mankind is one and must grow closer in oneness to survive. These are all, in my view, the most profound contributions to peace. They are not the only ones, for the other Specialized Agencies make their contributions too, but they do the most to prepare the spirit of Man for the incalculable changes which the world industrial revolution is bringing about.

Every time UNESCO sends an edu-

cational mission to a country that asks for one, every time a regional seminar is organized, every time a demonstration project in fundamental education or library services is set on foot, every time a field science cooperation centre is opened, UNESCO is helping countries to develop new social forms and to achieve a gradual transition to a new pattern of society which will embrace the new element of technology without sacrificing their cultures of the past.

A ll the activities of UNESCO can be and should be related to this great global responsibility. I believe today that most of them are. It is right that this should be so for the re-adjustment of cultures is the predominant feature of our time. It will happen whether we like it or not. It is UNESCO's job to make sure that it is a triumph and not a disaster for Humanity.

Even in the so-called highly developed countries UNESCO is concerned with the same question. Highly developed countries have by no means fully mastered applied science or the machine. In these countries, the problems are the same in principle but different in degree and content. The effects of automation, the as yet unrivalled power of atomic energy to serve or obliterate the peoples of the earth, human relations in factory and workshop, the failure of the industrial civilization to create its own distinct culture—these are all pressing problems in the most advanced industrial countries of the world. Here UNESCO's constant reminder to governments of the immense importance of the Rights of Man even among nations with a high standard of living is necessary and indefatigable. Here UNESCO's insistence upon the need for untiring research, the keeping up of standards in knowledge and its dissemination among the technically under-developed peoples is a contribution to the common weal.

The highly developed countries are thus subject to strains themselves. At the same time, they must spare some of their best minds and they must divert some of their resources to the job of helping those countries which need help. This is a call they cannot refuse. It is a call to rise above their own national interests. It is the call which UNESCO has put before them and which UNESCO has made easier for them to answer.

UNESCO has grown in prestige because it has shown how technology can come to a nation as a blessing and not as an evil; because it has ensured that the developed countries play their part in maintaining their own social health, so that they may help others. What UNESCO'S role in these times of technical change has been is international co-operation in practice —not words and plous exhortations, but action.

In Mt. Sinai desert

THE MONASTERY OF THE BURNING BUSH

by Albert Raccah

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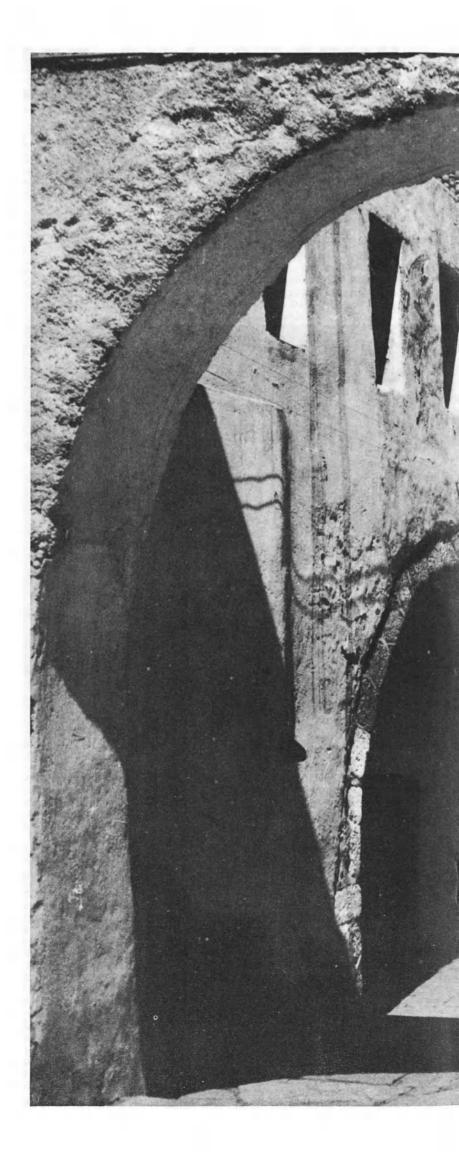
HOUCH little more than 250 miles separate Cairo from the St. Catherine Monastery in the Sinai Peninsula this distance adds up to a two-day journey by automobile. In the preautomobile era, pilgrims spent 15 days on camel's back on the same trip.

From Cairo to Suez there is a fine highway, but once across the Canal, the road becomes little more than a track on which vehicles have to move slowly, grinding through the sand or bouncing over loose stones. But the traveller becomes so absorbed in the majestic beauty of the scenery—and in the monastery when he reaches it—that he hardly notices the rigours of the journey.

In the first centuries of the Christian era the Sinai Peninsula became a centre of refuge for monks and Anchorites (the early Christian recluses and hermits). About the beginning of the 4th century they sent a delegation to St. Helena, mother of Constantine the Great, asking her protection. She ordered the erection of a small fortress with a church built inside.

We still have a descriptive picture of the area as it appeared to a nun of noble birth named Sylvia (also known as Etheria) from Spanish Galicia, who went to visit the Holy Places of the Sinai early in the 4th century.

Apart from her pious virtues, Etheria had also the makings of an excellent reporter. She recounts the journey she made to the Sinai in great detail, with a wealth of facts on the history of each site (facts which have hardly changed in 16 centuries). At the foot of





Sinai Monastery

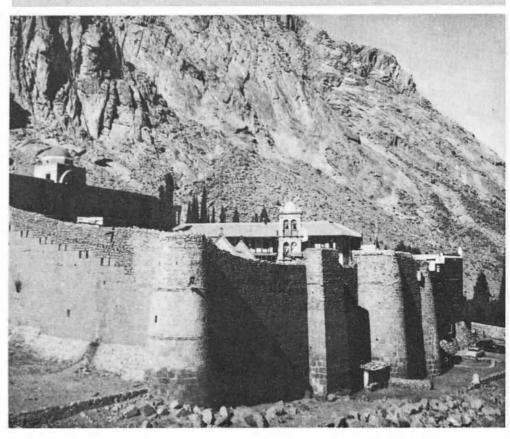
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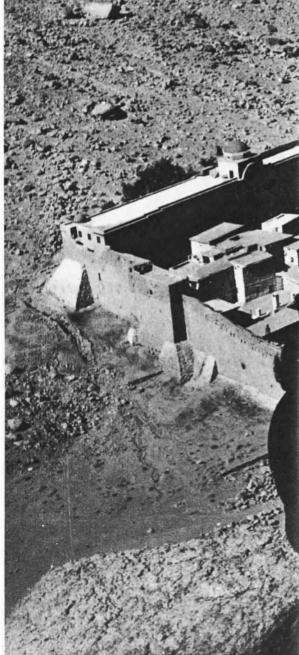
Doth the St. Catherine Monastery (one of the oldest known in the Christian world) and the priceless treasures it contains have been pronounced "intact" following the recent hostilities on the Sinai peninsula, where the monastery is situated.

The statement was made by a Belgian specialist, Professor Gerard Garitte, who was sent by UNESCO to investigate the condition of the monastery and its collections, at the request of the Governments of Egypt and Israel.

Professor Garitte was also a member of a threeman team who microfilmed almost 2,000,000 pages of manuscripts of the St. Catherine collection in 1950 for the U.S. Library of Congress.

Monastery shown in photo, right, resembles toy model or construction set when viewed from mountain top. A spring in centre of monastery provides fresh water for monks and gardens. Below, close-up of ramparts.





Mount Moses (The Mountain of the Decalogue) she found a community of monks living on the reputed site of the Burning Bush, where according to the Bible, God appeared to Moses, telling him to ascend the mountain to receive the Ten Commandments.

On the accession of the Emperor Justinian in 527 A.D. these monks asked the ruler to build them a monastery behind whose walls they would be safe from bandits and other marauders.

