

A STUDY
OF
FRAMBOESIA TROPICA
IN THE

MAMFE DIVISION, CAMEROONS

BY

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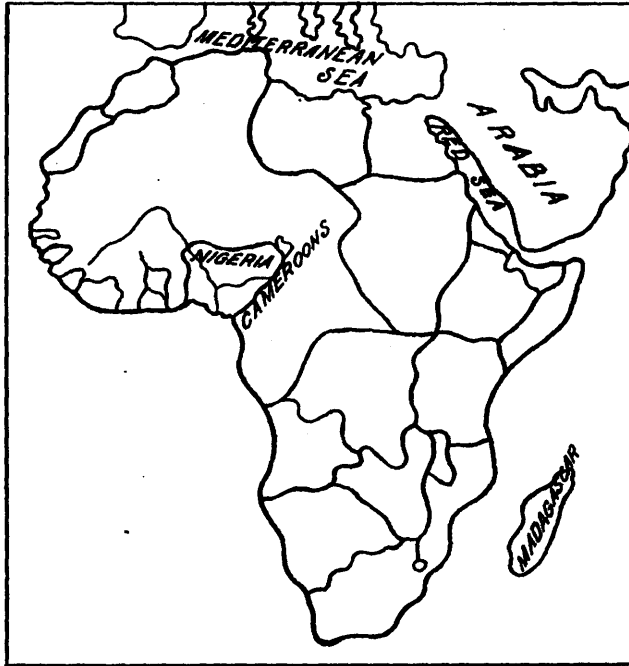
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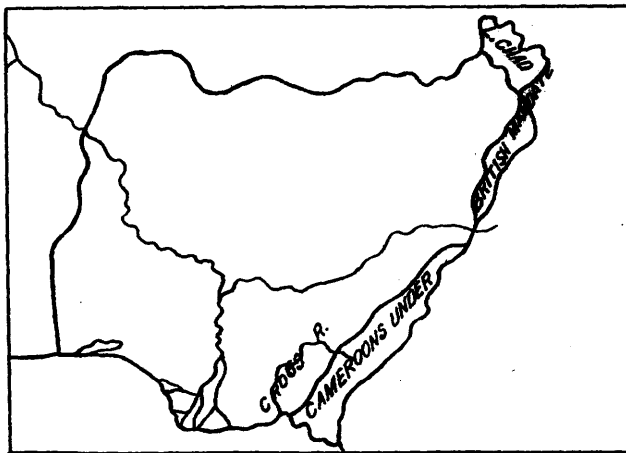
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DIAGRAM 1.

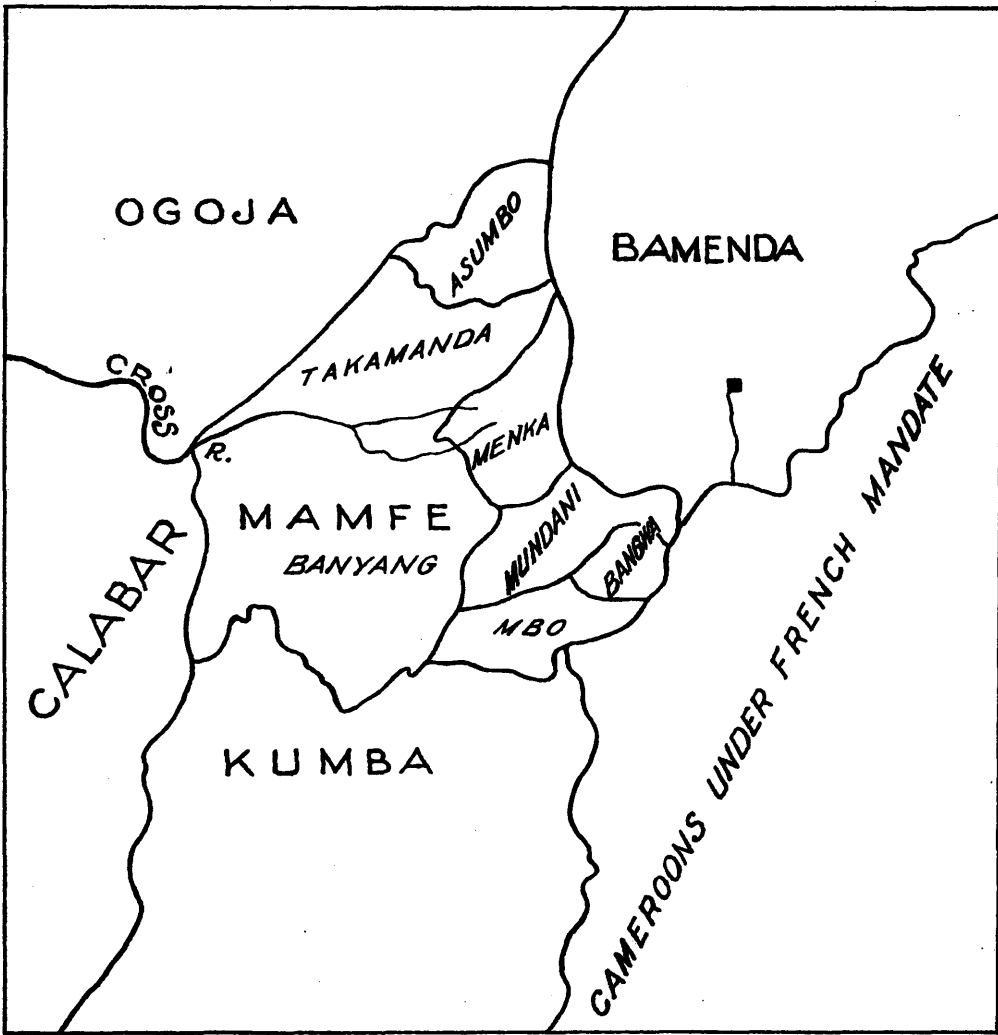


AFRICA



NIGERIA

DIAGRAM 2.



MAMFE

INTRODUCTORY REMARKS

The Mamfe Division of the Cameroons (See Diagrams 1 & 2) is mostly forest.

The extreme North and East of the division is a thin mountainous strip which, in the highest places, is capped by grassland.

Hills are fewer towards the South, and the whole division, except for the highest hills, and mountains, has trees in abundance.

The main river is the Cross River which is fed by the Bali and Mainyu Rivers.

Streams and streamlets, rivers and rivulets, abound, and these flow into the Bali or Mainyu, or into the Cross River direct.

The climate is hot and damp, and there is generally a heavy rainfall.

The tops of the mountains and hills are most invigorating, but along the banks of the Cross River the climate is very enervating, especially during the rainy season.

As the Medical Officer in charge of the hospital of the Mamfe Division there are facilities for coming in contact with the people of the division in general, and in particular with those suffering from various diseases.

The following notes on FRAMBOESIA TROPICA have been compiled from personal observation among the following clans:-

BANYANG, OBANG, IKWE, KEYAKA, MBO, BANGWA, MUNDANI, ASSUMBO and TAKAMANDA.

Excluding leprosy which is common in the lowlands, there is no other infection so widespread as framboesia.

It is very common among the people of the division.

It produces great inconvenience and incapacitation, especially the tertiary stage and sequelae, second only to leprosy. The spread of framboesia in the division may be due to the movement of the people for trade and other purposes, especially during the German occupation of the Cameroons towards the end of the last century; but it has been endemic in the division under consideration from time immemorial.

With the opening up of the roads and trade, there entered a disease not unlike framboesia tropica, namely, syphilis. The initial lesions, sites, constitutional disturbances and the sequelae which are not common among the people of the division, have caused the natives of the Mamfe Division to say that syphilis does not originally belong to the division, but has been imported by foreigners from the Coast of West Africa. Of course it should be remarked that syphilis is rife in Northern Nigeria, and there is a constant influx of Hausas and Fulanis into the division for trade purposes. There is, therefore, a good opportunity in the division for the study of both framboesia tropica and syphilis, but among these different clans true and genuine cases of syphilis are rare. In all probability the original home of framboesia is West Africa(See Diagram 1).

The Human Traffic(Slave Trade) in West Africa, during those days when men obeyed their greed and lust more than their conscience, has not only scattered the sons and daughters of West Africa all over the globe, but also has introduced into virgin soil a disease of a very peculiar character and complexity.

In this generation framboesia besides being in Tropical Africa is common in the West Indies, Fiji, Pacific Islands, Ceylon, the Malay States and Papua.

Its rarity in India and China may be due to the geographical position of these places in relation to West Africa.

Lately it has been reported that framboesia is spreading with a great rapidity in Kenya Colony, Tanganyika Territory and Uganda. The opening up of the roads after the Great War(1914-1918) is probably the cause of the unwelcome guest.

Framboesia occurs in most parts of Nigeria, but the incidence is particularly high in the Southern Provinces.

CHARACTERISTICS of the DISEASE

Framboesia is a contagious disease capable of being produced by inoculation and characterised by an incubation period, which varies considerably in length.

A mild fever(which often is unnoticeable) generally follows the period of incubation, with or without fleeting joint pains.

The appearance of a finely hypertrophied follicular patch or a scaly slightly depigmented patch at the site of inoculation which may be situated on any part of the body,(but ordinarily extra genital) and tenderness of the long bones,(forearms and legs) or the wrist joints, with or without swellings or pains, are generally the forerunners of framboesia.

In all cases(so far as the observation in the Mamfe Division reveals) one attack produces immunity against a second one.

Framboesia is not hereditary or congenital.

A breach of the surface of the skin is the essential entry whereby infection takes place.

In the Mamfe Division where more than half of the population suffers from framboesia, a pregnant woman suffering from the disease, has never been known to give birth to a child suffering from the malady.

Though a breach of the surface of the skin is necessary for infection, yet infection rarely takes place without one or two of the following contributing factors:-

CONTRIBUTING FACTORS.

1. Uncleanliness.
2. Unhygienic Conditions of Dwellings.
3. Low Resistance through previous illness.
4. Improper Diet, especially the constant intake of food containing little Protein and Vitamins, particularly Vitamin C(anti-scorbutic factor).
5. Warm and Humid Climate which plays a great part in the distribution of yaws.

Cleanliness is not one of the characteristics of the inhabitants of the Mamfe Division.

The cause may be attributed to the scarcity of water, especially during the dry season.

Besides, the idea of covering sores with leaves for days, the scarification of the body, in general, for headache, pain in the stomach or other ailments, and the keen desire not to offend the JUJU gods by seeking scientific medical aid, encourage uncleanliness and unhygienic conditions of the dwellings.

The common food in the Mamfe Division consists mainly of carbohydrates; fresh vegetables and green leaves seldom enter into the diet.

The common green leaves in use are dried coco-yam leaves and cassava leaves.

NOMENCLATURE

The following are the synonyms in use among the clans:-

CLANS

BANYANG

OBANG & KEYAKA

MBO

BANGWA

MENKA

MUNDANI

TAKAMANDA

ASSUMBO

YAWS SYNONYMS

BEFUTE

AROK

EPAH

ABUNG

ABIA or BEBAH

EQUI

OBAH or OVAH

IWON

AETIOLOGY

The primitive Africans, in general, attributed the disease to supernatural causes.

In the Mamfe Division Totemism and Spiritism still hold sway among the inhabitants as the cause of framboesia.

There is a strong belief held by some tribes that the gods often inflict yaws on an individual who disobeys their messengers or spokesmen, or who attempts to cause revolution in the town or village.

A young man disappeared mysteriously after causing a confusion

in the town-god hall.

He was found on the fourth day under a tree in the forest, and recounted to the searchers that he was transported to that spot in the night by an unknown person whose form was unlike a human being.

There he was given to eat some kind of meat and fruits which in a few minutes after produced yaws eruptions on the body.

There was a shout that the god had come down to punish an offender.

Customs among primitive people die hard.

The organism causing framboesia is ^avery delicate spirochaete called Spirochaeta pertenius (Treponema pallidum).

The literature of the early writers of the fifteenth and sixteenth century lay stress on bad vapours, swamps and food, until late in the sixteenth century when the possibility of an infecting organism was considered.

The actual organism was discovered early in the twentieth century. Today, there is no doubt whatever that the organism described by Castellani is the cause of framboesia.

The parasite of framboesia is morphologically undistinguishable from the parasite of syphilis.

The question of identity of framboesia and syphilis has been and is fiercely debated.

One of the most definite statements about the two organisms is that syphilis is acquired venereally in the vast majority of cases, but framboesia is not so acquired.

The problem of spirals is a very difficult one. ^{how?}

The Organism is strictly anaerobic.

It can be demonstrated by any one of the following methods:-

1. GIEMSA STAIN METHOD
2. TILDEN STAIN METHOD.
3. THE DARK-GROUND ILLUMINATED METHOD is used for detecting the living parasites in fresh undried films.

The organism has been successfully cultivated by Noguchi, and later Hata.

The organism has been obtained from the blood and lymphatic glands in the laboratory.

It measures from 4 millimicrons to 12 millimicrons in length, and in thickness 0.20 millimicron to 0.25 millimicron.

The spirals vary considerably, but less than that of Spirochaeta pallida.

MORBID ANATOMY

At the stage of primary yaws the yaws organism enters the lymph vessels and finds its way into the neighbouring glands which become enlarged, and the enlargement of the lymph glands is more marked during the secondary stage.

The primary and secondary yaws in some cases damage the skin on which they occur, resulting in ulcer formation with poor blood supply.

Of course these phenomena are very characteristic of the chronic tertiary stage of yaws.

Next to the skin is the lesions of the superficial bones.

Periostitis develops with or without effusion under the periosteum followed by osteitis.

After the inflammation has subsided the bone becomes sclerosed and irregular.

At postmortem there are no definite visceral changes except those of toxæmia in very severe cases.

The spleen has been found to be enlarged in two cases out of three.

The capsule of the spleen is thickened but can be easily stripped off exhibiting a dark brown organ.

On section the substance of the organ is found to be dark and congested.

The parenchyma is not clearly distinguished from the supporting structure.

Two victims out of the three postmortem examinations performed though suffering from framboesia, died of other disease - one of pneumonia, and the other of head injuries.

It is very difficult to say whether the enlargement of the spleen is due to intercurrent disease or not; but it should be noted, however, that malaria is a common affection in the tropics.

In a paper by De Wyt(1943) on West African troops, Evans and Knock add a note on the pathology of yaws ulceration.

They conclude that periarteritis and endarteritis are less severe than in syphilis.

Yaws granulation tissue is more vascular.

TABLE 1.
TABLE OF THE IMPORTANT CLANS
SHOWING
YAWS CASES & AGE INCIDENCE

CLAN	CASES	AGE GROUP				
		2MTHS.-5YRS.	6-20YRS.	21-30YRS.	31-50YRS.	51UPWARDS
BANYANG	300	125	150	15	12	3
BANGWA	400	90	125	120	40	25
MUNDANI	200	40	85	45	20	10
MBO	300	75	120	50	25	30
ASSUMBO	120	25	45	30	10	10
MENKA	80	35	42	3	-	-
TAKAMANDA	100	42	55	2	-	-

AGE INCIDENCE

In Jamaica 70-80% of persons between 15 and 20 years are infected with framboesia.