Justinian agreed, and on his orders the present monastery was built. With its towers and high walls it was more like a castle than a home of monks, but, fearing that even these walls would not be sufficient protection, Justinian also sent 200 slaves with their families to defend it in case of attack. The monastery gained its name from the fact that relics of St. Catherine of Alexandria, found on the Sinai Peninsula, were brought there and may still be seen by pilgrims.

Entering the fortress-monastery by the three successive gates is like



stepping into the past, into a fortified castle of the Middle Ages. Looking down from the ramparts and towers one sees narrow winding alleys which separate the quarters of the monks.

But this is an almost deserted fortress. Instead of the hundreds of religious men it once housed, there are today only a dozen or so monks who spend their lives in their ce^{γ} or in the chapels. They follow, as in the past, the Greek Orthodox rite.

Despite all the sieges and pillaging, the treasures which have accumulated there during 14 centuries are considered priceless. The walls of the Basilica are covered with ancient icons of great artistic value. On each side of the altar are two reliquaries—offerings to St. Catherine—decorated with precious stones.

One, dating from the 18th century, was the gift of the Russian Empress, Catherine the Great. Nearby on a small table is a golden chalice and a tiara enhanced by rubies and emeralds. It would require a catalogue of many pages to enumerate all the riches that exist here. Behind the altar is the Chapel of the Burning Bush. All who enter are asked to remove their shoes in commemoration of the words God spoke to Moses: "Put off thy shoes from off thy feet, for the place whereon thou standest is holy ground." Here, too, the walls are almost completely covered by icons.

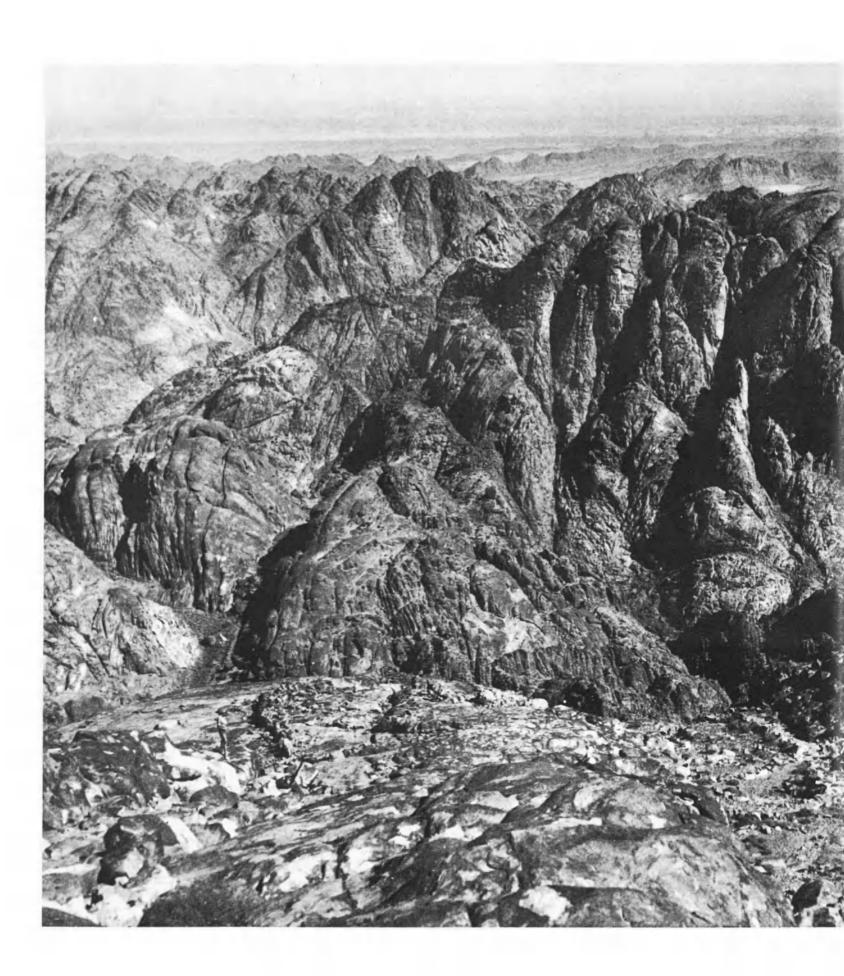
For many years the monks had no idea of the real value of their possessions, but since the discovery of the *Codex Sinaiticus*, they have watched over their treasures jealously. The *Codex Sinaiticus*, one of the three or four oldest texts of the New Testament, was discovered in 1844 by the German biblical critic, Tischendorf, who visited the monastery library, hoping to come across some interesting manuscripts to use in his studies. In the middle of the room he found a wastepaper basket full of parchment sheets due to be burned. Examining one of them, he recognized it as a fragment of a very ancient biblical manuscript, as, he also found, were the other 129 sheets he rescued from the same waste basket.

He obtained 43 of the sheets and

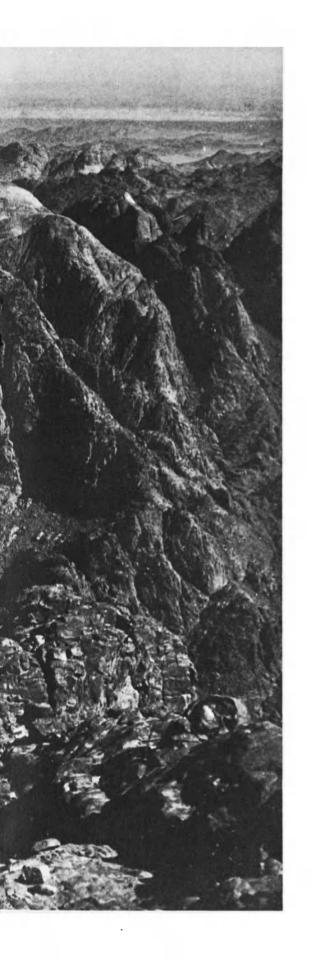
impressed on the monks that they should carefully preserve the rest. Later the Czar of Russia bought the manuscript from the monks for the equivalent of just over £1,000.

In 1933 the Soviet Union sold the *Codex Sinaiticus* to the British Museum for £100,000—said to have been the highest price ever paid until then for a book. The monks' regret at having disposed of the manuscript some eighty years earlier can easily be imagined.

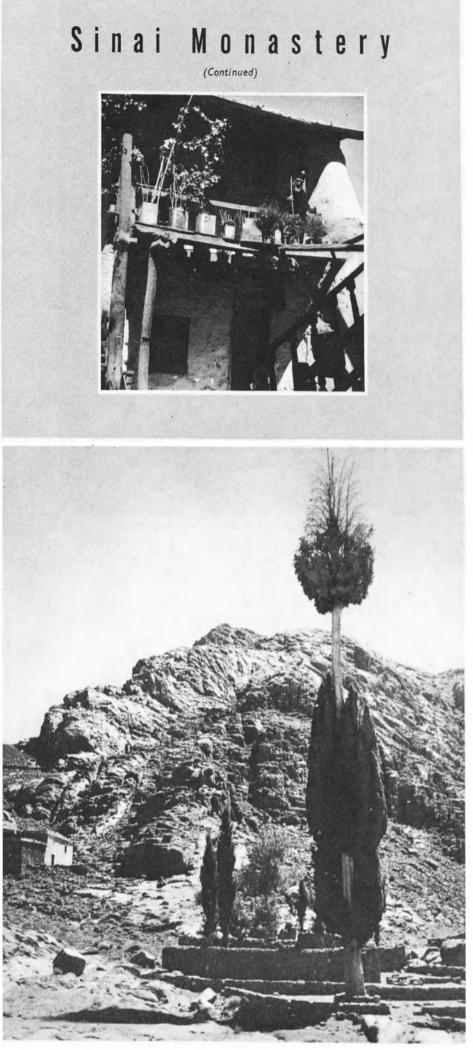
Today a new building houses the library which is the pride of the monastery. With around 3,500 Byzantine, Greek, Arab and Russian documents it is regarded as the second most important collection of manuscripts in the world. (The most important is in the Vatican.) St. Catherine's has also a number of gospel books, some of them bound and others illuminated with delightful miniatures. In 1950 a three-man team microfilmed most of the contents of the St. Catherine collection for the United States Library of Congress, taking nearly 2,000,000 photos of the manuscripts page by page.



TABLETS OF STONE In the wilderness St. Catherine's Monastery is located on Mount Sinai, but contrary to popular belief, this is not a single peak. Rather, it is a massif and the monastery is on a plateau almost completely surrounded by higher mountains. One of these is Jobel Musa (Mountain of Moses) where Moses is said to have received the Ten Commandments on tablets of stone. Photo above shows a view from atop Mount Moses. The savage beauty of this rugged, bare landscape is heightened by the mystery which surrounds the silent rocks. Right, the chapel dedicated to the prophet Elijah on the path leading to Mount



Moses. When St. Catherine's had hundreds of monks, some climbed to the chapel to say mass under the enormous cypress tree which is several hundred years old. Above right, one of the rare distractions of the monks at the monastery... tending their oil-can gardens on the balconies outside their rooms.





Sinai Monastery

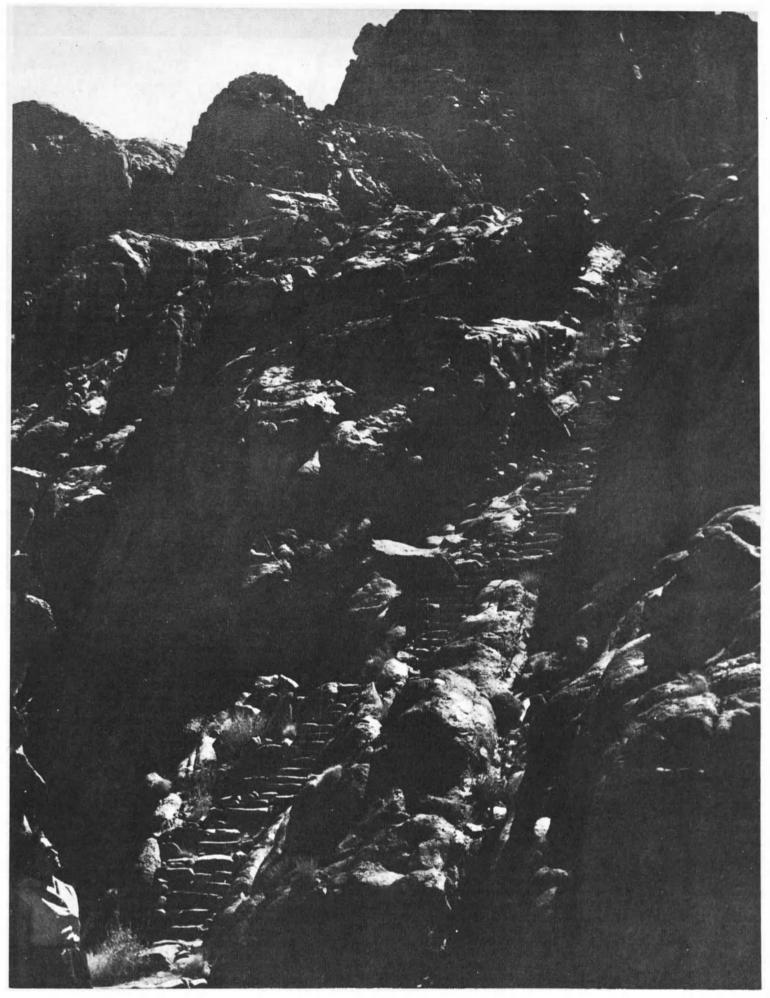
(Continued)

CHAPEL OF THE BURNING BUSH - The Chapel of the Burning Bush in the St. Catherine church is the most sacred ground on the whole Sinai peninsula. This, it is believed, is the exact spot where Moses beheld the burning bush which was not consumed, and heard the voice of the Lord say: "Put off thy shoes from off thy feet for the place whereon thou standest is holy ground." Today visitors are required to remove their shoes before setting foot in the chapel. The walls of the church are covered with one of the world's richest collections of ancient Byzantine icons. Other treasures include silver lamps, chasubles embroidered with gold, jewel-embedded crosses, Russian chalices, finely woven altar cloths, and Greek belts of silk.

FOUNDER JUSTINIAN AND WIFE-The

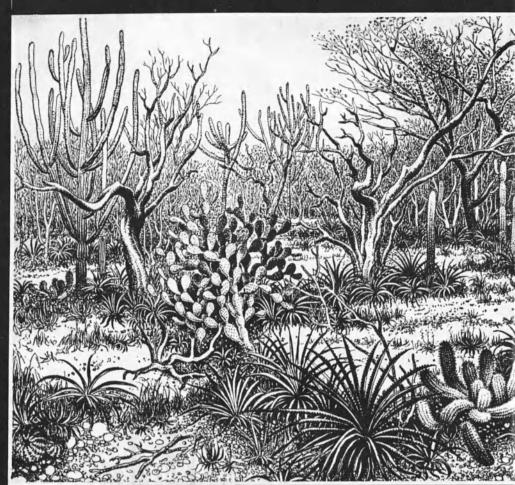
striking fresco in central nave (right) shows Emperor Justinian I who founded monastery in sixth century, and his wife Theodora. It is surrounded by delicately carved woodwork covered with gold. Monastery was once one of the great centres of Eastern Christianity. Its library of manuscripts, second only to that of the Vatican, contains some of the oldest surviving Christian documents. There are fragmentary texts identified as having been written as far back as the fifth century and complete works from the eighth century on. Library contains 3,500 manuscripts of which 2,500 are in Greek, 600 in Arabic. Others are written in Syriac, Armenian, Georgian, Coptic and Slavic.





3,000 STEPS TO MOUNT MOSES — A stairway of 3,000 steps, carved from the rose-coloured granite by monks, leads to the summit of Mount Moses (7,500 feet high) regarded as the Mt. Sinai of the Scriptures. The stairway runs from near the monastery, climbing up the mountainside through a narrow, rocky gorge.

A LEGENDARY CITY IS ABOUT TO DIE-FOR THE SECOND TIME



FALL OF CANUDOS. Historic photo on right is one of the rare documents available today of the great "Rebellion in the Backlands". It was taken almost immediately after the fall of Canudos on October 5,

the second s

by A.D. Tavares Bastos

LEGENDARY city is about to die.

A The scene of an incredible drama of violence, fanaticism and misery, of indomitable courage and endurance that took place some sixty years ago, it was born condemned and has lived condemned. In a few months' time it will disappear forever, submerged under millions of tons of water. In this supreme sacrifice it will serve to redeem one of the most parched and disinherited regions of northeastern Brazil's "Polygon of Drought".

The town is named Canudos. Though it is almost totally unknown outside of Brazil, there is hardly a Brazilian for whom it does not evoke deep stirrings and recall one of the great epics of Brazil's past.

Canudos lies in the far interior of the arid *sertao* in the state of Bahia, where a backland people have lived for centuries practically isolated from the life of the seaboard and the rest of the country. Year after year they have waged a terribly unequal struggle against a hostile environment, against the double spectre of drought and famine.

This is the region of the *caatinga*, the gnarled dwarf bushes bristling with spiny thorns, the no-man's-land of *xique-xique* and *mandacaru* cactuses, of parched earth and sun-baked rock hills, of leather-clad *vaqueiros* (cowboys), one-time *jagunços* (outlaws) and former religious fanatics.