The peak is said to be about 18 years of age, and fewer after 30 years.

In his "History of the Introduction of Yaws into India", Powell states that the disease is most common from 2 to 14 years of age.

In the Mamfe Division the age incidence among the clans is as follows(See Table 1):-

1. Among the Banyang - 2 months to 20 years. Rare after 20 years.

The Banyang Area is bounded on the East by Bamenda, Bangwa and Mbo; on the South by the Keyaka Tribe; on the West by the Boki and Anyang Tribes; and on the North by Menka.

Throughout the area the villages are formed of long lines of huts on each side of the road.

The family compounds are of two types:-

1. A long line of connected huts.
2. A square compound with the houses built round and opening into the compound.

The area is a dense forest land, mainly flat, with a few prominent hills.

Thunders and lightnings are very violent with a heavy rainfall.

The climate is warm throughout the year except for six weeks during the middle of the rainy season when it is moderately

warm.

2. Among the Bangwa, Mundani, Mbo, and Assumbo - 6 months upwards.

Yaws are prevalent even among men and women of 60 years of age. The Bangwa Area is situated in the east of the Mamfe Division, and the watershed which extends along the eastern side of the area forms the existing international boundary with that part of the Cameroons under the French Mandate.

It is hardly an exaggeration to say that there are not fifty square yards of level ground to be found in the entire area unless levelled by artificial means.

There are no villages or hamlets, in the ordinary sense of the word, the inhabitants dwell in a number of compounds which are scattered over the mountain side, generally in a position sheltered from the wind, and frequently quite invisible.

The inhabitants live on a range of mountains varying in height from three thousand to seven thousand feet approximately.

The compound of a Clan Chief is of more imposing nature, each wife has a hut about ten feet square; and there may be as many as one hundred wives; and in addition there is the meeting or council house (DEINDE) and each servant (CHINDA), who is often an adviser of the Chief, has his hut.

The Chief's compound may therefore contain as many as one hundred and fifty huts.

The variation of temperature is very noticeable at the different heights; and during the rainy season (which occupies a greater part of a year) the temperature falls considerably in the evenings.

Close family life is the rule.

The Mundani Area is situated in the north-east portion of the Mamfe Division.

The inhabitants dwell on a range of ~~of~~ mountains which is continuous with the Bangwa range.

The altitude varies from two thousand feet in height to five thousand.

The features of the area, the customs of the inhabitants, and the dwellings are similar to those of the Bangwa.

The Mbo Area is situated in the south-east corner of the Mamfe Division.

The area is mountainous with deep valleys.

The mountain ranges stretch into the French Mandated Territory of the Cameroons and the Bangwa and Mundani Areas in the north.

The inhabitants live on the mountains, and the villages which are in groups are widely scattered.

The view at some of the heights is nothing but ^a sea of mountains.

Throughout the year, but for a few weeks in the early part of the former rain, the area is covered by wet clouds which make the district to be very cold in the evenings.

Life is very primitive and family ties are very strong.

The Assumbo people inhabit the magnificent mountainous area forming the northern part of the Mamfe Division of the Cameroons.

The shape of the area is like an isosceles triangle drawn by a child.

The area is extremely mountainous and is traversed by a magnificent range running roughly west north west, throwing out huge subsidiary spurs which are separated from one another by deep wide valleys.

The rainfall yearly is very high, and thunder-storms are the most violent variety.

During the dry season the climate is pleasant, but damp and unpleasent during the rainy season.

The inhabitants live in groups on the tops and ledges of the mountains.

The climate is generally cold during the day, and extremely cold in the evening.

3. Among the pople of Menka and Takamanda - 6 months to 10 years.

Rare from 15 years upwards.

The Menka Area forms a rough isosceles triangle whose base is the River Moma.

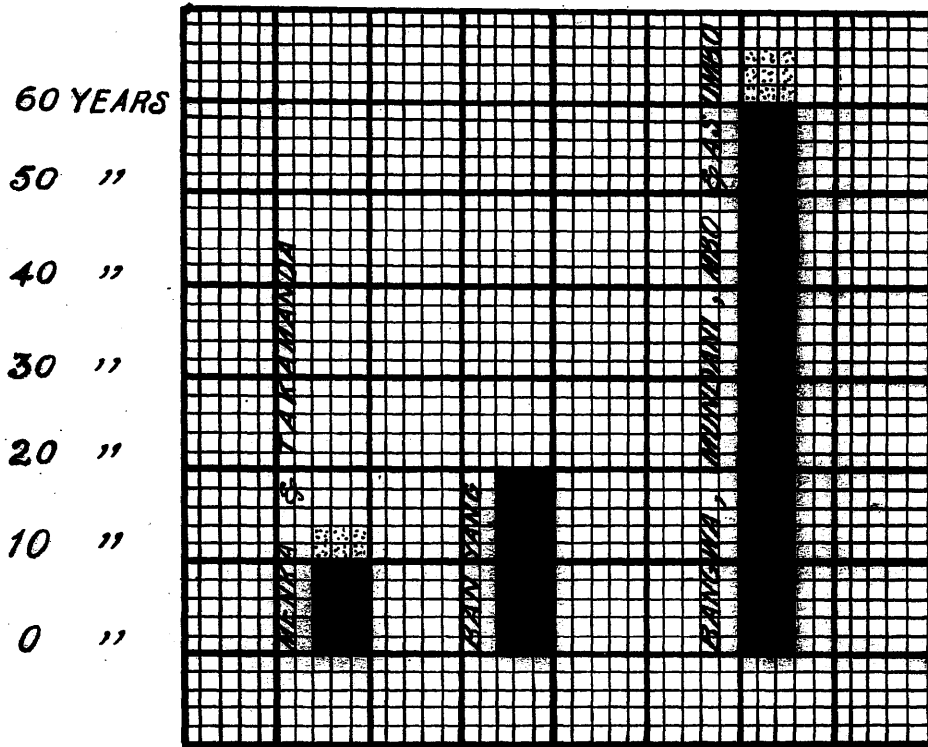
The area is principally forest and only the summits of the ridges are grass covered.

The forest belt ends at three thousand feet (approximately) in height, and at this level the majority of the villages is built.

The main ridges rise to seven thousnad feet.

In the dry season the climate is delightful, particularly on the mountains; but during the rainy season the whole countryside is obscured for days by thick mists, and on great heights a raw cold pervades the atmosphere.

DIAGRAM 3.



COMPARISON OF AGE INCIDENCE
OF FRAMBOESIA TROPICA
IN THE
MAMFE DIVISION

The climate is moderately cold.

The Takamanda Area is bounded on the North by Assumbo; on the East by Bamenda and Menka; on the South by the Cross River; and on the West by Ogoja Province.

The striking feature of the area is the Manta Hills and the big mountain ranges that dominate the country from the North and East.

The area itself is broken without being hilly, and it is particularly well watered.

The rainfall is of average heaviness, and the climate is warm except for two months in the middle of the rainy season.

From the records regarding age incidence of framboesia tropica in the Mamfe Division, the following have been deduced

(See Diagram 3):-

- a. Framboesia is very prevalent in the cold districts and common among all ages.

This is partly due to the fact that the people living in the mild and cold districts - Mundani, Mbo, Assumba and Bangwa - do congregate generally in the little huts around the fire, and thereby inoculation is easy.

- b. In the warm and cold district - Banyang - framboesia runs high and low in accordance with the season.
- c. In the mild districts where people have less fires in the huts for warmth - Menka and Takamanda - framboesia is confined to the children.



Fig.1 - Primary Yaws
of the upper lip.

SYMPTOMS

The symptoms of framboesia are divided into three distinct stages:-

1. The Primary Stage.
2. The Secondary Stage.
3. The Tertiary Stage.

PRIMARY STAGE

The incubation period of framboesia varies considerably. The range as obtained by observation is 2-9 weeks.

There are no definite symptoms or signs during the period of incubation, but in some cases there may be malaise, irregular mild fever, anorexia and diarrhoea.

Diarrhoea of no definite origin with irregular mild fever(not controlled by quinine) with or without fleeting joint pains, especially in children in an endemic area, is generally the prelude to the outset of framboesia.

The primary lesion appears as a papule(rarely as a granuloma) in any part of the body, and often is so small as to escape detection.

As the people in the division, even children, suffer greatly from cutaneous skin lesions, the detection of the primary lesion is the more difficult.

In a few cases through a period of observation, the following sites have been noticed:-

1. The mouths of babies
2. The upper portions of the backs of the mothers.
3. The breasts of wet nurses.
4. The axillary folds.
5. The buttocks.
6. In the male and female adults the genitalia have been the site of the primary lesions which are always multiple.

In a series of 55 cases of primary yaws the genitalia are the seat of the primary lesion in one case only(1.8%).

Moss and Bigelow in their large series have one per centum(1%).

These primary lesions last from 2-9 months.

Later the lesions become large and are covered with a yellowish hard secretion - "mother" or "master yaws" or "mama pian" of the French writers.

It is interesting to remark that all the primary cases seen give

1. A definite history of injury on the site of and previous to the lesion; or the site of a crawcraw healed or partially healed.
2. A voluntary statement of association with some individual with an infectious type of yaws lesion.

At the stage when the primary lesions become large and are then covered with a yellowish hard secretion, some definite symptoms and signs show themselves, but not in all cases:-

1. Malaise.

15A



Fig.2 - Secondary Yaws on the back and extremities.

Fig.3 - Secondary Yaws on the neck, back and extremities (Varicella Type).



Fig.4 - Secondary Yaws (back view)



Fig.5 - Secondary Yaws of the nostrils. The lesions affect the nose badly thereby suggesting Gangosa.



g.6 - Secondary Yaws
on the penis, elbow and knee
with ulcerative lesions of
the fingers.



Fig.7 - Secondary Yaws
in mother and child, and
Ulcerative Yaws Lesions on the
left leg of the grandmother
who was too shy to face the
camera.



Fig.8 - Secondary Yaws
on the face and extremities.
"Sepui" has been applied.



Fig.9 - Vaccination Ulcer superimposed
by Secondary Yaws.

2. Pain in the joints, especially the small joints.
3. Persistent crying day and night for about 3-5 days in case of babies.
4. The temperature is raised (99° - 100° F) especially in case of children.
5. In children, rigor or convulsion may be present.
6. There is hardly any change in the pulse or respiration.
7. Pain in the long bones and lower part of the back.
8. Anorexia, nausea (sometimes vomiting) and diarrhoea.
9. In some cases the adjacent lymphatic glands are enlarged.

SECONDARY STAGE

At the late stage of the definite symptoms and signs of the primary stage, patches of desquamation are formed irregularly.

Their shapes vary very considerably, and two or more may coalesce.

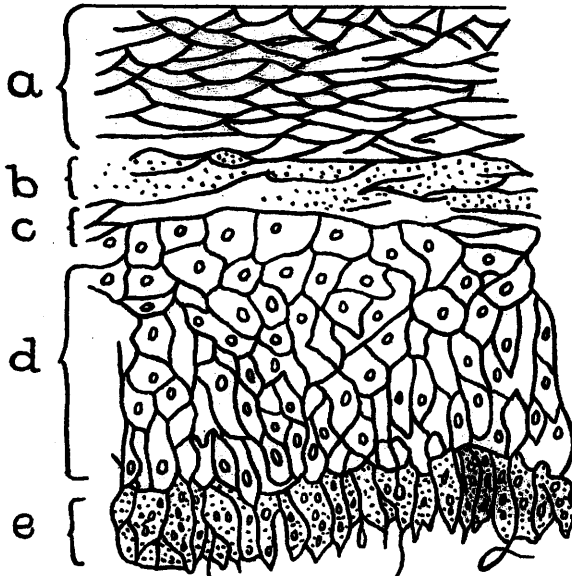
These patches of desquamation occur throughout the attack in some cases (40%), and in a few cases (10%) reappear during the course of the disease when they have once disappeared. In a few cases (15%) no patches of desquamation are formed. After a few days (5-15 days) minute papules which vary in size, appear in the patches.

This may be termed the "yaw stage" of the secondary lesion.

One of the most characteristic phenomena is the intense

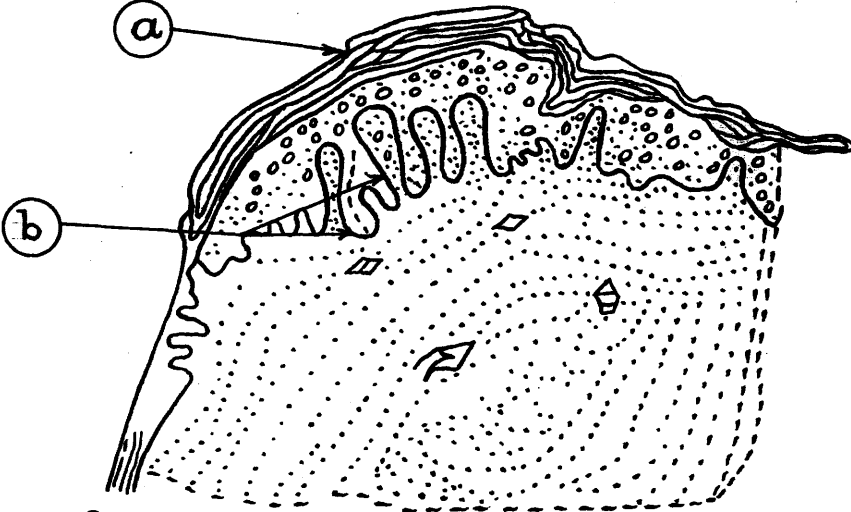
DIAGRAM 4.

THE EPIDERMIS (HUMAN)



(a)
(b)
(c)
(d)
(e)

STRATUM	CORNEUM
STRATUM	LUCIDUM
STRATUM	GRANULOSUM
STRATUM	MUCOSUM
STRATUM	GERMANATIVUM



SECTION OF YAWS PAPULE
UNDER THE MICROSCOPE SHOWING
(a) HYPERTROPHY OF EPITHELIUM
(b) DOWNGROWTH OF PAPILLARY

TABLE 5.
TABLE SHOWING THE FINDINGS
OF
SPIROCHAETE PERTENVIS
IN
YAWS LESIONS

TYPES OF LESIONS	CASES EXAMINED	GIEMSA STAIN	Per Centage
		CASES POSITIVE	
PRIMARY	20	2	10
SECONDARY	150	118	78.6
TERTIARY	25	—	0
ULCERATIVE YAWS	10	—	0
PLANTAR OR PALMAR YAWS }	26	—	0
YAWS ULCER	18	—	0

itching produced by the "sores".