It was a religious visionary, Antonio Conselheiro (the "Counsellor") who in 1893, with a handful of miserable, ragged followers, founded the tiny citadel of Canudos in

the wilderness, defied the Federal government, and touched off the biggest war of the *sertao* Brazil has known.

It was Canudos that for one full year (from 1896 to 1897) held out against four fully equipped military expeditions sent to subdue it, refused to surrender, and fought on to the last man until the whole town was no more than a heap of ruins. It was Canudos that shook the young Republic of Brazil to its moral foundations, its very name provoking terror throughout the country. It was Canudos that inspired what is commonly regarded as the greatest of Brazilian classics, Os Sertoes by Euclides da Cunha.

Rebellion in the Backlands, as the work is known in English translation, has been described as "one of the most remarkable books ever written," and "the Bible of Brazilian nationality." The late Stefan Zweig termed it "a great national epic... a complete psychological picture of the Brazilian soil, the people, and the country such as has never been achieved with equal insight and psychological comprehension."

In his history of Brazilian literature entitled Marvellous Journey, Samuel Putnam (translator of Os Sertoes) writes: "In the place that it holds in the esteem and affections of an entire people, it can only be compared to the Divine Comedy or Don Quixote. Like these great classics it is the expression of the very soul of a race in all its strength and all its unconcealed weakness... No other book ever laid hold of a nation in the same way and to the same degree as this one." And the Brazilian novelist Erico Verissimo has written: "If I had to choose just one book in Brazilian literature to be translated into other languages as representative of my country and of my people, I would certainly pick Os Sertoes."

The story of Canudos begins north of the states of Bahia and Pernambuco, in Ceará, a vast tract of land scourged by periodic drought and famine. Antonio Mendes Maciel—the Counsellor—came from Ceará. His family were farmers and cattle grazers, copper-skinned sertanejos

Antonio Dias Tavares Bastos, Brazilian poet and man of letters, has been a member of the Permanent Delegation of Brazil to Unesco since 1947. His major works have been written in French and have helped to make Brazilian poetry better known to the French-speaking world. They include: Introduction à la poésie ibéro-américaine, published in 1947 in collaboration with Pierre Darmangeat, and Anthologie de la poésie brésilienne contemporaine (1954).



1897 and shows Federal troops occupying the devastated town. It took four Brazilian military expeditions one full year to defeat a bearded mystic surrounded by a horde of fanatic believers and fugitives from

(inhabitants of the *sertao*), proud, courageous and independent. They got on well with their neighbours except for the Araujos, a rich landowner with powerful family connexions in the *Nordeste*, with whom they had been feuding fiercely for years. Murder and cruel vendettas marked their relations, decimated the two families, and left an imprint of tragedy on Antonio Maciel's childhood. Later, an unhappy marriage added a further note of calamity to his life, and his true vocation began to take shape.

One day, he set out on foot across the land. His wanderings took him over enormous stretches of territory. He crossed the whole state of Pernambuco, the state of Sergipe, then Bahia where we find traces of him as early as 1876. During these endless peregrinations he endured every hardship—hunger, thirst, exhaustion—but remained imperturbable and remote. He seemed to float above such material contingencies. He addressed his listeners with the announcement of the end of the world, promising a better life in heaven and preaching contempt for this wicked earthly existence. Soon he was being credited with miracles and people began to call him "Counsellor".

A document published in Rio de Janeiro describes him during this period as "having a great influence on the minds of the ordinary people, using his strange appearance and his austere, ascetic habits to impress the simple and the ignorant. He looks almost like a mummy. Under the cloak of religious sentiment, he gathers the people around him and leads them where he lists. He appears intelligent, though lacking in culture."

Then the number of his disciples began to grow, and more people began to flock around him. For ten years they went from village to village, from town to hamlet, erecting chapels wherever they went. And the people from the surrounding countryside who came to listen to the Conselheiro preach, begged him to perform miracles.

In 1882, however, the Archbishop of Bahia, alarmed at

justice. Final expedition comprising 5,000 men reduced fortress-town to rubble. These troops had to traverse a great wasteland, bristling with spiny thorns and cactuses (left) before reaching the citadel.

reports about this independent and superstitious lay prophet who was troubling people's minds, asked the clergymen in his diocese to forbid him to preach. His efforts were of no avail.

Five years later the same archbishop appealed to the President of the Province to take steps against the Conselheiro. The president wrote to the Minister of the Empire (Brazil did not become a republic until two years afterwards, in 1889) requesting that the mystic be placed in an insane asylum in Rio de Janeiro. The reply came that there was no room available at the asylum. This simple refusal by the authorities was to open the way to the tragedy of Canudos.

In 1893 the Counsellor found himself in the community of Bom Conselho (state of Bahia). It was there that for the first time he preached open rebellion against the law, haranguing the crowds to refuse to pay the taxes then being collected, and ordering a bonfire built of tax forms.

Realizing the gravity of his act, he assembled his followers and headed north into the wild *sertao* desert which he knew like a book having crossed it in every direction on foot. He had good reason to be uneasy, for a posse of 200 police was on his trail. Yet, incredible though it may seem, the police force was thrown back and completely put to rout by the Conselheiro's band of fanatics.

The rebels continued their advance deep into the rugged sertao until they came to Canudos where they established themselves. The year was 1893. At the time, Canudos consisted of nothing more than a few wretched, tumbledown shacks housing a collection of rough, gun-toting frontiersmen who spent their time drinking

and smoking curious-looking pipes. These pipes gave Canudos its name, for their stems, about a yard long, were made from sturdy reeds (called *canudos de pito*) which are found growing along the river banks.

Cont'd on next page



The Counsellor had picked his hide-away well. Canudos was a natural stronghold. It was deeply ensconced within an elliptical circle of mountains (one had the fitting name, Monte Santo) and it was almost entirely surrounded by the river Vasa-Barris which made two hairpin twists before it (see the map on opposite page). Its southern edge was backed by a steep slope; its western flank protected by a sharp, towering escarpment. All the trails leading to Canudos passed through narrow gorges and defiles or over rough, spiny cactus-ridden terrain. It was miles from the nearest settlement. Canudos was safe from surprise attack.

Conselheiro and his followers set about building their town. In a few weeks houses had been constructed, not in simple rows along straight streets 'but in a jumbled labyrinth of closely packed, narrow tortuous alleys. In the central square, a church was built. At amazing speed, the village grew and expanded as new followers abandoned their distant homesteads, and made their way to Canudos. Soon outlaws and ex-convicts joined their ranks.

Feeding this growing population soon became an alarming problem that inevitably led to foraging expeditions and even to murder. Ranches and villages were plundered for food as well as other materials. The Conselheiro, his head more than ever in the clouds, appeared to ignore such details and busied himself with the celebration of marriages and baptisms, and matters of government.

In November 1896, the first army troops were dispatched from the state capital of Bahia to "polish off" the outlawfanatics, or *jagunços* as they were now commonly called. After a long and weary trek inland, suffering all the way from thirst and heat, a hundred soldiers and three officers of this expedition were surprised by the Conselheiro's men at a town called Uauá some 20 miles from Canudos. Though armed only with old rifles, scythes and clubs, the *jagunços* took advantage of their knowledge of the backland country and its ambush possibilities. They attacked at dawn in superior numbers, contented themselves with a partial victory and withdrew. The survivors of the army force retreated in such disorder that the people of Uauá started to panic and began a mass exodus from the town. The war of the *sertao* had begun in earnest.

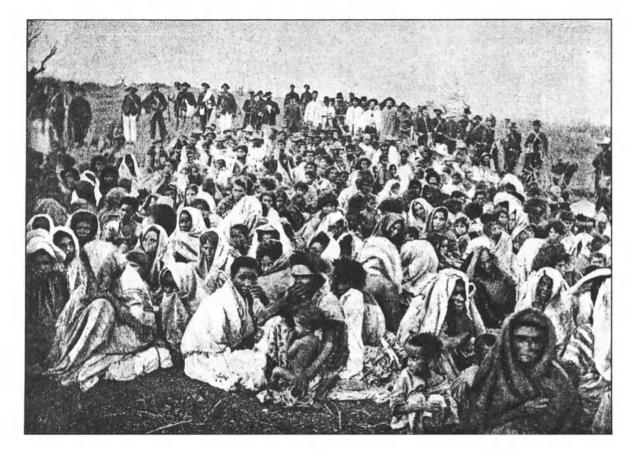
The news of the defeat spread across all of Brazil like wildfire. The most fantastic rumours passed from mouth to mouth. Almost overnight Antonio Conselheiro had become Brazil's Public Enemy Number One.

A better organized expedition of 500 men now took the road for Canudos. The battle was soon joined and quickly developed into a series of confused encounters. At one point the *jagunços* were certain they were on the verge of defeat, but in the turmoil of battle the government troops failed to grasp the fact that victory was theirs and instead withdrew. This sudden change of fortune was hailed at Canudos as a new miracle of the Prophet.

After this, the population of Canudos continued to grow. Newcomers included the blind, the paralyzed and lepers, who all hoped for a miracle. Canudos was now an organized military camp under the command of the Counsellor's chief bodyguard.

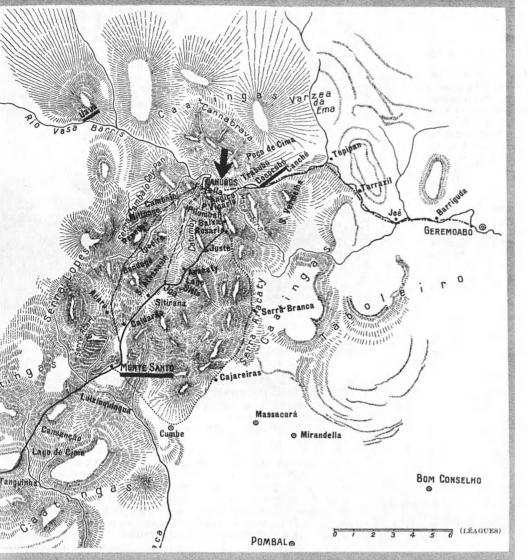
On February 8, 1897, a full colonel of the Brazilian Army, Antonio Moreira Cesar, set sail from Rio de Janeiro for Bahia to lead an expedition of three armies against the small collection of *jagunços* at Canudos. The main corps of the expedition included an infantry battalion, a regiment of artillery and a squadron of cavalry. A few days after Moreira Cesar's arrival at Bahia, 1,300 fighting men, armed with fifteen million rounds of ammunition and seventy shells for their artillery, had been assembled. To the music of an army band they marched off in full regalia into the wilderness.

On February 20th the expedition reached Monte Santo, south of the Conselheiro's stronghold. With not even the inkling of a doubt about his victory, Moreira Cesar spoke of "having lunch at Canudos". His forces were actually the first to reach the citadel, but the commanding officer committed one serious military blunder after another.



NO COMBATTANT SURVIVED

This poignant document shows the only survivors of the bitter drama of Canudos: a handful of gaunt, derelict women and a few children. In the final stages of the siege of Canudos they were allowed to leave the town along with one or two old men who could not bear arms. No ablebodied man ever surrendered. The citadel had to be conquered inch by inch until the last defender was dead.



Instead of reducing Canudos with his artillery, he ordered a series of direct assaults—cavalry charges, infantry charges, bayonet attacks. His forces were cut to ribbons. On March 3, Moreira Cesar, severely wounded the previous day, died along with two of his staff officers. The attack collapsed, and the army now completely disorganized began a retreat which quickly became a rout.

This utter defeat left the nation dumbfounded. Consternation gripped the people; the government was violently attacked by the opposition and the Republic itself tottered. "Save the Republic !" became the anguished cry in the face of the growing despondency and despair, and a multiplicity of legends about Canudos which were sprouting up from every side.

The government had to act promptly. Mobilization was ordered of battalions from each of the States of the Union. The commander of Brazil's second military district, General Arthur Oscar de Andrade Guimaraes, was placed in charge of the Fourth Expedition comprising six army brigades forming two columns, each headed by a general. Though this force was much stronger than all previous expeditions, the plan of operations was no different. It was essentially, as before, a frontal attack by marching columns (two this time instead of one) instead of a plan to encircle Canudos from a distance to prevent all escape, and then to tighten the circle, bring artillery into firing range and destroy the citadel by bombardment.

The expedition had been formed in April of 1897, but it was only on June 16 that the first division got under way. The first communiques announcing victory were quickly followed by the news of unexpected reverses and heavy casualties. Canudos still held out. The arrival of the first survivors soon confirmed the real truth: the column had met with total disaster. The ferociousness of the *jagunços*, their sniping attacks and raids, the difficulty of the desert terrain, the lack of water, the intricate trenchwork defenses constructed around Canudos, and the



MOUNTAIN STRONGHOLD

Large-scale map (left) of area around Canudos shows mountainous nature of terrain and hairpin twists of River Vasa-Barris which served as a "moat" to protect it. Dotted and other lines indicate routes of various military expeditions which attempted to assault stronghold. Map (above) shows northeastern region of Brazil, with Canudos some 280 miles north of Bahia and to the west of Pernambuco.

Map left, from Os Sertoes by Euclides da Cunha. 1945 edition, Livraria Francisco Alves, Rio. Map above, from A Brazilian Mystic by R.B. Cunninghame-Graham. London, Heinemann, 1920.

impossibility of determining even roughly how many men the "Prophet of the Backlands" had at his disposal to defend the citadel, all went to swell the stories that were told to explain away the latest catastrophe.

Marshal Carlos Machado de Bittencourt, the Secretary of State at the War Office himself, now took over command. "More than the *jagunços*," he declared, "it is the desert that we must conquer." This time Canudos was to be crushed. Additional troops were poured into the area and soon columns were converging on Canudos from every direction with plenty of artillery and shells.

On August 24, a heavy mortar weighing over a ton and a half opened fire on the church tower and toppled it. The artillery pounding continued during the entire month of September. On October 1 the final assault was sounded and what little remained standing was dynamited.

Then all was still.

Canudos will vanish.

Canudos never surrendered. It held out to the very last man. Conquered, literally, inch by inch it fell on October 5, toward dusk, when its last four defenders died facing a furiously raging army of thousands of soldiers. The four defenders were an old man, two younger men and a child.

A number of women and children and a few old men had been permitted to leave the citadel during the siege. They were the only survivors. Over 5,000 destroyed houses were counted at Canudos. Among them lay the body of the "Prophet of the Backlands".

Of old Canudos nothing remains today except a collection of bullet-marked ruins, and a cross bearing the inscription "Erected in 1893 by A.M.M.C." (Antonio Mendes Maciel Conselheiro). New houses were built there in 1909 and a few thousand inhabitants still live there. Today, they are preparing for the day when next page

LEGENDARY CITY (Continued)

C ANUDOS is located in the heart of Brazil's Polygon of Drought-300,000 square miles of dust bowl ranging over eight states.

over eight states. Because they obstinately remain on this hostile land, the people have been called os flagelados (scourged ones). Periodically terrible droughts descend upon the region. When they are so severe that neither man nor beast can live, the "scourged ones" reluctantly pack their few belongings and abandon their homes. Then sad processions of retirantes (the Oakies of Brazil) can be seen making for the coast or the south or even the Amazon region in search of a more hospitable climate. Over 1,500,000 retirantes abandoned the region between 1940 and 1950. Some return once the rains come, most never do.