Children, of course, scratch these "sores" until these minute papules form a sore as large as a sixpence or a shilling peice or in a case of large papules their co^lasecing forms sores as large as half-crown piece or more.

Auto-inoculation is common at this stage, particularly of the nostrils, lips, axillae, genitalia and anal region.

As a yaw reaches the stage when the apex is yellowish and hard it may take one or two courses:-

1. The apex may become depressed and the yaw die away leaving a mark at the spot.
2. The yaw may progress and the yellowish hard substance at the apex continues to expand until it forms a complete covering on the tumour.

This is how a typical yaw is formed(See Diagram 4).

If the yellowish hard substance at the apex be removed, pale yellowish serum oozes out.

The serum generally contains the spirochaetes in abundance (See Table 5).

A yaw produces no pain when touched by acid(pure or dilute), and it is not sensitive per se.

The duration of the maximum development of a yaw is 6 - 8 weeks.

After this period it becomes stationary for a time, 3-7 weeks, and then begins to shrink.

The secondary yaws lesions last from 4-10 months if untreated.

TYPES OF ERUPTION:

There are several types of yaws eruption, but in the Mamfe Division the types most commonly seen are:-

1. Macular Eruption.
2. Folliculo-papular Eruption.
3. Framboesioma Eruption. (Button Eruption)
4. Varicella-like Eruption.

TERTIARY STAGE

About 10% of the yaws are not absorbed, but break down and form large indolent ulcers or sores which generally resist all treatment for years.

Such sores are common on the lower parts of the legs and forearms.

Of course these sores or ulcers are non-infective.

The Late Manifestations of the tertiary stage are:-

1. A scaly conditions of the palms of the hands which may last for a life time.
2. Discoloration of the hands, forearms, legs, penis and scrotum.
3. Multiple dactylitis
4. Foot yaws or "crab yaws" which are due to the development of yaw or yaws on the sole of the foot. This late manifestation is one of the most pitiful results of framboesia, as motion is often hindered, and the condition may last a life-time. Deep fissures and cracks are frequently observed.

18A



Fig.10 - Yaws Gummatous Ulcer of the leg.



Fig.11 - Gangosa (Ulcerative Stage) showing but slight lesions externally.



Fig.12 - Gangosa (Chronic Stage)



Fig.13.- Infected Gummatous Ulcer of the dorsal aspect of the hands and fingers. The index finger has been naturally amputated. The middle and ring fingers are following the fate of the lost index finger.



Fig. 14 - Yaws Ulcerative Palmar Lesions.



Fig. 15 - Tertiary Yaws
in a cretin born 1918.
Note periosteal nodules on
the elbows and knees.



Fig. 16 - Chronic Yaws Ulcer
on the Tendon Achilles.
Note Talipes equinus.



Fig. 17 - Non-Ulcerative Plantar
Yaws Lesions.



Fig.18 - Non-Ulcerative Plantar Yaws Lesions.



Fig.19 - A group of yaws cases - mothers and children. "Sepui" has been applied on the lesions of the patient on the extreme left front row.



Fig.20 - A group of yaws patients - mothers and children.



Fig.21 - Chigoes or Jiggers on the toes, feet, and soles of the feet.

5. Onychia of fingers.

SEQUELAE OF FRAMBOESIA

1. Deep depigmentation of the legs, forearms, penis and scrotum are common.

These parts present the same appearance as in Albinos.

2. Talipes equinus which is due to yaws ulcer or ulcers affecting the Tendon Achilles(4%).

3. Gangosa(Gangosa rhinopharyngitis mutilans) 1%.

This condition is chronic destructive ulceration of the nose and pharynx.

The ulceration spreads slowly attacking the palate or uvula first, then the hard palate, cartilages, and bones of the nose.

Sometimes the larynx and even the face are affected, but more commonly the upper lip is unaffected.

The ulceration which is foul and offensive may be arrested spontaneously during the period of spreading even before any damage has been done.

The condition is said to occur at any age, but in the Mamfe Division it has been observed mostly about the adult age(40 years upwards).

4. Chronic periosteal nodules and chronic osteitis.

These two conditions go together and are very common(60%).

The anterior aspects of the tibiae are the common sites.

5. Chronic synovitis is very common, and it is associated with bone lesions.
6. Juxta-articular nodules are generally multiple, and appear in the neighbourhood of the joints, especially the knee-joints.

In a few cases their appearances in other parts of the body have been noted.

These tumours composed mainly of fibrous tissue, are painless, apart from any pressure symptoms, and rarely suppurate.

Any observed to have suppurated have done so because of scarification - the belief that the tumours are a collection of blood.

7. Goundou(osteo-plastic periostitis of the nose).
This condition has been seen only in a case of an adult female.
8. Ganglia(5%) on the flexor and extensor tendons in the wrist and forearm, and on the dorsal aspects of the hands are common.
9. Gummata.

Gumma occurs mostly in an untreated framboesia, and it commences as a subcutaneous nodule of a semi-firm consistence which may be single or multiple.

Whenever the tumour breaks down and pyogenic infection sets in, healing is prolonged and the end result may be the formation of scar and cicatrisation.

Pressure symptoms due to gumma have been noted.

10. Ichthyosis.

Dryness, roughness and scalliness of the skin, due to hypertrophy of the horny layer, is common.

11. Deformed Fingers and Toes.

These are the result of bad treatment, or the use of corrosive in the case of yaws ulcer on the dorsal aspects of the hands, or the soles of the feet.

Gangrene has occurred in two of the cases seen.

12. Paraplegia and general paralysis have not been observed in the Mamfe Division.

MORTALITY

In 1500 cases specially studied(See Table 1) only one died of framboesia per se.

In yaws-infected districts the male children mortality is greater than that of the female.

It may be stated that yaws mortality in the Mamfe Division ranges between 0.05% and 0.2%.

From the statistics collected by Nichollis one infers that the mortality from framboesia must be indeed very low.

MORBIDITY

The morbidity of framboesia varies immensely from mere inconvenience to a very marked deformity and paralysis.

In the Mamfe Division the two most disabling factors are foot yaws or "crab yaws" and onychia of the fingers, as all travelling is by foot and farming the only occupation.

The towns and villages, fields and farms are widely separated by mountains and rocky hills, by deep valleys and rivers, so that the paths are very rough.

Hence a sufferer from foot yaws becomes nothing but a beggar, and the plight of a farm labourer suffering from onychia is but little better.

POINTS IN DIAGNOSIS

1. A mild continuous fever (without any obvious cause) with or without fleeting joint pains.
2. A considerable sudden amelioration of a mild continuous fever, with or without fleeting joint pains, in a course of a few days.
3. In an endemic area, a painless insensitive wart-like granuloma with a dirty yellowish crust is almost certainly framboesia (80% to 90%).

DIFFERENTIAL DIAGNOSIS

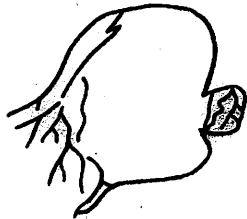
1. Varicella Rash, or Morbilli Rash may resemble some eruptions of framboesia.

But the distribution, the period of appearance of the rash, and the time that the disease lasts, should give a good guide.

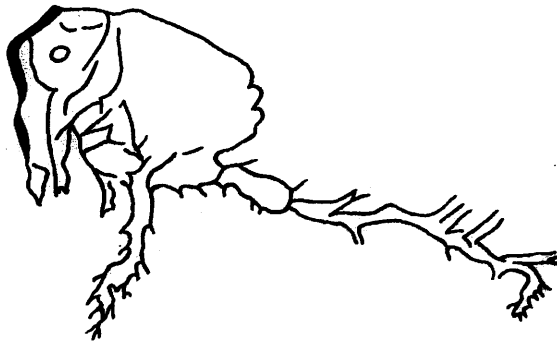
Of course microscopic examination of the serum settles the question.

It is sometimes impossible to distinguish clinically between the late stage of varicella rash and the late stage of secondary yaws in the Mamfe Division, due in

DIAGRAM 5.



EGG OF TUNGA PENETRANS



CHIGOE OR JIGGER
TUNGA PENETRANS

particular to want of genuine history and the bad condition of the skin.

2. Dermatitis and Crawcraw.

The position of the lesions and absence of crust are very important.

There are often scratching marks with open fresh wounds in the case of crawcraw.

There may be a mixture of yaws and crawcraw.

3. Chigoes or Jiggers (Tunga penetrans) (See Diagram 5).

These may be confused with framboesia in the tertiary stage when the lesions are marked on the soles of the feet.

But chigoes or jiggers mostly affect the toes.

When the soles of the feet are infected en bloc there are always the signs of penetration.

4. Leprosy.

Bacillus leprae are found in the nasal smears made from scraping the nodule or patch.

In case of neural leprosy when the organism cannot be easily found, the thickening of the nerves which are palpable, associated with the characteristic lesion and rash, should be a good guide.

5. Syphilis

The problem of syphilis and framboesia being the same disease in various degrees of virility, has occupied the medical world for a long period, and, in all probability, will be debated, if not as long as time is, at least for

some generations to come.

The workers in Jamaica are said to have so advanced in the problem of syphilis and framboesia as to say that each is a distinct and separate disease, and have stated that "many of the lesions of framboesia are so

characteristic that diagnosis is very easy to laymen."

Admittedly, so it is said by some of these workers, the tertiary stage still presents a different proposition.

From evidence adduced by various writers on framboesia, there is no doubt that its epidemiology is greatly

influenced by certain CLIMATE and GEOLOGICAL CONDITIONS which though they play no part in the response of the

individual to the infection, do effect some factor, in all probability an insect, lying outside the ^{host} host.

So far as it is known at present, syphilis is not influenced by any factor outside the human host.

In the Mamfe Division syphilis is rare; and those infected with syphilis are not except from framboesia.

Such an occurrence has been observed in some parts of Southern Nigeria where framboesia and syphilis are prevalent.

From personal observation and experience I consider the two diseases to be distinct.

This statement is based on the following observations:-

FRAMBOESIA

1. An attack of framboesia does not prevent an attack of syphilis.
2. Framboesia is not hereditary or congenital.
3. The constitutional disturbances are very light except in the case of infected yaws or yaws ulcers.
4. The initial lesion is generally extra-genital and is nearly always multiple 90%(Mamfe Division).
5. The initial lesion forms a friable crust and is similar in appearance to the lesions of the secondary stage. In characteristics it is larger and of longer duration than chancre.

There is a chronological order of yaws lesion, if untreated, namely, primary lesion, secondary lesion, tertiary lesion, and sequelae.

In 65 cases of tertiary yaws a strict enquiry was made of every case as to the history of the development of the lesions, and the result was as follows:-

5 cases(7.7%) gave a good knowledge of the different stages of the development of the primary, secondary, and tertiary lesions.

45 cases(69.2%) gave a knowledge of the secondary and tertiary lesions.

15 cases(23.1%) gave a mixed and unreliable history of the lesions.

6. Enlargement of the neighbouring glands(if occur) is

variable

multiple, and well marked on, but not firm and nodular. Secondary infection of the glands is common.

7. The mucous membrane is not directly affected except by spread from cutaneous border.

12 cases of secondary yaws of the lips with spread to the mucous membrane of the lips from the cutaneous borders, have been seen.

9 cases, besides the finding of the yaws organism in the lesions, have also pyogenic organisms.

8. Visceral lesions are very rare.
9. Nerve lesions are less frequent and of less serious consequence.
10. Cardio-vascular lesions are unknown in the Mamfe Division.

SYPHILIS

1. An attack of syphilis would not prevent an attack of framboesia.
2. Syphilis is congenital and hereditary.
3. Constitutional disturbances are great, and the vital organs are often attacked.

Syphilis may be termed - "Disease producing Old Age prematurely."

4. The initial lesion is usually on the genitalia, but extra genitalia when acquired non-venereally.

Out of 72 cases of syphilis seen in 1944, only 10 cases (13.9%) had the initial lesions on the lips and

mouths, while the rest had the initial lesions on the genitalia(86.1%).

In the case of framboesia only 2 case(0.18%) in the same year were seen to have the initial lesions on the genitalia out of 1052 yaws cases.

5. The initial lesion, commonly called chancre, is, indurated - a granuloma with its surface uneven. If syphilis be untreated there is no hard and fast rule regarding chronological order; frequently more than one type of lesions may be present in a patient at the same time.
6. Enlargement of the glands are less pronounced and of a firmer consistence. They are often described as being "shotty" to the touch.
7. The mucous membrane is often attacked directly. Among some recent cases of syphilis in the Mamfe Division, one had chancre of the lip; two had the lesions on the vulva; and one chancre of the meatus of the penis.
8. The occurrence of the visceral lesions is common. Gummas of liver, testis, kidneys, brain et cetera do occur.
9. Nerve lesions are common and of a very serious consequence. Among the common ones are paralysis(cranial) & gumma (brain and spinal cord), general paralysis of the insane.

10. Cardio-vascular lesions are common - arteriosclerosis, arteriosclerosis, mesaortitis, aortitis, aneurysm, myocarditis.

INFECTIVITY

Framboesia is very contagious.

The infectivity is greatly aided by uncleanliness, humidity and congregation.

The fire-side congregation of the people of the division at sunset makes infection easy.

Adults as well as children are equally infected.

Females, however, show a higher per centage of infection than the males.

Taking the division as a whole 60% of the population in the division has the disease at some time in their lives.

Over 25% (25-30% approximately) of the population has definite sequelae of yaws.

The rapidity of the spread of yaws in a village is very interesting.

A child suffering from yaws arrives with manifest lesions.

He plays, eats, and sleeps with the other children and adults.

The first batch of infections occurs in 3 weeks.

In the course of 6 months the disease in the village is yaws in full bloom.

In a small village of 125 persons a child of 9 years of age returned from a visit of his grandmother residing fifteen miles away.

TABLE 3.

TABLE SHOWING CONTAGIOUSNESS OF YAWS

(SEE INFECTIVITY)

POPULATION OF THE VILLAGE = 125 PERSONS

INFECTED PERSONS = 55 i.e. 44%.