To halt this mass exodus, the National Anti-Drought Department and other government agencies have embarked on an ambitious programme of dam construction and water development with the aid of UNESCO experts. Rain water and flood waters are now being stored painstakingly behind dams throughout the area (some 600 have been built so far). The country is studded with reservoirs, large and small, and at many points they have enabled the *sertanejo* to raise crops on irrigated land.

Early in 1955, government engineers began construction of a new dam in the canton of Euclides da Cunha (so named in honour of the author of Os Sertoes). Canudos, located in a valley surrounded by a chain of mountains

EUCLIDES DA CUNHA

When the campaign against Canudos was undertaken, Euclides da Cunha accompanied the Sao Paulo battalion to the front to cover the expedition for a newspaper. His work is thus a superb piece of journalism, though he



wrote it some years later at his leisure. Da Cunha has become a cult in Brazil. Each year the nation pays homage to him during "Euclides week", and its leading men of letters make a pilgrimage to the little town of Saa José do Rio Pardo in the state of Sao Paulo where the book was written. The shack in which da Cunha laboured on the manuscript after his day's work as a civil engineer has been preserved as a shrine. In 1909, at the age of 43 he was killed by an assassin's bullet in Rio. Many readers skip the first two chapters of Os Sertoes because it is rather overloaded with technical terms, and start with the third chapter where "The Rebellion" takes on the flavour of an exciting novel, full of plots, pathos and drama. The book was recently included in a list of 100 of the world's best novels. English readers may also wish to read R.B. Cunninghame-Graham's account ot Antonio Conselheiro, entitled A Brazilian Mystic.

finds itself in the centre of the future reservoir. The barrage itself is being built seven miles from Canudos on the Rio Vasa Barris at a village named Cocorobó.

Rio Vasa Barris at a village named Cocorobo. A UNESCO mission, headed by a French hydrogeologist, Pierre Taltasse, surveyed the area in July 1955 at the request of the Brazilian Government, and has been advising Brazilian engineers on various technical problems since then. The barrage will collect all the water accumulated during the rainy period in an area extending over 180,000 square yards. The dam will have a height of 32 metres and a length of 1,200 metres. Near Cocorobo, a new modern city is being constructed for the present inhabitants of Canudos who will be among the first to benefit from the newly-created irrigation zone.

When the Cocorobó dam is completed next year, Canudos will be submerged under 250 million cubic metres of water. But as the legendary city disappears forever, 37,000 acres of now barren land will help to prove that man can turn the *sertao* green.

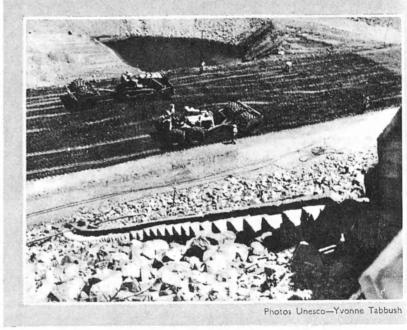
BATTLE AGAINST THE DUST BOWL



S INCE June 1953, a Unesco technical assistance mission has been in northeastern Brazil working closely with the Brazilian Government in a vast battle against the greatest dust bowl of the nation. (View of arid sertao or bushland is shown above.) Two Unesco hydrogeologists, Pierre Taltasse and Etienne Stretta, have been working not only at the dam going up near Canudos but at several others: a 500 million cubic metre barrage at Poço da Cruz in the state of Pernambuco (photo below), due for completion this year; a 1,000 million cubic metre reservoir at Bico de Pedra in the state of Minas Gerais; another of the same capacity at Vereda Grande (state of Piaui); and a dam at Santa Lucia, to be inaugurated this month near Belo Horizonte, capital of Minas Gerais. On all these sites the Unesco mission has made soil and water studies and given advice on dam construction and other problems.

The mission's important training programme includes special courses for local engineers and technicians both in the field and in the classroom; and the selection of promising candidates for Unesco fellowships (several have now returned from their study abroad and are at work in the region). As a result of the Unesco team's efforts, geology has now been accepted as a recognized profession for the first time in Brazil, and schools of applied geology are to open shortly in Recife, Sao Paulo, Belo Horizonte and Porto Alegre.

A Hydrogeological Research and Documentation Centre is also being set up at Recife, at Unesco's instigation. Working under the auspices of the National Anti-Drought Department, it will undertake field and laboratory research on soil and rock structure of the Polygon of Drought, make an inventory of water resources, and will serve as a clearing house for hydrogeological documentation.



The first thing most people do when they get a new passport is to look at the photograph. "Don't I look awful", they say, "it doesn't look a bit like me; it might easily be someone else."

This isn't always a case of injured pride, for most passport photographs do "look like someone else" or, rather, they look like a number of people. They are unreliable because, generally, they are taken without observing certain special rules and reveal none of the specific characteristics which make it possible to identify a person, whether he be a dangerous criminal or an ordinary tourist.

In fact for purposes of identification a photograph is not really important; it is enough to note down the facial characteristics so as to be able to pick out a person in a crowd. These facial characteristics, arranged in a given order according to a set code, make up the *portrait parlé* ("speaking portrait"), a system of visual identification developed about 60 years ago and still taught in most police forces.

This system, which is practically irreplaceable, was one of the most important discoveries of Alphonse Bertillon (1853-1914), "the father of scientific detection", whose life and work are described in a recent issue of UNESCO'S scientific quarterly "Impact" (1) by Charles Sannié, a professor of organic chemistry and director of the French Criminal Records Department.

The story of Bertillon's life makes fascinating reading, for

he was truly a paradoxical character, and his career, like that of many public figures, was due in a great measure to chance.

If he had not been an unruly youngster, a dunce who was expelled from one school after another and who reached the age of 20 having failed every exam, he would probably have ended his days as an obscure laboratory assistant at the Museum of Natural History, with an annual salary of some 1,200 francs.

But as he had none of the necessary exams to realize this early ambition, there was nothing else to do but pack young Alphonse off to England where he would at least learn a foreign language and, since he was given hardly any money,

learn to face life the hard way and show what he was made of. This trip to England was Bertillon's first stroke of luck and influenced his whole life. Not only did he adapt himself thoroughly to the English outlook and way of life, but he learned to write and speak English fluently, which later proved very useful.

His next stroke of luck, strangely enough, was his military service at Clermont-Ferrand in the centre of France, which seems to have left him plenty of leisure. So much so that Bertillon was able to attend courses at the faculty of medicine and work in the anatomical theatre measuring and comparing the length of human bones. A strange way, indeed, for a young soldier to spend his spare time, but perhaps not so strange after all since Bertillon was merely following a family tradition, playing over once again the games of his childhood.

Bertillon's father, Louis-Adolphe, a doctor by profession, was one of the founders of the internationally-known School and Society of Anthropology of Broca. All his children, including Alphonse, were used to hearing their father, grandfather and their friends holding lengthy discussions on statistical and anthropological problems and the instruments for measuring the human body; and soon they learned to use these instruments.

This explains young Alphonse's bent for anatomy. But ofter several happy years in the army he had to face up to the hard realities of life and find himself a job. His first experience as a clerk in a bank was short-lived since he was soon dismissed for his untidy handwriting and unruly conduct. In desperation, he took a job as clerk at the Paris police headquarters where his father had influential friends.

This proved to be his third stroke of luck and the turning point in his career. By chance he was assigned to the office responsible for copying out the index cards of the offenders committed to the cells each day, where the records of habitual offenders had to be sorted out from among the others. And as Bertillon was of an independent disposition and hated routine work, he could not bring himself to accept the stupid procedure of his office and set out to improve it by the only means at his disposal, the only scientific methods within his range of knowledge.