40 CHILDREN (6 MONTHS TO 15 YEARS)

15 ADULTS (16 YEARS UPWARDS)

SITUATION OF PRIMARY YAWS	AGE GROUP IN YEARS				
	UNDER 1 6	1-5 17	6-10 11	11-15 6	16 UPWARDS 15
MOUTH.	-	-	-	1	-
NOSE	-	-	-	-	1
FACE	-	-	-	1	-
NECK	-	-	-	-	-
TRUNK	-	-	-	-	-
EXTREMITIES (UPPER)	-	2	-	-	-
EXTREMITIES (LOWER)	-	1	-	-	-
BREAST	-	-	-	-	-
AXILLA	-	-	1	-	-
GENITALIA	-	1	-	-	-
UNKNOWN	5	13	10	4	14

TABLE 4.
TABLE SHOWING DISTRIBUTION
OF
SECONDARY YAWS
IN
55 INFECTED PERSONS
(SEE TABLE 3)

DISTRIBUTIONS OF SECONDARY LESIONS	AGE GROUP IN YEARS				
	UNDER 1 6	1-5 17	6-10 11	11-15 6	16 UPWARDS 15
ALL OVER THE BODY	4	5	3	1	2
HEAD, FACE AND TRUNK	1	-	-	2	-
FACE, TRUNK AND EXTREMITIES	-	6	1	-	2
FACE & EXTREMITIES (UPPER)	1	2	5	-	7
FACE & NECK	-	1	2	-	-
EXTREMITIES (LOWER)	-	3	-	3	4

He had contracted yaws during his visit, and arrived at the village with manifest lesions of yaws.

After a stay of 3 months in the village his two younger brothers of 1 year and 6 years respectively, whom he slept in the same bed with, had yaws lesions on the lower extremity and axilla.

Within 6 months of his return 55 persons had yaws lesions on the different parts of the body.

Table 3 and 4 show the age group in years, the situation and the distribution of the primary and secondary lesions of the individuals affected.

When one sees the disregard for the disease in any form by the people of the division, even by those who have a little knowledge of its contagiousness, one is not surprised to observe in a few months a mass infection of the people.

Dr Kumm has brought forward evidence which strongly suggests that the fly, Hippelates pallipes, is not only a potential but an actual carrier of the causative organism of yaws.

The Spirochaeta pertenius survives about 7 hours in the interior part of the gut of the fly and is probably transmitted by regurgitation.

From the table showing contagiousness of yaws (Table 3) it is observed that the situations of the primary yaws lesion are on the exposed parts, namely:-

Face 1, Extremities 3, Axilla 1, Genitalia 1, Nose 1.

Excluding the genitalia, these are the exposed parts of the

body which come in contact with the individual suffering from yaws.

The adults in the Mamfe Division use loin cloths of two yards in length to cover the loins and private parts, and thus the other parts of the body are fully exposed.

The inoculation in the infected village should be regarded as direct, that is, from person to person or through fomites.

The argument may be put forward that the inoculation might have been by the fly, Hippelates pallides of Dr Kumm, or other fly.

This can be easily be ruled off for the following reasons:-

1. The results of the specimens of fly collected in the village and around the Mamfe Station and Township obtained from the Medical Research Institute, Yaba, inter alia, is "Hippelates pallipes is the "eye fly" of Texas and Florida.
Neither Hippelates nor the other "eye fly" has been recorded as a pest in West Africa."
2. The season that the village was infected was not the period of flies.
3. The few flies seen and collected were the ordinary house fly, Musca domestica, and its allies.

The infection in the division is by direct contact; and if flies play any part it must be infinitesimal.

The secondary yaws lesions (Table 4) are widely distributed,

varying greatly in number and size.

In a few cases there have been constitutional disturbances; while others have no ill effect of the malady in any form. The majority of cases with constitutional disturbances is the debilitated and ill-fed individuals.

It may be inferred that at the stage of secondary yaws lesions inborn resistance in the individual is the deciding factor of the severity of the infection and the distribution of the lesions.

PROPHYLAXIS

Framboesia is a preventable disease, but the problem of prophylaxis in the Mamfe Division is of a great magnitude for the following reasons:-

1. The word "segregation" has never been known among the people.
2. Framboesia is regarded as an inevitable disease (especially among children) which tends to promote health, and give a good resistance to many other diseases.
3. Among some clans superstition about yaws is so strong that it would be a sacrilege to their TOTEM should this affection be wanting in a family.

At present prevention is resisted in many parts of the division.

In two small villages prophylactic experiment has been carried out as follows:-

1. Some of the houses have been rebuilt with windows, doors, and special fire places.

It should be remarked that many houses in the division are without windows, and the sleeping rooms generally have fire places both for cooking and warmth.

2. One or two small houses have been built a few yards from some of the main houses for the purpose of the isolation of yaws affected persons.

The method has been adopted because the people loathe and abhor the idea of their relatives being removed to any Infectious Diseases Camp.

3. Neither children nor adults except those tending the sick, are allowed to go into the sick room, and the sick are not permitted to go out.

4. Scratches, cuts and abrasions in all persons in the villages, are scrupulously kept cleaned and covered. The wounds are regularly dressed.

5. SEPUI which consists of a powder obtained from a kind of red wood, and mixed with water for inunction, is freely used both for bathing and anointing the body. This substance is a very good preventive even when isolation is practised in a less rigid form.

It has been introduced into some vernacular schools, and has been proved as a good preventive measure.

The method, however, is now confined to the homes, when the teachers report that books and desks, slates,

and pencils, walls of the school buildings and furnitures, are gradually changing into red colour.

6. Cleanliness of the houses and compounds is enjoined, and the value of fresh food and vegetables stressed.

The result of the preventative treatment has been very encouraging despite the adverse non-co-operative attitude of the people.

In one of these villages all the adults have been freed of the disease and about 65% of the children.

In another village the infection has been reduced very greatly.

Nearly 50% of the inhabitants are free of the infection.

The dwellings in this village are very primitive, and the habits of living are bad.

From this simple crude experiment it is justifiable to conclude that ,

1. Framboesia is a preventable disease.
2. Under favourable conditions it can be eradicated completely in a village or town.
3. Good and suitable dwellings with proper food aid the prevention of framboesia.

IMMUNITY

From observation and clinical findings it is manifest that an attack of framboesia confers immunity for life.

A history of a second attack of framboesia has never been reported in the division.

Turner making reference to framboesia in the Cameroons writes

"Several cases were seen of what was stated to be a second attack of yaws, showing that immunity can die out apart from treatment."

This statement, however, becomes a paradox when Turner adds in the same paragraph the following words:-

"Normally immunity is life time."

The sera of tertiary yaws patients and those suffering from yaws sequelae have been found POSITIVE for KAHN TEST and WASSERMAN REACTION.

It should, however, be remarked that the immunity conferred by yaws is not hereditary.

Immune mothers have been known to give births to children who in due course have been attacked by framboesia.

Of 20 immune mothers (who have become immune because they have once suffered from yaws) under special observation the children of 14 contracted yaws (that is 70%).

TREATMENT

The treatment of framboesia by the Native Medicine Man, consisting mainly of herb decoction and the application of sepi on the body, is palliative and not curative.

A certain degree of immunity is developed gradually after the secondary stage by the sufferer who, later in years, has manifest lesions of yaws sequela or sequelae.

In the Mamfe Division now-a-days the native medicine man treatment is rapidly dying away.

TABLE 2.

TABLE SHOWING THE FINDINGS
OF THE
DIFFERENT TYPES OF YAWS LESIONS
IN
576 CASES EXAMINED

TYPES OF YAWS	AGE GROUP IN YEARS					TOTAL
	UNDER 1	1-5	6-10	11-15	16 UPWARDS	
PRIMARY	-	1	1	2	2	6
SECONDARY	2	61	79	32	43	217
TERTIARY	-	-	-	8	49	57
ULCERATIVE	-	-	3	7	55	65
PLANTAR	-	-	-	2	79	81
PALMAR	-	-	-	2	43	45
ULCER	-	2	5	47	51	105

Modern Scientific Treatment.

Under this head treatment of framboesia has been carried out as follows:-

1. Hospital Treatment of Yaws - Inpatients and Outpatients
2. Mass Treatment on Special Tours.
3. Wayside Clinics Treatment.
4. Treatment of Yaws Complications.

Numbers 2 & 3 are attempts to eradicate yaws among the different clans; though they are full of interest, yet they have not been taken into account.

Table 2 shows the findings of the different types of yaws lesions in 576 cases examined in some wayside clinics.

The treatment of the out-patients requires some modification in accordance with the circumstances.

The treatment has been carried out as follows:-

1. Hygienic Measures.
2. Oral Administration of Drugs.
3. Administration of Drugs by Injection.

Hygienic Measures.

The most important measures are:-

- 1.(a) Cyllin or Lotion Permanganate(weak solution) Bath.
(b) The Application of Dusting Powder daily on the Yaws lesions.
2. A dose of Worm Mixture(Castor Oil and Oil of Chenopodium) on the following morning after admission as Ascaris lumbricoides is common among

children(95%).

3. The Dressing of Yaws Sores and Yaws Ulcers with Magnesium Sulphate Solution(saturated) daily.
4. In debilitated children MILK and PAP(a liquid food made out of maize, not unlike arrowroot) supplemented by fruits are given for some days.

Administration of Drugs Orally.

1. On admission the patient is given a purge - calomel at bedtime and magnesium sulphate in the morning - if there be any constipation.
2. One of the following mixtures is prescribed:

(a) R
 Liquoris Donovanii m v
 Timcturae Gentianae m x
 Aquae ad $\frac{1}{2}$ fl.oz t.d.s

(b) R
 Liquoris Hydrargyri Perchloridi m xxx
 Potassii Iodidi gr x
 Aquae Chloroformi ad $\frac{1}{2}$ fl.oz t.d.s

The dosage is modified in case of children.

3. Cod Liver Oil with or without Malt Extract(in case of children) or Parrish's Food and Cod Liver Oil(equal parts mixed), and Iron Tonic as follows:-

R/
 Ferri et Ammonii Citratis gr x
 Liquoris Arseni Alkalini m iii
 Aquae Chloroformi ad $\frac{1}{2}$ fl.oz t.d.s

Mercury inunction is sometimes used in debilitated children. Great care is needed as skin diseases are very common in the division(90%).

TABLE 6.

TABLE SHOWING THE RESULTS

OF TREATMENT

OF

DIFFERENT TYPES OF YAWS CASES REPORTED

TYPES OF YAWS	NUMBER	N.A.B. & SOBITA	N.A.B.	SOBITA	N.A.B. & C	RESULTS			PER CENT.
						CURED	IMPROVED RELIEVED	UNKNOWN	
PRIMARY	4	3	-	1	-	4	-	-	100
SECONDARY	16	5	6	5	-	15	-	1	93.75
TERTIARY	5	1	4	-	-	1	4	-	20
ULCERATIVE	6	4	2	-	-	2	3	1	33.3
FOOT & HAND	4	2	1	-	1	1	3	-	25
ULCER	5	4	1	-	-	4	1	-	80
CHANCROUS	5	2	2	-	1	1	4	-	20

Administration of Drugs by Infection.

The dosages mentioned are those of adults.

Children's doses are modified according to their ages.

1. SOBITA(Sodium-Bismuth-Tartrate)

The mixture is 1 grain in 1 c.c. of distilled water.

8-12 intramuscular injections of 2 c.c. or 3 c.c. each covering a period of 48-72 days are given.

The solution should be freshly prepared each day and does not cause great pain.

The mouth and teeth should be washed daily as the drug occasionally causes stomatitis.

Table 6 shows one recorded case of primary yaws and five recorded cases of secondary yaws treated with Sobita.

The result has been very encouraging.

The result of 450 cases of primary and secondary yaws treated with Sobita is as follows:-

310 cases(68.8%) have 8 intramuscular injections of 2c.c or 3c.c. each individually and have all lesions cleared without leaving any marks on the skin.

285 cases out of these 310 cases after 3 years, 4 years and 5 years respectively have no yaws lesions occurring.

15 cases(3.3%) have failed to complete the course after the fourth, fifth or ~~sixth~~ dose.

Some of them have the lesions cleared before the break, but none of these has reported.

125 cases(27.7%) have a record of bad attendance.

It should be remarked that on tertiary lesions and yaws

sequelae, except when it is used alternately with Neocarsphenamine, the drug has but little effect.

I have found the drug to be very useful when supplemented with one or two intravenous injections of N.A.B., 0.3 gramme a dose in hastening the cure of primary and secondary lesions.

2. ACETYLARSAN

The drug is put in ampoules of 5c.c each which is stated by the makers to contain a single dose for the average patient.

The drug is given intramuscularly.

6 - 8 ampoules of Acetylarsan are given for a course covering a period of 30 - 40 days.

30 cases of secondary and tertiary yaws lesions have a course of 6 injections of Acetylarsan each.

The secondary lesions have cleared completely and satisfactorily; and 12 cases out of 18 cases of tertiary yaws lesions have cleared with or without residual marks on the skin.

The remaining 6 cases of tertiary yaws lesions have been markedly improved.

The effect of the drug on yaws lesions, particularly the secondary lesions, is good, but much experience has not been gained owing to the difficulty of obtaining the drug since after the outbreak of the World War II.

Dr Wilson, however, has made the comment that Acetylarsan is a drug of immense value in Anti-Yaws Campaign.

3. STOVAR SOL

Stovarsol is a drug with a great tonic effect and well tolerated.

It has been used for mass treatment in the form of tablets of 4 grains each, 2 tablets daily for a fortnight.

Several cases of yaws have been treated with Stovarsol, but the attendance has been so much irregular that the treatment has faded away without being stopped.

No definite conclusion can yet be drawn from the use of the drug owing to the non-co-operation of the patients who have the erroneous idea that only the administration of drugs intramuscularly or intravenously can cure framboesia.

The drug is given orally.

4. NEOARSPHENAMINE (TRADE MARK - N.A.B).

The most efficient drug in the treatment of endemic yaws and in general use of yaws affection is probably Nearsphenamine.

One or two doses of 0.6 gm are quite sufficient to clear up the lesions completely.

For a clinical cure six or eight injections of 0.3gm each are generally necessary.

It is always wise to give six or eight injections of 0.6gm or 0.9gm each in order to prevent any late manifestation of the disease.

This procedure has been found to be a great precaution in the Mamfe Division.

The only drawback is the question of cost.

Table 6 shows the results of recorded cases treated with N.A.B.

N.A.B and Sobita, or N.A.B. with other bismuth preparations.

55 cases have Neoarsphenamine.

It is interesting to remark that all the patients have perfect attendance.

The second or third injection clears off the skin affections of the primary and secondary lesions.

The tertiary lesions in some cases require five or six injections before any definite progress is seen.

In the case of yaws sequelae eight or more injections may be administered with a result of a slight improvement.

In these cases the treatment can be advantageously supplemented by Sobita, Bisoxyl, Acetylarsan or any metallic bismuth preparations intramuscularly.

The detail result of the 55 cases treated with Neoarsphenamine is as follows:-

Yaws	Number	Cured	Improved	Per Centum
Primary	1	1	-	100
Secondary	19	19	-	100
Tertiary	15	9	6	60
Sequelae	10	5	5	50

10 cases of yaws sequelae have N.A.B and Sobita, N.A.B and Bisoxyl, or N.A.B and Acetylarsan, and the results are:- 6 cured(60%); 4 improved but unsatisfactory(40%).

The primary and secondary yaws cases have reported after 2 years, 3 years and 4 years showing no development of any

lesions.

The tertiary cases cured including sequelae have also reported after 3 years and 5 years and the standard of cure is still good and satisfactory.

Neoarsphenamine is given intravenously.

5. NEOARSPHENAMINE & BORIC POWDER

For an effective treatment of chronic yaws ulcer the following have been found to be very satisfactory adjuncts:-

1. Clean the ulcer by means of hot boracic fomentation for a few days.
2. Apply powder of the following composition on the surface of the ulcer:-

Neoarsphenamine 1 part

Boric Powder 3 parts,

and cover up with cellophane (for economy reason) for 5 days.

If there be any offensive odour during the period, cover cellophane with cotton wool and bandage.

3. After the period of 5 days, use dry dressing for 7 days, and repeat the operation if necessary.
4. When granulation begins to appear on the surface of the wound, use dry dressing, or acriflavine paraffin dressing.

Only as enlightenment comes to the native masses as a result of benefits made manifest can any real headway be made in the eradication of the all too prevalent *Framboesia Tropica*.

COMMENTARY ON THE CASESI PRIMARY YAWSCASE 1EBINISI of BANYANG

The complaint as given by the mother shows prodromal symptoms of a few weeks before the onset of **Primary Yaws Eruptions**.

The first rise of temperature showed the toxaemic action of the disease on the body generally.

The further rise to 102°F and 102.2°F was due to the intramuscular injection of Sobita.

The temperature dropped to 100°F, but rose to 106.6°F after the third injection.

Another rise came into play when intravenous injection was given.

The temperature afterwards ran normally.

The trace of albumen found in the urine in the first few days showed the toxic effect in the kidney.

That was of no consequence as no other abnormality was found in the urine which became normal from the second week onwards.

The rise in pulse and respiration for the first two days should not be taken into account seriously, as it was due to more or less to fright.

CASE 2NICHI KAMBA of Njungu

There was a definite statement of a prodromal symptoms of a few weeks.

A definite reaction at the administration of each injection was clearly shown by the rise of temperature. The rise after the fourth injection was never above 99°F. The rise in pulse and respiration was not high.

CASE 3

NDIP MBU of BECHATI

No definite remark about any prodromal; but patient said that he was "out of sort" a few weeks ago before the appearance of the "sore" on the left arm.

There was not much reaction with the N.A.B. injections but the first two Sobita injections showed definite reactions which were not over 100°F

CASE 4

SONDI KOKAW of MBO

The characteristic rise of temperature and the fall by lysis were well marked in this case until the fifth injection when the temperature ran more or less normal.

It is very interesting to note the sudden rise of temperature with the first injection despite the age of the patient (31 years)

There was no history of prodromal symptoms given.

OBSERVATIONS

1. The Incubation Period of Primary Yaws is 3 weeks.
2. Primary Yaws causes some constitutional disturbances which are well marked in children.

3. There ^{are} ~~is~~ generally a prodromal symptoms which are more noticeable in children than in adults.
4. The body reacts well to treatment in Primary Yaws.
5. The ^{Primary} Yaw or Yaws may be situated on any part of body.

II SECONDARY YAWS

CASE 5

MAJUYENUA of NCHAN

The history of the case is straight-forward, and the source of infection is easily surmised.

The peaks in the temperature were due to the reaction of the body to N.A.B injection.

The "reverse" peak (subnormal temperature) after the second intravenous injection showed the non-reaction of the body.

CASE 6

GIUKENG MUFOW of BANGWA

The swinging of the temperature at the first four injections showed the toxæmic effect of the secondary eruptions as the body reacted to the drug injected.

There was definitely invasion of the blood and spread of the organism.

Chamber writes:-

"There is usually a slight rise in temperature of $\frac{1}{2}^{\circ}\text{F}$ - $1\frac{1}{2}^{\circ}\text{F}$."

The rise of temperature in this case is firstly 2.8°F , and

secondly 3°F.

CASE 7

MEMBA of FONTEM

This is a short cut treatment in order to curtail the stay in the hospital on account of work.

Fortunately the patient stood well the large initial dose of N.A.B, but reacted to Sobita.

In all probability it was a delay reaction, for there was a rise of temperature when the second N.A.B was given.

The rise of temperature when N.A.B and Sobita were combined was high, but there was no delay of a return to the normal.

CASE 8

AKO of TAKAMANDA

The interesting feature of this case is the little rise of temperature throughout the treatment - 99°F at initial injection, and 99.4°F when Sobita was given.

This case seems to be one of lymphatic invasion, for despite the non-reaction of the body condition cleared off satisfactorily.

CASE 9

NEFUNGU of BANGWA

The only point of remark is the rise of temperature from 98.6 F to 100.2 F when N.A.B. was administered.

This may be due to the change of drug, or the sudden throw of foreign body into the blood stream.

The return of the temperature to the normal is a support.

CASE 10AMYI AKE of ASSUMBO

There is nothing exceptionally interesting but the usual rise and fall of temperature at each injection.

CASE 11ATEBONG AWUNJIA of FOTABONG

The temperature is the usual.

The rise to 101⁰ F when .3 gramme N.A.B was given seems abnormal as the body should have been able to withstand a higher dose than .15 gramme given on four occasions already.

The same action came into play when the second dose of .3 gramme N.A.B. was given.

The reaction may be due to the age of the patient (which is the probable) or the flaring up of the organism attacked.

CASE 12ASONG NSUA of BANGWA

Nothing of special interest.

CASE 13AKO ONEKE of OKOMOKO

It is of great interest to note that the fall of temperature after the administration of drug, particularly the first N.A.B and the first two Sobita injections, is by crisis.

It clearly manifests the perfect adjustment of the body in case of treatment of the affection, and the fact that high rise of temperature during the treatment of yaws should cause

no alarm so far there is no mixed infection.

CASE 14

NDIP ENO of NTANAKU

In some cases the tissue reacts to treatment by gradual rise of temperature until the acme is reached.

This is a case in evidence, and it is of a special interest when the age of the patient is taken into consideration.

CASE 15

OJONG NJANG of BACHUNG KAGBE

The first two injections of N.A.B and Sobita combined completely cleared the lesions on the face, neck, upper extremities, trunk, back, and thighs. The reaction of the body to treatment after the third drug was more or less normal.

CASE 16

OBASI AYOK ETTA of BESONG ABANG

The rise of temperature after the first administration of Sobita was alarming, but it dropped to the normal on the second day without much disturbance of the pulse and respiration ratio.

CASE 17

OBEN OJONG of AKAK

The short-cut treatment with large doses of N.A.B and Sobita was ~~with~~ a good result though the rise of temperature

on two occasions was fearful and produced great anxiety. The patient was seen again in August, 1944, i.e. over five years after his discharge "cured", and there were no lesion marks on the body.

In this case the Prodromal Stage, the Primary Stage and the Secondary Stage seem to have overlapped.

Such phenomenon is not the rule.

CASE 18

NSO ARREY of AFAK

This case demonstrates the fact that Sobita is as effective as N.A.B in the treatment of Secondary Yaws.

CASE 19

EKWA KEMA of METANI

Patient absconded.

CASE 20

EGBE AGBOR of BANYANG

The Prodromal Stage, the Primary Stage, (this stage being regarded as the period when the fever and pain subsided) and the Secondary Stage were distinct and wellmarked.

This definite method of progress is the general run of Yaws.

OBSERVATIONS

1. The source of infection is generally traced in Secondary Yaws.

The interval between the appearance of the Primary Yaws

and the Secondary Yaws is 3 months (approximately).

2. The body reacts early or late to treatment; and the rise of the temperature may be as high as 5° F (See Case 17). Generally the temperature does not remain high for more than two days after an injection, and is characteristic - a sudden jump and a return to the normal by lysis.
3. Constitutional disturbances are not manifested unless treatment is instituted.

Individuals with Secondary Yaws lesions move about without any regard or inconvenience.

4. A short-cut treatment with large doses of drugs to shorten the period of treatment is as effective as small doses of drugs spread over a long period.
5. The Prodromal Stage, the Primary Stage, and the Secondary Stage may overlap, and the diagnosis may not be definite until the secondary eruptions appear, particularly when the Primary Yaws is not seen.
6. In Secondary Yaws the lesions may be widely distributed in any part of the body, the scalp not exempted.

III TERTIARY YAWS

CASE 21

AWUNJA MORFAW of FONTEM BAYANGE

The rise of temperature was not high.

A period of normal temperature occurred to be followed by subnormal temperature and a return to the normal.

The result of treatment shows that Tertiary Yaws cases are not readily amendable to treatment.

Even large doses of N.A.B and Sobita in this case did not cause bodily reaction to any marked degree.

CASE 22

BESEM ETTA of BACHUNG NTAI

The points of interest in this case are:-

1. Eight intravenous injections of large doses were given without any markedly reaction of the body
2. Solitary yaws eruptions healed.
3. The scaly desquamation of the leg was cleared partially
4. The fissures of the soles of the feet remained unhealed, but there was no pain or any inconvenience on walking.
5. Patient was seen in December, 1944, after the rainy season and there was no recrudescence.

CASE 23

TABE TAYIN of EBANG

There were appreciable reactions after the administration of each injection with the exception of the last two.

Despite the massive doses of N.A.B there was no change in the appearance of the legs and palms though the hard spots were healed, and the dark pigmentations on the upper extremities were partially cleared.

CASE 24

OJONG AGBO of BANYANG

- ✓ The markedly irregularity of the temperature is a characteristic feature which may be due to the combined treatment by N.A.B and Sobita.

The duration of the affection is said to be six months, and the subject is but twelve years of age.

The last two factors may be taken as a gauge in prognosis of Tertiary Yaws.

CASE 25

KABA AYA of BANYANG

There is nothing of interest except the rise of temperature (99.4°F) on the second day after the second injection, and the rise (100°F) on the day of the fifth injection.

OBSERVATIONS

1. There is generally a history of yaws affection which was not treated by scientific method.
2. The lesions in Tertiary Yaws are protean, and the distribution is very wide.
3. Tertiary Yaws is not readily mendable to treatment.
4. Large doses of N.A.B and several injections, even up to twelve doses of .6 gramme of N.A.B., may be necessary to produce only partial cure.

The question of the cost of treatment is the problem.

5. In the very early stage of Tertiary Yaws there is a possibility of a complete cure.

Cases under the duration of one year, and of young subjects, respond often to treatment satisfactorily.

IV PLANTAR & PALMAR YAWSCASE 26AGBOR EBAI of NCHANG

It may be stated that the cardiac abnormality bears no relation to the yaws affection, for the patient has stated that she has been suffering from breathlessness and tiredness, before she was twenty years, whenever she climbed the hills on her way to the market.

With the exception of the high temperature (101.4°F) after the second N.A.B injection, the temperature runs more or less the usual course.

The report "still good on the sole of the foot" after five years' interval shows that Plantar Yaws may be cured for good, particularly if footwears be used always, specially during the rainy season.

CASE 27TAMBE OROK of BANYANG

The body reacted at the first and second administration of drug by injection.

There was a sub-normal temperature before the fourth injection which produced no great reaction.

The dose of N.A.B was increased, and the temperature rose (101.6°F) to fall by quick lysis.

The age of the patient and the duration of the disease are very interesting.

CASE 28MANG OJI of IBOH

The body reacted well to the combined treatment, though the rise of temperature was erratically abnormal, and foot lesions completely disappeared.

The age of the patient and the duration of the disease should be noted.

CASE 29NJUNGU MATUNI of BANGWA

Alternate treatment by intravenous and intramuscular injections do not cause a great rise of temperature even in young subjects, and the result obtained is generally satisfactory.

Another young subject with the duration of the disease fifteen months should have been marked "Cured" under result but for the hesitation of his inability to follow after treatment advice on account of finance.

OBSERVATIONS

1. Plantar and Palmar Yaws from clinical history is definitely a sequela of untreated Yaws.
2. Young subjects suffering from Plantar Yaws and Palmar Yaws react well to treatment and a complete cure is possible.

If the duration of the disease is short, and advice of after-treatment should be closely followed, permanent

cure is definitely the rule.

The cases marked "Relieved""Improved" should later come under "Cured", all things being taken into consideration.

3. In Plantar or Palmar Yaws the combination of N.A.B and Sobita, or other arsenic or bismuth preparations, shows a better and quicker satisfactory result than a single kind of injection method.

V ULCERATIVE YAWS

CASE 30

NEAGA of ELUMBA

There is but little reaction to treatment despite the quantity of combined drugs administered.

This is, however, not surprising as the patient's health generally is unsatisfactory.

Unhealthy scars which are the result of healing may break down and the process is repeated.

CASE 31

MBU TAH of Tali

The rise of temperature on the first day of admission and on the fourth day of the disease is due to a change of environments and anticipation of treatment.

A greater reaction to treatment should be the expectation especially as the first three intravenous injections were given at short intervals.

This is a good case to judge the curative of Ulcerative

Yaws as the patient is young and the duration of the disease is just a year.

Unfortunately anxiety has over-ruled patience.

CASE 32

AJE MBIA of TAKAMANDA

Alternate administration of N.A.B and Sobita had a good effect on the patient.

The ulcerations healed leaving irregular scars on the sites.

Patient reported in May, 1944, and the condition was satisfactory.

The scars reduced considerably in size and had healthy appearance.

CASE 33

KONDEM KEMKA of BANGWA

This case is very interesting and the following points are worth noted:-

1. The age of the patient
2. The duration of the affection.
3. The administration of N.A.B only.
4. The subnormal temperature with but a few exceptions.
5. The healing of the ulceration leaving a healthy scar.

CASE 34

EBOB BESONG of BANYANG

Though there was a reaction yet the condition was only "relieved"
Of course the widespread of Yaws lesions, the abnormal condition

of the skin of the patient, and the duration of the affection (7 years) are a great handicap.

CASE 35

AGBOR AKO of BANGWA

It would have been a good case for the assessment of the prognosis of Ulcerative Yaws, but the patient left without being discharged.

The duration of the case was somewhat long($1\frac{1}{2}$ years), but the patient was a young subject(14 years).

OBSERVATIONS

1. Ulcerative Yaws is indeed a chronic affection which spreads insidiously and undermines the general condition of health. Its prognosis is bad.
2. Ulcerative Yaws leaves ugly and unhealthy scars after healing on the areas.
3. The period of treatment of the Ulcerative Yaws is long, tedious and trying; and in many cases the end result is unsatisfactory.

There is therefore no wonder that two of the six recorded cases absconded.

VI YAWS ULCER

CASE 36

MARIA AGBOR of BANYANG

The patient is young and the duration of the sore is short. The temperature chart shows little reaction to the administration of N.A.B.

The sore reacted well to the treatment and healing was satisfactory.

CASE 37

DAMANU of BANYANG

Besides the ulcers there are other several lesions widely distributed on the body.

The reaction to treatment was good, but the patient was in the hospital for nearly three months.