Thus, between 1878 and 1882, was born the science of anthropometry. It cost Bertillon an amazing amount of effort to work out his methods. As Prof. Sannié writes: "He made up for the gaps in his knowledge by tenacity and unremitting efforts... the saying that 'Genius is an infinite capacity for taking pains' is pre-eminently applicable to him."

The trait of obstinacy in Bertillon's character was probably at the root of his life-long distrust of fingerprints as a method of identification, though many people today still believe him to be the "inventor" of this method. In spite of the opinion of experts in this field, Bertillon maintained that it was impossible even to begin to classify people—especially large groups of people—on the basis of their fingerprints.

Yet in 1902 Bertillon was the first to identify a criminal who was entirely unknown to the police except by the marks of his fingers on the glass panel of a piece of furniture which

had been broken open after a murder. "With the help of these marks", writes Prof. Sannié in "Impact", "Bertillon reconstructed the murderer's fingerprints and then, with infinite patience, worked systematically through his cards, on which fingerprints served merely as a basis for subdivisions. He finally discovered a previous offender whose fingerprints were identical with those found at the scene of the crime." The man was subsequently arrested and confessed.

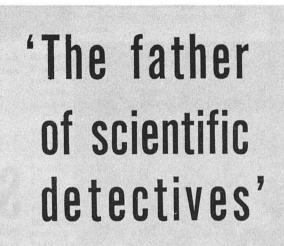
But stubbornness and thoroughness often go hand in hand, and it was probably these characteristics allied to brilliance which made Bertillon a pioneer in his field. "He undoubtedly invented the art of criminal identification", writes Prof. San-

nié, "introducing into police methods the techniques and reasoning of a real science, namely anthropology."

Long before Bertillon's time, people had thought of making a plan of the scene of a crime and then photographing it, but the process was still too complicated to form part of a policeman's everyday duties. Similarly, though specialists had thought of collecting material evidence and studying it in a laboratory, no one before Bertillon had had the idea of setting up a special body for this purpose. In both these fields, the work done by Bertillon represented the establishment of a full-scale laboratory for scientific detection.

But it is the *portrait parlé* which remains his most important discovery and one which has stood the test of time. Scarcely anything is left of the system of anthropometry, for Bertillon's photographic methods and apparatus have now been superseded by more advanced techniques. But visual identification is still, and will continue to be, what it was when invented by the genius of Bertillon.

"His work", writes Prof. Sannié, "opened up a new era in criminal investigation... He brought to the police, which had previously worked on a purely empirical basis, the attitude and methods of the experimental scientist... The impetus which he gave to accurate research on evidence and the attitude of mind he introduced into the police force have continued to make steady progress ever since."



^{(1) &}quot;Impact of Science on Society", December 1956. Annual subscription : \$1.75; 9/6; 450 fr.

OLDEST PERSIAN MINIATURES YET FOUND





An honest shepherd is shocked to see his master adding water to the milk of the ewes.

INCE the publication of its January issue in colour, devoted in part to Persian miniatures, THE UNESCO COURIER has received a report of the recent discovery of 109 Persian miniatures which represent the oldest yet found. The miniatures decorate the original manuscript (or a contemporary copy) of the Andarz Nameh, a collection of sage counsels, admonitions and tales written by Kabus Vushmgir, a Persian ruler on the shores of the Caspian Sea in the 11th century. Until this discovery it had hitherto been believed that the earliest extant Persian miniatures dated from the end of the 13th century following the Mongol invasions, when Iran was thoroughly ravaged, its cities were sacked and its great libraries containing thousands of manuscripts or miniatures were destroyed. This recently discovered manuscript is considered of tremendous importance both for the miniatures it contains and its literary value.

Gushtasp, an Iranian hero, showing Byzantine blacksmiths that he knows their craft.

Pen friends wanted

Frank ATKIN, newspaper worker, of 31 Brassington Road, Heaton Mersey, Stockport, Cheshire, England. Interests: human relationships, family life, "Unesco's aims of international friendship"; Will exchange magazines.

S. JOHANNESSEN, 20, of Skagvegen 25, Minde st., Bergen, Norway. Will correspond in English, French or German.

Junko ISONO, 16, girl student, of 1409 Shogamae-cho, Suita-shi, Osaka, Japan. Hobbies: reading, classical music, popular songs, philately, postcard collections.

Binsar MARPAUNG, 18, of Djalan Kartini Satu No 33, Djakarta, Indonesia, wishes to correspond in English, German or Indonesian. Interests: history, literature, philately.

Mme Odette HERRY, of 31 Ave. des Courses, Brussels, Belgium. Interests: history, psychology, philosophy, medicine, social questions, ethnography. Puts this question to readers: "What do you think are the basic causes of war?"

Margaret MARCUS, 21, of Larchmont Acres, Larchmont, New York, U.S., seeks young correspondents in Arab countries. Languages: English or French. Interests: Islamic civilization, Arab litera-ture, music of the Middle East. Will exchange stamps and publications.

Roberto A. LOPEZ CASTRO, 18, of Montes de Oca 250-Dto 12, Buenos Aires, Argentina. Languages: English or Spanish.

Miss W. LONG, 23, schoolteacher, of 117b Cheras Road, Kuala Lumpur, Malaya. Interests: music and reading.

THE POST KNOWS NO BOUNDARIES

Japan's students and schoolchildren are now sending more than 400,000 letters a year to young people in other countries through the Union of Pen Friend Clubs of Japan. Representatives of the 140,000 Japanese who are now members of this Union recently sent a message of peace to the youth of the world. "It would be a splendid thing", they declared, "if we could go to foreign countries and mingle with young people there and make friends. But as that is impossible today, we do it by correspondence. There is no boundary on earth as far as postal services are concerned; you drop a letter in the post box at the corner of the street, and it reaches your friend on the other side of the globe. Each individual letter is perhaps of little consequence, but the friendship it cherishes will, we firmly believe, contribute something to the cause of world peace". The Union of Pen Friend Clubs of Japan's address is Azabu Post Office Box No 1., Minatoku, Tokyo.

Lucie SEPULCHRE, 24, of 273 Chaussée de Tongres, Rocourt-Liege, Belgium. Writes in English, French or Spanish.

Miss M. H. Auclair, of Ets Dumoulin, 6 bis, rue des Anglais, Limoges, France, seeks French-speaking correspondents in other countries.

Robert RAMIK, 20, of Fakulta elektro, Karlovo nam. 13, Prague II, Czechoslovakia. Writes English; reads French and Spanish. Hobbies: classical music, art, postcard collecting.

Walter A. PEREZ, of Dante 1008-Miraflores, Lima, Peru. Languages: Eng-lish and Spanish. Interests: philately, reading, geography, magazines, photography.

Monique HASNE, 16, of 112, rue de Noisy-le-Sec, Bagnolet, Seine, France, seeks a correspondent in Latin America. Languages: French and English (reads German). Interests: reading, music, history, sport.

Raymond GUIBERT, of Bouille-Saint-Paul, Deux-Sevres, France, wishes to correspond in French with anyone interested in the acclimatization and rearing of small mammals.

Raul LOPEZ MALO, of Cipres No 93, Col Santa Maria, Mexico D.F., Mexico, seeks French correspondents of both sexes.

Marie-Therese ECHE, 19, of 4, rue Riquet, Toulouse, France. Seeks cor-respondents in all countries, particularly the U.S.S.R., Greece and Israel. Language: French. Interests: literature, music, travel.

Milan BUCIL, 20, of The Conservatorium of Music, I, Na Rejdisti, Prague I, Czechoslovakia. Hobbies: music, art, postcard collecting, reading, photography. Language: English.

Mile J. LAURENT, 19, of 12, rue Charles-Breuguot, Dijon, France. Language: French. Interests: sports, reading, music, philately, postcard collecting.