Ulcer on Tendon Achilles is always a dangerous affection on account of the deformity it produces.

The lesions on the body cleared off partially and the ulcers healed.

The ulcer on Tendon Achilles, however, recurred after a few years.

CASE 38

SUSANNAH AKO of MBIYONG

The point worthy of note in this case is the fact that once the temperature became subnormal it continued so even when the drug administered by injection was altered.

The duration of the ulcers was five years, yet the healing was complete and very satisfactory.

CASE 39

AJUA BAYO of MBULU

The common sudden upshoot and the staircase lysis are evident. This is generally the common way of reaction of a straight-

forward case in the treatment of yaws infection.

- The rise of temperature(100°F) on the day of the administration of Sobita should be regarded as the result of a change of drug since a return to the normal was without a delay.

CASE 40

EBOT ASHU of AGBOR KUM

The sudden rise of temperature on the ninth day of the disease is difficult to explain, since the temperature was either normal or subnormal throughout the course of the disease but that day.

It may be due to the multiplicity of the lesions, or the affections in the other parts of the body - joints and tibiae in particular.

It may, however, be due to the delay action of the Sobita injection.

OBSERVATIONS

1. Yaws Ulcer is commonly found among all ages liable to Yaws infection in the Mamfe Division.
2. This is due to the filthy habit of the people.
2. Yaws Ulcer on the Tendon Achilles does not heal satisfactorily.

Generally it produces deformity, and has the tendency to recur.

3. Yaws Ulcers are amendable to treatment satisfactorily, especially the early cases, but the process may be long and tedious.

VII GANGOSACASE 41IKANG NFUI of BANYANG

The temperature remained normal or subnormal during treatment but for four days when there was a rise of $.6^{\circ}\text{F}$ or 1°F .

The healing in this case is very unsatisfactory.

The ulceration healed, but the septum of the nose and soft palate destroyed remained partially raw.

CASE 42SAM SUKUA of BANGWA

The rise of temperature was due to mixed infection as the bark of a tree powdered had been applied to the "sore" before admission.

It is interesting to note the age of the patient (24 years), the duration of the disease (6 months), and the period of tissue destruction (3 months).

CASE 43AWA TABI of MBO

As in all diseases chronic cases do not respond readily to treatment, so in Gangosa as illustrated by this case. The patient was treated for a long period, but the result obtained was no healing or no extra formation. The remark of the patient "I am better" is only psychological.

CASE 44MBA FOCHATI of MUNDANI

The accentuation of the second pulmonic sound has no direct relation to the disease, but due to the unhealthy condition of the patient.

The rise of temperature when the dose of N.A.B was increased, was the average approximately, and the drop was without a delay followed by subnormal temperature until the following dose of N.A.B. was given.

There was an appreciable reaction when the drug was changed, and the temperature rise to 100°F (thirty-first day of disease). Despite the long duration of the treatment (57 days) and the quantity of N.A.B and Sobita given, the result was the cessation of ulceration and the formation of scars round the opening.

CASE 45ASU EKON of OKURIKONG

The common subnormal temperature is very evident in this despite the combined large doses of N.A.B and Sobita.

The emaciation of the patient was very markedly evident and she was anaemic.

The emaciation and anaemia must have been due to the long duration of the disease, which the patient gave as six years, but apparently the condition must have started four years before. The duration should be regarded as ten years.

One is not surprised at the result.

OBSERVATIONS

1. Definitely Gangosa is a sequela of Yaws affection which has not been treated, or partially treated.
2. Subnormal temperature with four of five days sudden rise and a quick return to the normal or subnormal is a characteristic feature in the course of treatment of the affection.

The rise of temperature during treatment is hardly above 100°F.

The average approximately is 99°F.

3. The prognosis of Gangosa is bad generally, though a permanent relief (not repair of tissues destroyed) may be obtained.

TREATMENT OF YAWS : OBSERVATION of

(SEE TABLE 6)

The result of the treatment of yaws affection depends entirely on the stage when treatment is instituted.

Hygienic and sanitary surroundings are assets to treatment, while adequate and proper food increase the resistance of the individual.

The facts observed are as follows:-

Primary Yaws

This stage is amendable to treatment and the result is very satisfactory.

When treatment is fully carried out there are no sequelae of yaws later.

Unfortunately Primary Yaws Lesions are not regarded by many of the inhabitants of the Mamfe Division as a serious stage of Yaws except when a remark is made.

Besides some of the clans think that the best period to treat yaws affection is when the secondary lesions appear in full bloom.

The four cases reported responded well to treatment (Table 6).

One case had Sobita injection. The result was satisfactory.

Three cases had Sobita and N.A.B injections.

For the treatment of Primary Yaws Sobita, or N.A.B, or Sobita with N.A.B, is the drug.

Secondary Yaws

Treatment at this stage is also very satisfactory, and it is a good fortune; for it is at this stage that scientific medical aid is sought general by the people of the Mamfe Division.

93.75% cured is the result of the cases reported (Table 6).

Secondary Yaws as Primary Yaws is satisfactorily cured by Sobita or N.A.B or both combined.

It is obvious that yaws can easily be eradicated in any infected area.

Sobita is less expensive than N.A.B, and under good management mass treatment can be undertaken by the use of the drug.

Tertiary Yaws

The result of treatment is not satisfactory.

Cases of less than the duration of one year that came under treatment, responded fully or partially.

Cases of more than the duration of one year generally do not so readily.

There appears that there is a definite somatic reaction to the organism of yaws during the Tertiary Yaws Stage in particular, which prevents the body to react to treatment.

Generally the treatment of Tertiary Yaws does not give a good encouragement.

In this division the experience is that the people do not worry much about this stage of yaws affection, hence many do suffer from yaws sequelae.

A second course of treatment may give an encouraging result where the first course fails.

Five cases have been recorded with 20% result cured.

Ulcerative YawsUlcer Yaws

The result obtained is satisfactory on account of the end result.

Besides the want of co-operation in following advices of after treatment, there is the fact that ulcers are prone to recur owing to injury due to the condition of the paths and farm work.

It seem curious that 80% cured is obtained in case of Ulcer Yaws; while 33.3% is that of Ulcerative Yaws (Table 6).

It may be inferred that in the case of Ulcer Yaws there is a conglomeration of the yaws organism whereby an attack is easier than the case of Ulcerative Yaws which lesions are generally multiplied and widely distributed.

Here lies the fact of the reaction of the tissue to the organism which causes great destruction in Ulcerative Yaws.

Plantar Yaws

Palmar Yaws

Early cases treated have shown a satisfactory result.

In order to prevent a recurrence in case of a cure or relief I have always given the following advices:-

1. That the individual should not go bare-footed, but should wear boots or shoes, particularly during the rainy season.
2. That the crossing of streams and rivers during the dry season should be avoided.
3. That sandals should be worn when travelling on rough road during the dry season.
4. That cutlasses, rakes and other farm implements should be padded.
5. That the hands should be always kept dry.

The following of the advice has brought comfort and joy to many.

The result of 25% cured is a guarded number in order to give allowance for relapses.

Gangosa

A tissue once destroyed is difficult to repair normally, if there should be any repair; and this is very true of Gangosa. Generally this stage of yaws amends to treatment minus the repair of the tissues destroyed.

In its destructive action of mucous membrane of the mouth Gangosa comes very close to Syphilis.

The main difference is that Gangosa destroys the mouth region from the skin to the mucous membrane, while Syphilis attacks the mucous membrane direct.

Gangosa is a yaws affection of the adult (40 years upwards). It is uncommon under 40 years.

TEMPERATURE, PULSE & RESPIRATION in FRAMBOESIA TROPICA
(See cases reported)

Temperature

The rise of temperature is not a distinct feature in yaws affection. There is hardly any appreciable rise of temperature except in case of primary yaws in children when there may be a rise to 100^o F or more.

In such cases the pain and tenderness in the joints (particularly in the small joints) are well marked; and the anterior aspects of the tibiae are tender.

There is in fact definite inflammation of the periosteum. Of course pain and tenderness may also be elicited in other superficial bones, as the radii, clavicles and fibulae.

In case of infected yaws or yaws ulcers infected, however, the temperature is very high.

When there is a reaction of the tissue during treatment by intravenous or intramuscular route, the temperature rises, and it is sometimes alarming.

The return to the normal is never delayed longer than two or three days.

Some toxæmia is also present as evident by the trace of albumen found, in a few cases, in the urine.

The blood cells deal easily with the toxin or toxins circulating in the blood, and the normal condition of the blood is quickly regained.

Pulse

The pulse rate is not accelerated except when there is also an infection of the yaws lesion by the other microbes.

In children there is often a pseudo-acceleration of the pulse rate; but this is due often to fright or change of environments.

Respiration

The respiration rate is not increased. If there be any increase it is usually due to fright or an anticipation of treatment by intravenous or intramuscular route.

Generally the pulse and respiration ratio is hardly disturbed.

CONCLUSION

1. The Mamfe Division is yaws endemic area from time immemorial; and in all probability it is one of the foci of the spread of *framboesia tropica* to the different parts of the world.

A case of yaws in a European Missionary is described.

2. Taking the different clans of the Mamfe Division as a whole, yaws is most common from two years to twenty-five years of age.

The height of infection is fourteen years.

3. The incubation period of primary yaws is three weeks.
4. There is a definite prodromal stage in an infection by yaws organism.

This stage is well marked in children.

5. There is a short period in the course of the primary lesions when the yaws organism can be demonstrated.

This short period lies between the appearance of the primary yaw or yaws and the disappearance.

6. The interval between the appearance of the primary yaws lesions and the appearance of the secondary lesions is two weeks to four months.

On the average it is two and a half months.

7. The commonest stage of the affection of yaws generally seen is the secondary yaws lesions.

The reason is obvious.

The skin lesions are an annoyance though there may be no discomfort.

Besides the skin lesions are barriers to religious and social life.

8. At the stage of secondary yaws lesions inborn resistance in the individual is the deciding factor of the severity of the infection and the ^distribution of the yaws lesions.
9. The organism of yaws can be easily demonstrated in the secondary yaws lesions (Giemsa Stain Method), but not so in the primary yaws lesions.
In the case of tertiary yaws, ulcerative yaws lesions, ulcer yaws lesions, gangosa, and plantar and palmar yaws lesions, special laboratory method is required to demonstrate the organism (if it could be demonstrated).
10. Albinos spots or areas on the skin are generally a sequela of yaws affection in the Mamfe Division.
11. In the destruction of tissues yaws sequelae vie very well with other tissue destroying diseases.
12. Framboesia tropica and syphilis are two distinct and separate entities.
13. Yaws mortality in the Mamfe Division ranges between .05% and .2%.
14. There is no doubt that one attack of yaws produces immunity against a second; but in an untreated case the tertiary stage and the sequelae of yaws produce great inconvenience and incapacitation.
In such a case the per centum of yaws morbidity is very high in contrast to its low mortality.

15. The part played by fly in the dissemination of yaws organism is infinitesimal.
16. There appears ~~sometimes~~ during the course of yaws infection a rise of temperature; but this is evident if there should be a superimposed infection.
Normally there is no appreciable rise of temperature except in the case of children.
17. The ratio between the respiration rate and pulse rate is hardly disturbed during the course of yaws infection per se.
18. For an effective treatment of yaws ulcerations and yaws ulcers the mixed powder - Neocarsphenamine Powder and Boric Powder(1 in 4) - is an excellent adjunct.

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A STUDY

of

FRAMBOESIA TROPICA

IN THE

MAMFE DIVISION, CAMEROONS,

BY

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REPORTED CASES



**Fig.22 - Primary Yaws,
showing swellings of fingers,
wrists and legs (Case 1)**

CASE 1

EBINISI of BANYANG,
SMALL MAMFE TOWN,
MAMFE, CAMEROONS.

26th December, 1942
Male. 4½ years

Occupation:- -

Complaint:-

The child cries of pain when he is being carried or handled. He says he feels pain in the joints of the fingers and leg bones.

Duration:-

One week.

History of Present Condition:-

The child was in a good condition of health until three weeks ago when he had fever and was given quinine without any effect. He would not take his food well, and there was weakness of the limbs, especially the lower limbs. There were swellings of the joints of the fingers with fleeting pain in the joints generally. The child cried persistently. The parts were fomented and rubbed with warm oil, but the relief was only for a short period. A week after the fever he was given a purgative which had no effect on the pain. The pain increased and powdered herb poultices were applied to the joints and there was a relief for a short period followed by a continuous pain.

Past History:-

The child suffered from malarial fever at the age of 2 years. For the past two years the child played and mixed freely with children suffering from yaws during the day, but never slept in the same room or ate with children affected by yaws.

At the age of 3 years he suffered from acute bronchitis.

Family History:-

Both parents had suffered from yaws during childhood.

The mother is suffering from multiple arthritis.

The father enjoys a good health.

The child is the only member of the family.

General Condition:-

The child is well looked after and the state of nutrition is good.

The skin is pale and the conjunctivae have icteric tint.

The joints of the fingers are swollen, and there is pain with marked tenderness. The anterior aspect of each tibia is painful on pressure.

The back is tender.

There are depigmented patches on the face, wrists, back, legs and scrotum.

The feet are swollen and there is oedema of the face.

The periosteae of the tibiae are inflamed.

There is no glandular enlargement.

Temperature 97.6°F. Pulse 104. Respiration 30.

Examination:-

There is no skin eruption on the head and neck. On the angle of the lips there is a soft yaw from which a lot of serum exudes. Depigmented patches are seen on the face, wrists, back, legs and limbs. There are no lesions on the feet or soles of the feet. Scaly patches are scattered irregularly over the trunk and thighs.

Gastro-Intestinal System:-

The tongue is furred and the fauces congested. The gums are swollen. The abdomen is moderately enlarged. The epigastrium is full and the left side of the abdomen is on a higher level than the right. On palpation the abdomen is doughy to the touch, and ^{the} spleen is felt to be greatly enlarged extending downwards to the flank and inwards beyond the umbilicus. The notches of the spleen are easily felt. The abdominal glands are not palpable. On percussion there is dullness on the left side of the abdomen and flank. Rumbling sounds are heard all over the right side of the abdomen on auscultation.

Urine:-

Smell as fresh hay. Reaction alkaline. Highly coloured. Specific Gravity, 1016. Albumen, slight trace. Deposit, slight dissolving on heating. Sugar negative.

Heart
Circulatory System
Pulmonary System
Nervous System

}
} Nothing abnormal is detected.

Diagnosis:-

Primary Yaws

Result:-

Cured.

The eruptions and patches disappeared.

CASE 1
 DATE OF ADMISSION
 26th DECEMBER 1942

DISEASE
 PRIMARY YAWS

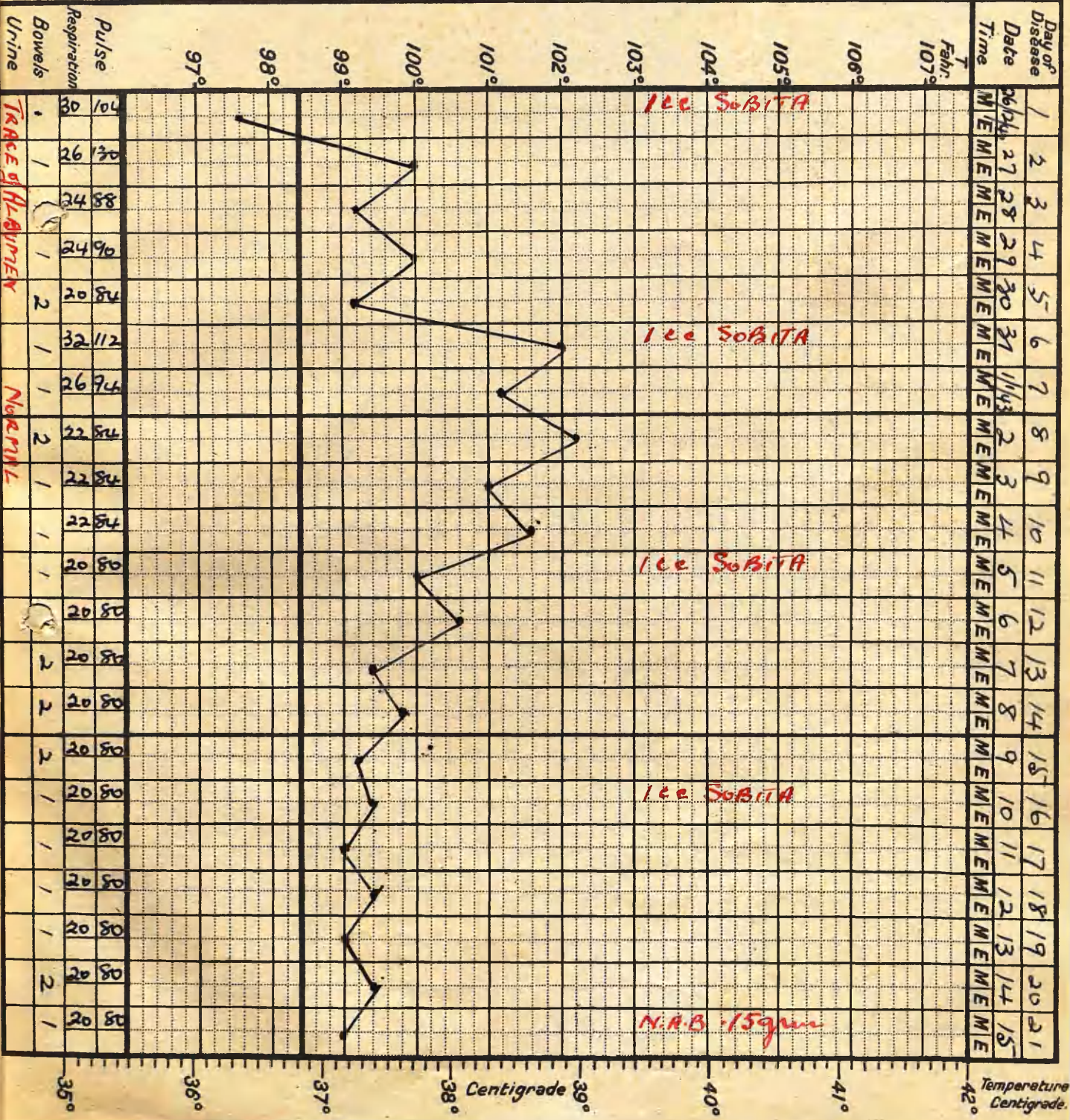
Name
 EAINSI (M)
 of BANYANUR

Age
 45 years

Diet

NOTES
 Yaws Lymphoma
 and patches
 disappeared

Result
 SATISFACTORY



CASE 1

DATE OF ADMISSION
21st DECEMBER 1942

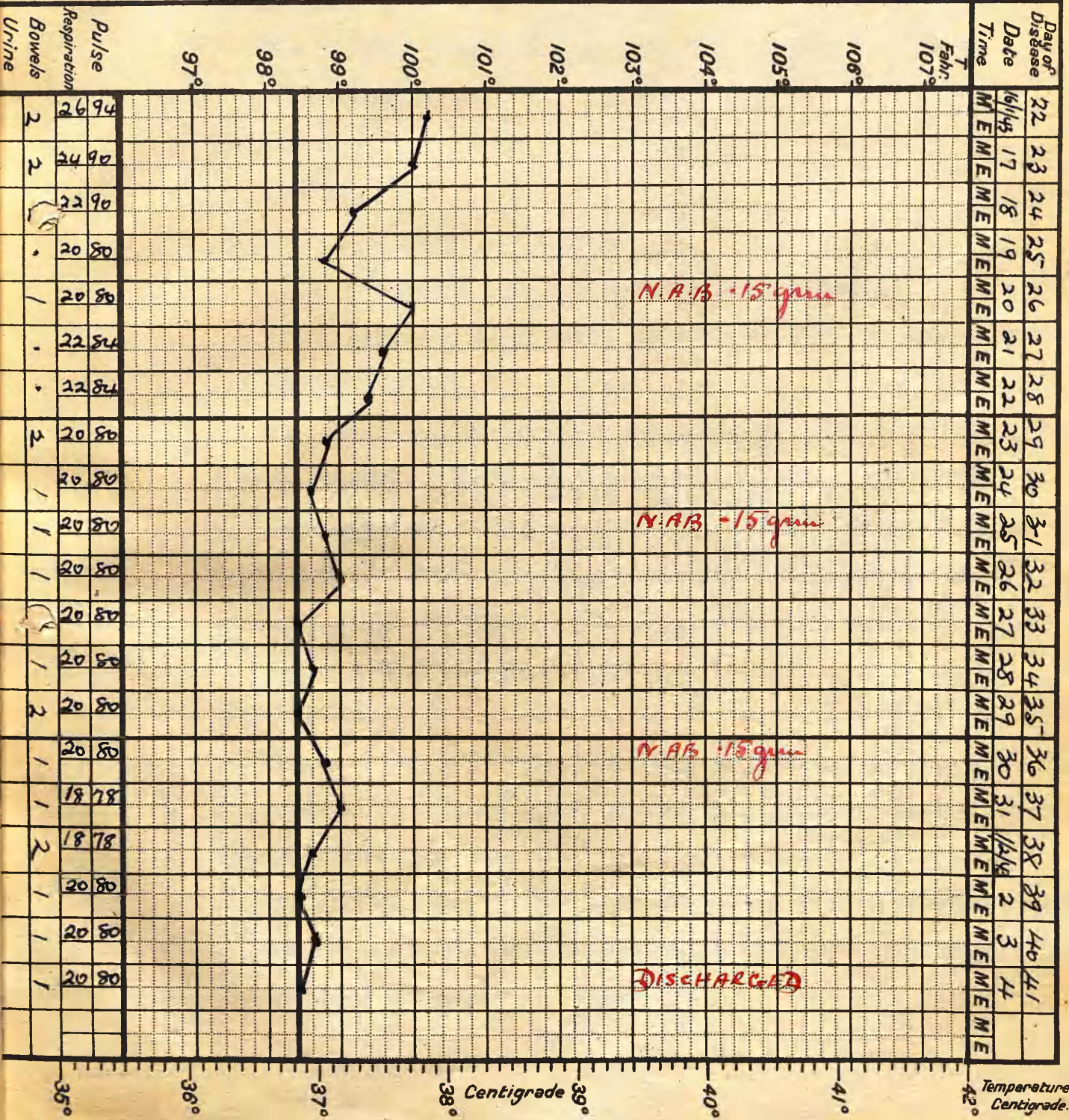
DISEASE
PRIMARY YAWS

Name
ERINSI (M)
of BANYANG
Age
4 1/2 years

No. in Case Book

NOTES
Yaws to lymphon
and strikes.
disappeared.

Result
SATISFACTORY



CASE 2

NICHI KAMBA
of NJUNGU,
MAMFE, CAMEROONS.

17th September, 1939
Male. 4½ years.

Occupation:-

Complaint:-

The patient complains of pain in the legs and fever occasionally.

Duration:-

2 weeks

History of Present Condition:-

About two weeks ago the patient complained of pain in the front parts of both legs, and fever, loss of appetite and sleeplessness.

The child was given herb decoction but the condition remained unaffected. There was, however, a previous complaint of the same symptoms which subsided without any definite treatment about six weeks ago; but there was nothing seen on the body during the period of the first complaint only minor pain on legs on pressure elicited.

Past History:-

The patient suffered from fever at the age of 2 years. He had measles at 3 years, and ascariasis about one month ago.

Family History:-

The father, mother and brothers enjoy a good condition of health. In the family there is no history of yaws or venereal disease.

Case 2(contd)

General Condition:

The patient is well nourished. There is no oedema of the lower parts of the legs, jaundice or icteric tint of the conjunctivae. There is pain on pressure of the legs but the periosteae are not swollen. There is splenic enlargement. Temperature 98.6 F. Pulse 82. Respiration 20.

Examination:

The head, ears and neck have no skin lesions. The lower eyes^{lids} are slightly puffy, but the face is normal. In the submental region there is a yaw with a dark cover. There are no skin lesions on the trunk, extremities, palms of the hands and soles of the feet.

Heart)	
Circulatory System)	
Pulmonary System)	
Gastro-Intestinal System)	No abnormality is detected.
Nervous System)	
Urinary System)	

Diagnosis:-

Primary Yaws

Result:-

Cured.

CASE 2

DATE OF ADMISSION

17 SEPTEMBER 1939

DISEASE

PRIMARY YAWS

Name

NICHI KAMBA (M)
of NUNGU

Age

4 1/2 years

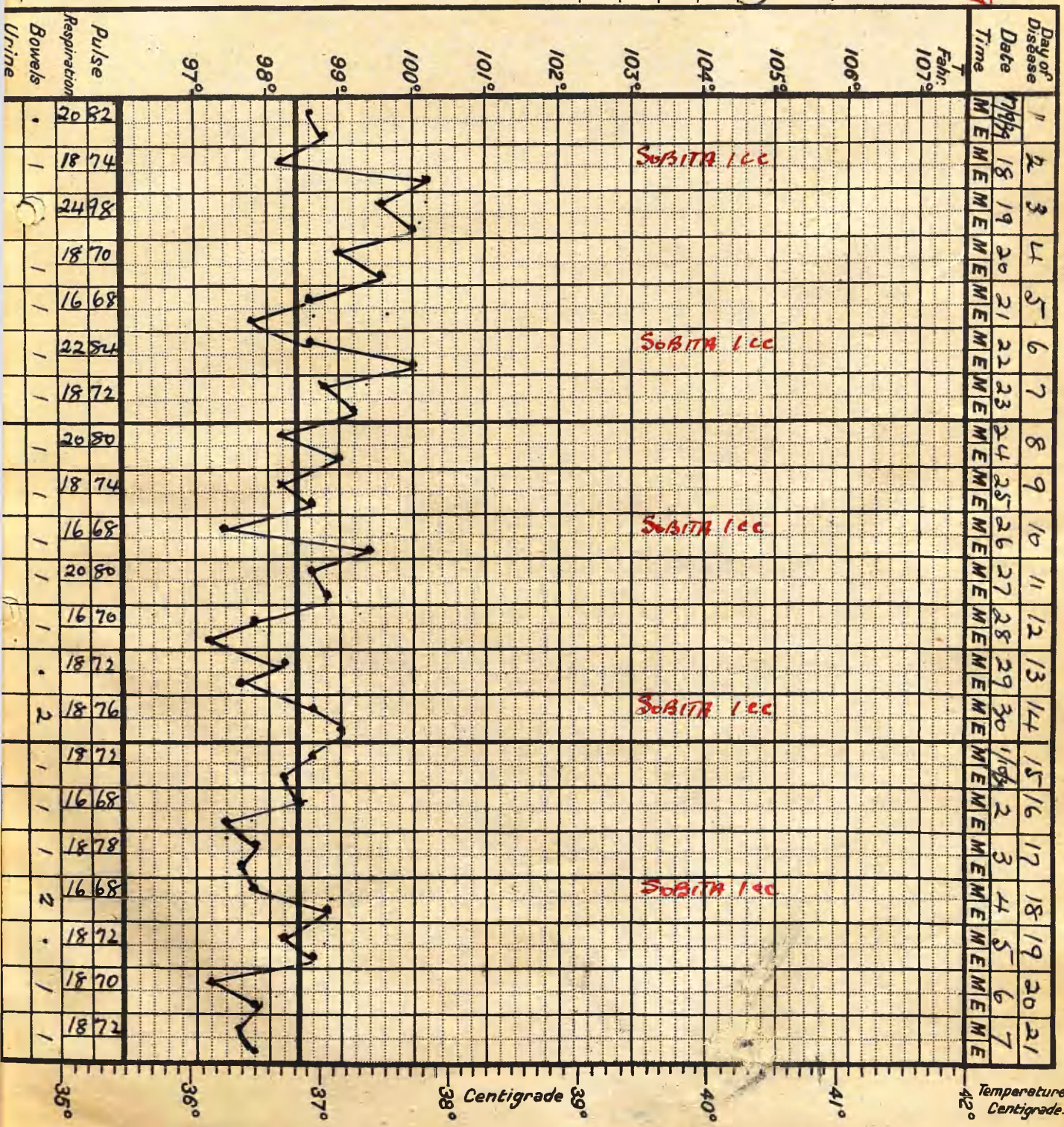
Diet

No. in Case Book

NOTES

Result

CURED



CASE 3

NDIP MBU of BECHATI,
MAMFE, CAMEROONS.

7th July, 1939.
Male 34 years.
Married

Occupation:-

Farmer

Complaint:-

The patient complains of sore on the upper end of the left arm.

Duration:-

One week.

History of Present Condition:-

A week ago the patient's attention was called to some white yellowish mark on the upper arm. As there was no pain or fever he did not pay any particular attention to it but go about his work until he was advised to see the doctor.

Past History:-

The patient had pertussis when he was a child and was cured by a native medicine man. He suffered from joint and muscle pains for eighteen months a few months after he started work on the farm. He had never suffered from severe fever though he had severe headache twelve months ago. There is no history of venereal or other disease.

Family History:-

The parents are dead. One of his cousins had yaws eleven months ago. He is married and his wife is alive and well. There are two children alive and enjoying a good condition of health.

General Condition:-

The patient is slender and looks unhealthy. The head is more or less normal, but the neck is less muscular. The bones of the face are unduly prominent without any venules or capillaries seen on the cheeks or other parts of the face. The abdomen is moderately enlarged, but there is no jaundice, icteric tint of the conjunctivae, or oedema of the legs.