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From the Unesco Newsroom...

F IGHTING THE 8TH PLAGUE: Since the start of the autumn migration of locusts from breeding grounds in the Sudan and French Equatorial Africa to countries further north, the U.N. Food and Agriculture Organization (FAO) has been aiding governments to extend counterattacks against these destructive pests. A new research centre is linking up control measures in the seven African territories most frequently infested by desert locusts, and operations on the Arabian peninsula are directed from an FAO centre at Jeddah. After reports of locust movement are received, units of the control network locate and attack the swarms. Nine countries are to provide teams and eight others funds or supplies, while FAO contributes staff and equipment.

■ UNICEF IS TEN: When UNICEF (United Nations Children's Fund) came into being in December 1946 an entire generation of children was threatened by the effects of war and its aftermath. During its first four years UNICEF supplied millions of pounds of powdered milk and other foodstuffs and tons of woollens, cottons and leather to be made into clothes and shoes for needy European children. Since 1950 the Fund has been helping the 600,000,000 children in the less developed regions of the world who are threatened by what are both preventable and curable diseases. In 1955, 32½ million mothers and children were given help and in 1956 more than 36 millions. Over 60 million children have been protected against tuberculosis. Today, ten years after its foundation, UNICEF is supported by 101 countries contributing nearly \$19 million for its work.

III UMAN RIGHTS MUSEUM: In the little town of Meaux, near Paris, a museum in the children's amusement park traces the struggle for human rights in a lively, visual form, through events in French history. The work of a Paris theatrical designer, it comprises 32 dioramas of historical scenes, such as the setting up of schools by Charlemagne and the creation of libraries by King Louis XI. Added interest is given by the authentic documents, seals and other historical relics loaned to the museum by the French National Archives in Paris.

■ SCIENTISTS IN EMBRYO: There are now some 16,000 high school science clubs with a total membership of about 350,000 students in the United States. Activities are often organized on a nation-wide scale, one example being the National Science Youth Month, during which science fairs are organized by students and a science talent contest is held. Last October, 40 scholarships were awarded as prizes to potential research scientists selected from senior high school pupils.

S OVIET LIBRARY EXCHANGES: The international exchange of books, journals and other publications has become an important activity of the U.S.S.R. Academy of Sciences Library in recent years, and is carried on regularly with 1,500 scientific institutions in 79 countries. During 1955, for example, the Library sent 257,342 books to libraries abroad and received 121,198 in return. Founded by Peter the Great at St.Petersburg in 1714, the Academy of Sciences Library has amassed a rich collection of some 7,500,000 scientific works over the past two and a half centuries.

■ ATOMS AT WORK 'DOWN UNDER': New Zealand (population 2,200,000) is showing how small countries can take a share in developing atomic energy for peaceful uses through its research and use of radioactive isotopes for agriculture, medicine and industry. The' Dominion Laboratory in Wellington has also built a unit for determining the age of Maori weapons, tools and other specimens by "dating" the radioactive carbon in them, and is thus tracing the history of the country's Polynesian settlements scientifically for the first time. A New Zealand physicist said recently: "Since we are not a big industrial country, we cannot contribute on our own to the complicated technology of atomic power. But we can use nuclear techniques more widely to attack general and local problems. We should try to do something different from other countries, instead of plodding behind in the stock fields."

World Art AWARD: The International Art Prize of \$10,000 offered every two years by the Solomon Guggenheim Foundation of New York for an outstanding contemporary painting was awarded for 1956/57 to a work by the British artist Ben Nicholson. Nineteen other prizes of \$1,000 were given by the Foundation, sixteen of them for works from different lands and three as continental awards for paintings from Africa, Europe and the Americas. Judging was carried out in accordance with suggestions of three international organizations closely linked with UNESCO—the International Council of Museums, the International Association of Plastic Arts and the International Association of Art Critics.

BOOKS FOR ASIAN CHILDREN': A small but useful contribution to East-West understanding has been made by a recent UNESCO publication, "Books for Asian Children" (1) which lists 500 publications from world literature, in the original or in translated or adapted versions, suitable for youngsters in Asian countries. Compiled by Mrs. Shakuntala Bhatawdekar, formerly Children's Librarian of the Delhi Public Library, it includes titles of books suitable for age groups of 5 to 7 and 8 to 10 and for children of 11 upwards. Included in the last part are modern books on a variety of subjects ranging from art to sports.

(1) Obtainable free on request from Libraries Division, UNESCO, 19, avenue Kléber, Paris-16^e.

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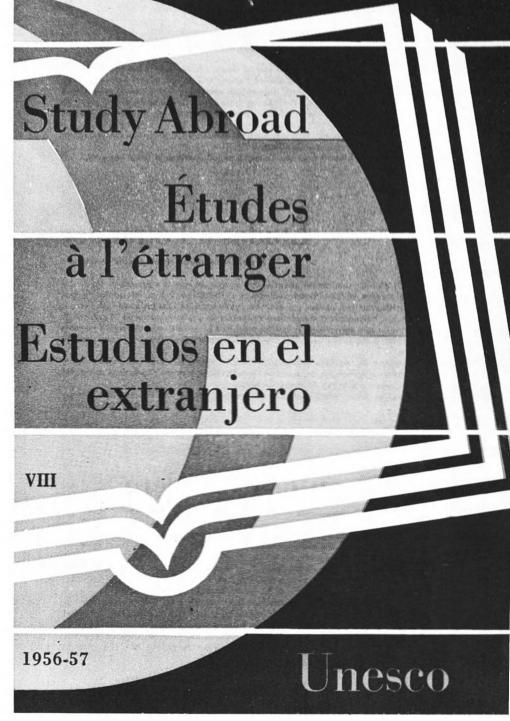
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Over 74,000 Fellowships and Scholarships offered this year



Price \$ 2.00; 10/6; 500 fr.

More than 74,000 international scholarships and fellowships offered by governments, universities, foundations and other institutions in over 100 countries are listed in the latest (eighth) edition of Study Abroad, an international handbook published yearly by UNESCO.

This total—striking when compared to the 15,000 scholarships and fellowships listed in the first edition published in 1948—includes fellowships awarded by seven countries not previously listed as donors: the Republic of China, Czechoslovakia, the German Democratic Republic, the Republic of Korea, Morocco, Panama and Poland.

As in previous years, the current edition of *Study Abroad* lists the results of UNESCO'S annual survey of foreign student enrolments at universities and other institutions of higher learning throughout the world. A survey covering the year 1954-1955 showed that an estimated total of 126,000 students were studying in foreign countries.

The survey disclosed that the United States leads the world in the number of foreign students with a total of 34,232. Next comes France with 16,041, the United Kingdom with 9,050 and the German Federal Republic with 5,368. In fifth place is Switzerland with 3,972, followed by Japan with 3,768, Austria with 3,491 and Egypt with 2,854.

The United States, according to UNESCO'S survey, also holds the lead among countries offering fellowships, with 20,587 listed in Study Abroad. Next comes France with 5,783, Egypt with 4,909, Turkey with 2,002 and the United Kingdom with 1,803. The U.N. and its agencies offer 3,727 fellowships and international non-governmental organizations another 5,624.

What do students study in foreign countries? The UNESCO survey, on the basis of reports from 19 countries, has been able to answer this question as well. The biggest group—27 per cent—is in the humanities and education. Next come social sciences and law, 19 per cent; medicine, 18 per cent; engineering and technology, 16 per cent; natural sciences, 14 per cent.



IN THE HEART OF SINAI DESERT

1000

At the foot of Mount Moses in the heart of the desert of the Sinai peninsula stands the Monastery of St. Catherine with its treasures of incomparable historical and artistic interest. (For story on monastery which was visited recently by a special Unesco mission see pages 18 to 25.)