Temperature 98.6°F. Pulse 76. Respiration 18.

Examination:

There is no abnormality seen on the head, neck and face. On the anterior fold of the left armpit there are yaws eruptions. The trunk and extremities have follicular patches scattered irregularly. The spleen is not enlarged and there are no old scars on the genitalia or other parts of the body.

Heart
Circulatory System
Pulmonary System
Urinary System
Gastro-Intestinal System
Nervous System

}
} There is nothing abnormal
} detected.

Diagnosis:-

Primary Yaws

Result:-

Cured.



Fig. 35 - Primary Yaws
on the anterior fold of the
armpit (Case 3)

CASE 3

DATE OF ADMISSION
7th July, 1939

DISEASE
Primary Yaws

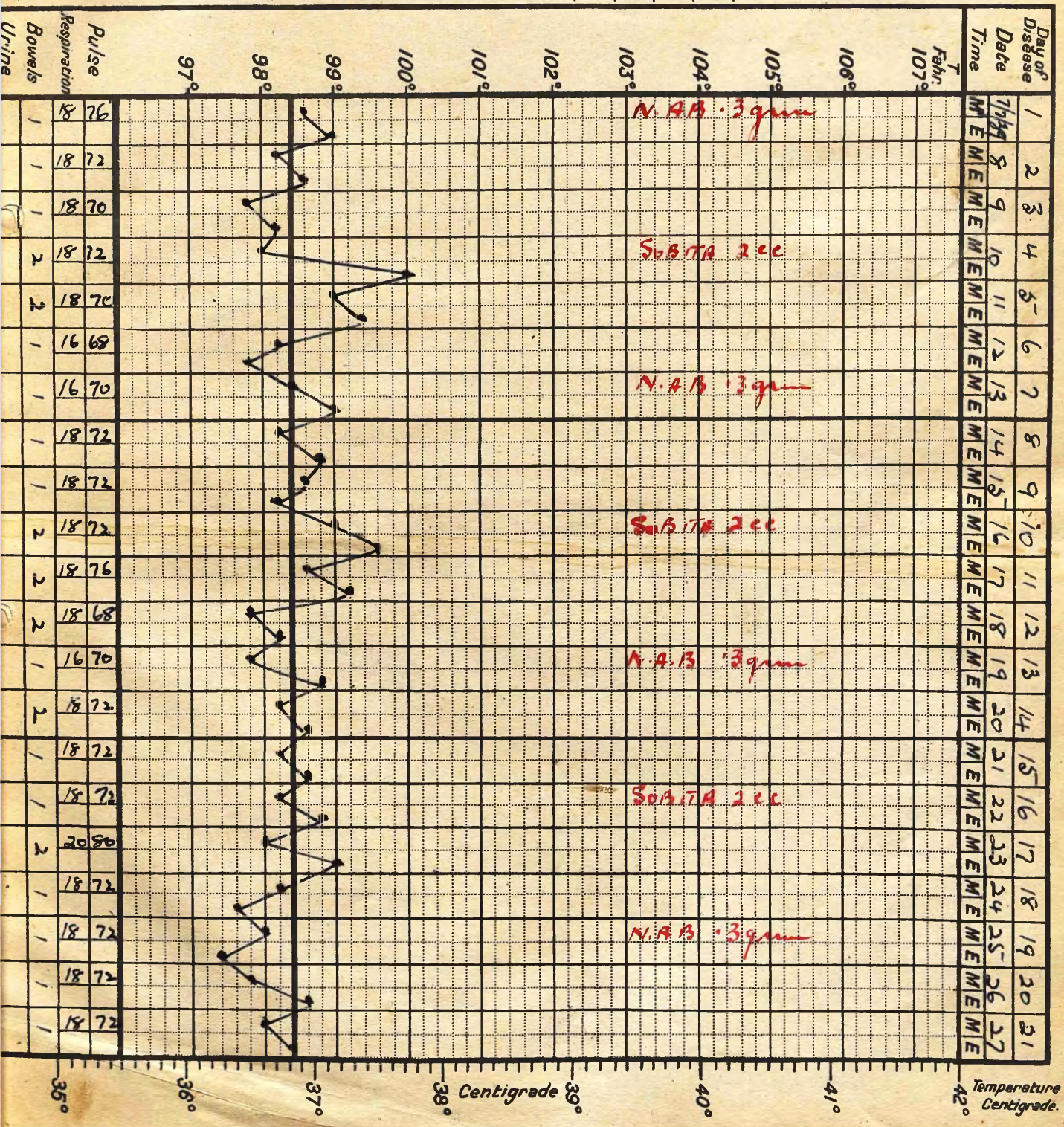
Name
NUR MAU (M)
of BECHATI

Age
34 years

Diet

NOTES

Result
CURED



CASE 3

DATE OF ADMISSION
7th July, 1939

DISEASE
Primary Pains

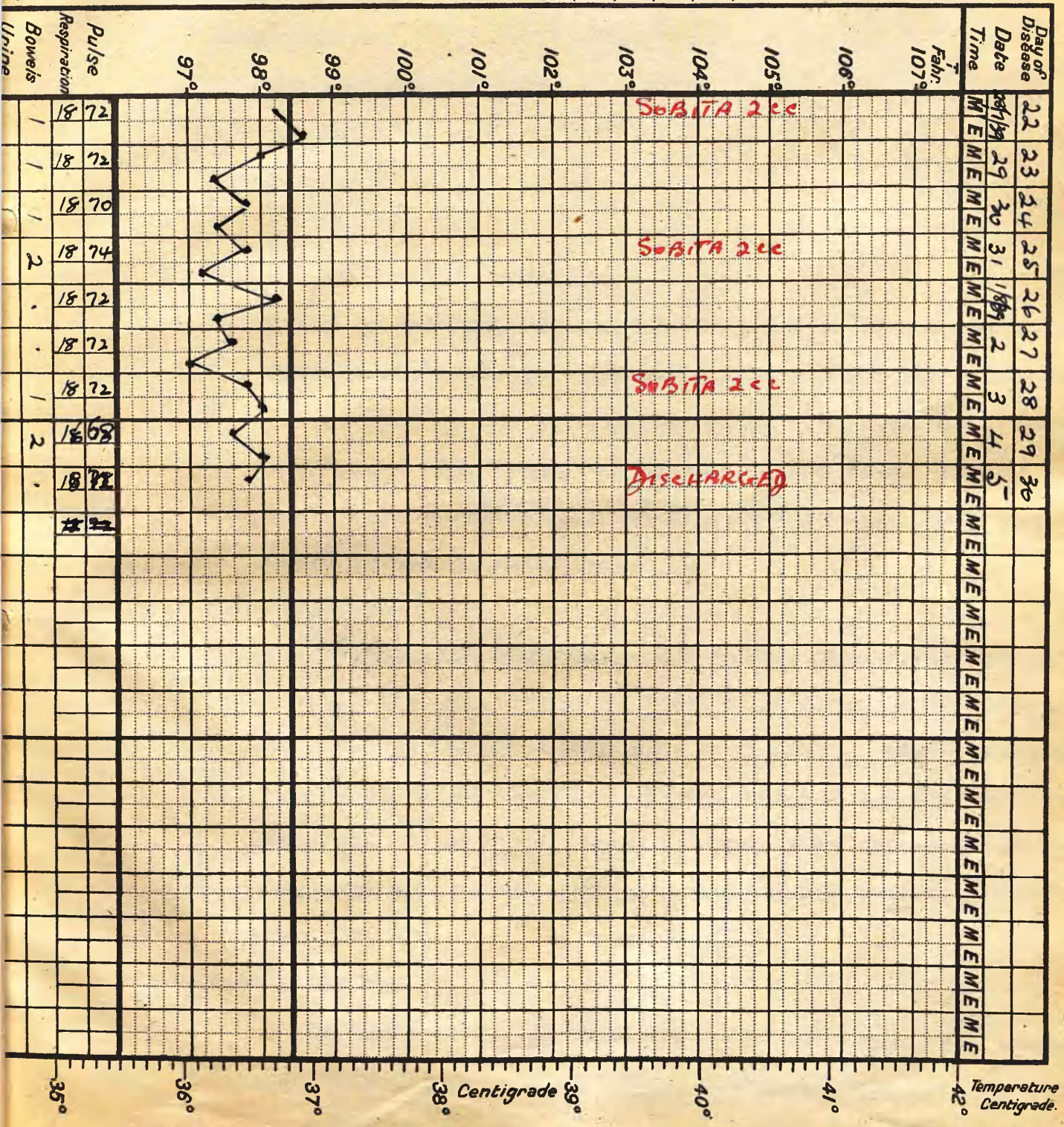
Name
NAR MAU (M)
of RECHATI

Age
34 years

Diet
No. in Case Book

NOTES

Result
Fused



Temperature Centigrade.

CASE 4

SONDI KOKAW
of MBO
MAMFE, CAMEROONS.

1st April, 1945
Female. 31 years.
Married. Children 3

Occupation:-

Housewife

Complaint:-

The patient complains of a small yellow spot on the side of the face.

Duration:-

2 weeks.

History of Present Condition:-

Prior to two weeks ago the patient had enjoyed a good health without any anxiety. She detected two weeks ago a little raised spot on the side of the face. The spot was hard to the touch. She looked at the mirror and found that it was a small raised spot with a small yellow cover. There was no fever or any inconvenience.

Past History:-

The patient had side chest pain with cough at the age of 10 years. When she was young there were sores on the toes, which healed after a prolonged treatment. While carrying hot water to the bathroom one day she tripped and her chest was scalded. She had never suffered from any venereal disease, and no sore had been seen on her private parts at any period.

Family History:-

The patient is married and has three children. Her husband is alive and well. Her father and mother are alive and

Case 4(contd)

enjoying a good state of health with other members of the family. There is no obvious tendency in the family to any particular disease.

General Condition:-

The health condition of the patient is good. The muscles of the neck, trunk and extremities are well developed and of a good tone. There is no oedema, jaundice or icteric tint of the conjunctivae. No pain is elicited on pressure of the superficial bones which have no abnormality.

Examination:-

The scalp has no eruption and the hairs are clean. The neck is full and of a good contour and the muscles of the face are well developed. There is a yaw eruption on the right side of the lower jaw at the angle of the maxilla. The yaw is of a yellow dark colour. The abdomen is not enlarged and the spleen is not palpable. There are no scars on the trunk, genitalia or extremities.

Heart	}	Nothing abnormal detected.
Circulatory System		
Pulmonary System		
Gastro-Intestinal System		
Nervous System		
Urinary System		

Diagnosis:-

Primary Yaws

Result:

Cured.

CASE 4

DATE OF ADMISSION

15 APRIL 1945

DISEASE

Primary Yaws

Name

SORDI KOKAM (F)
of M30

Age

31 years

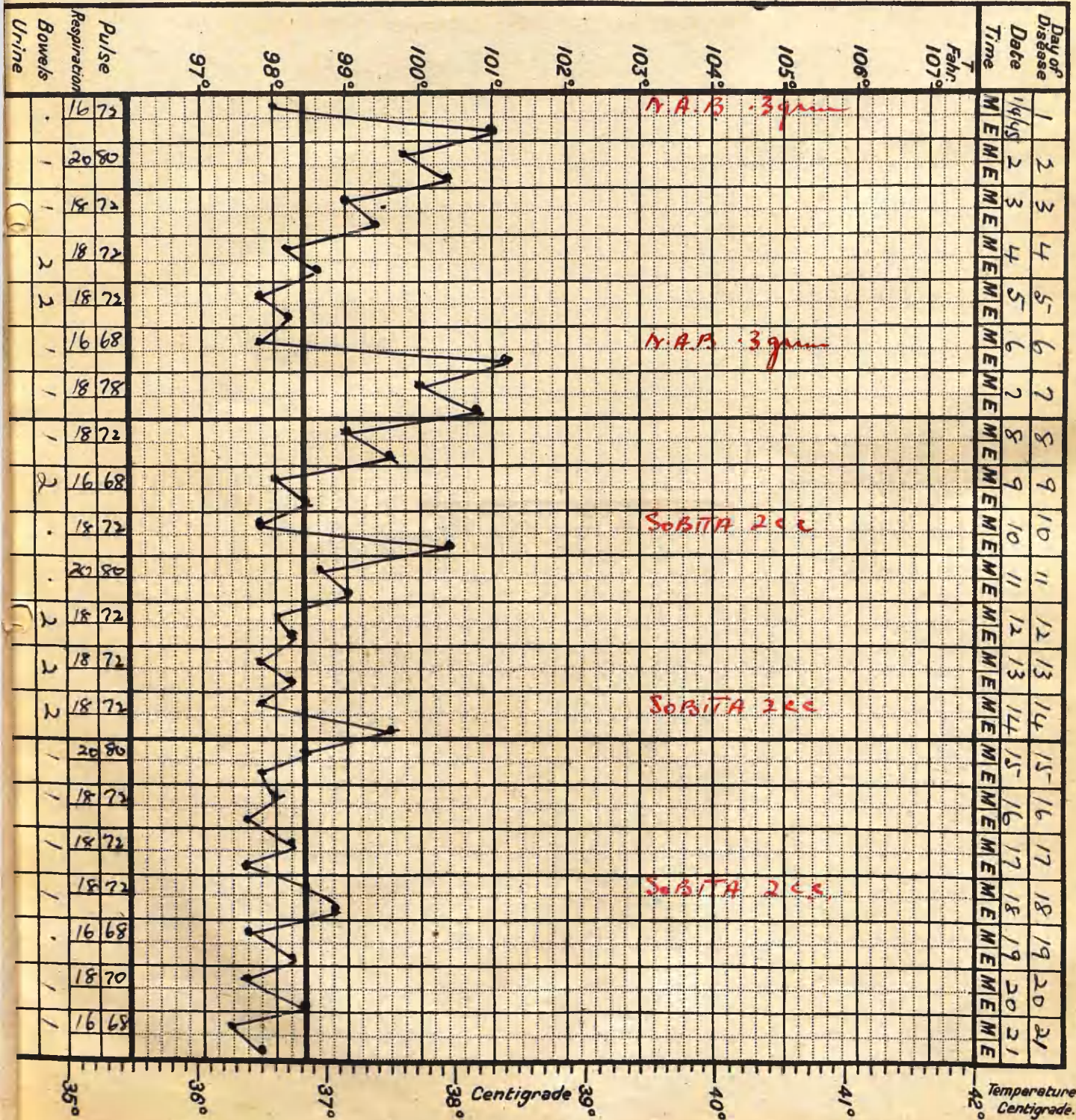
Diet

No. in Case Book

NOTES

Result

CURED



CASE 4

DATE OF ADMISSION

1st APRIL, 1945

DISEASE

Primary Yaws

Name

Sarda KOKAR (F)
of M/80

Age

31 years

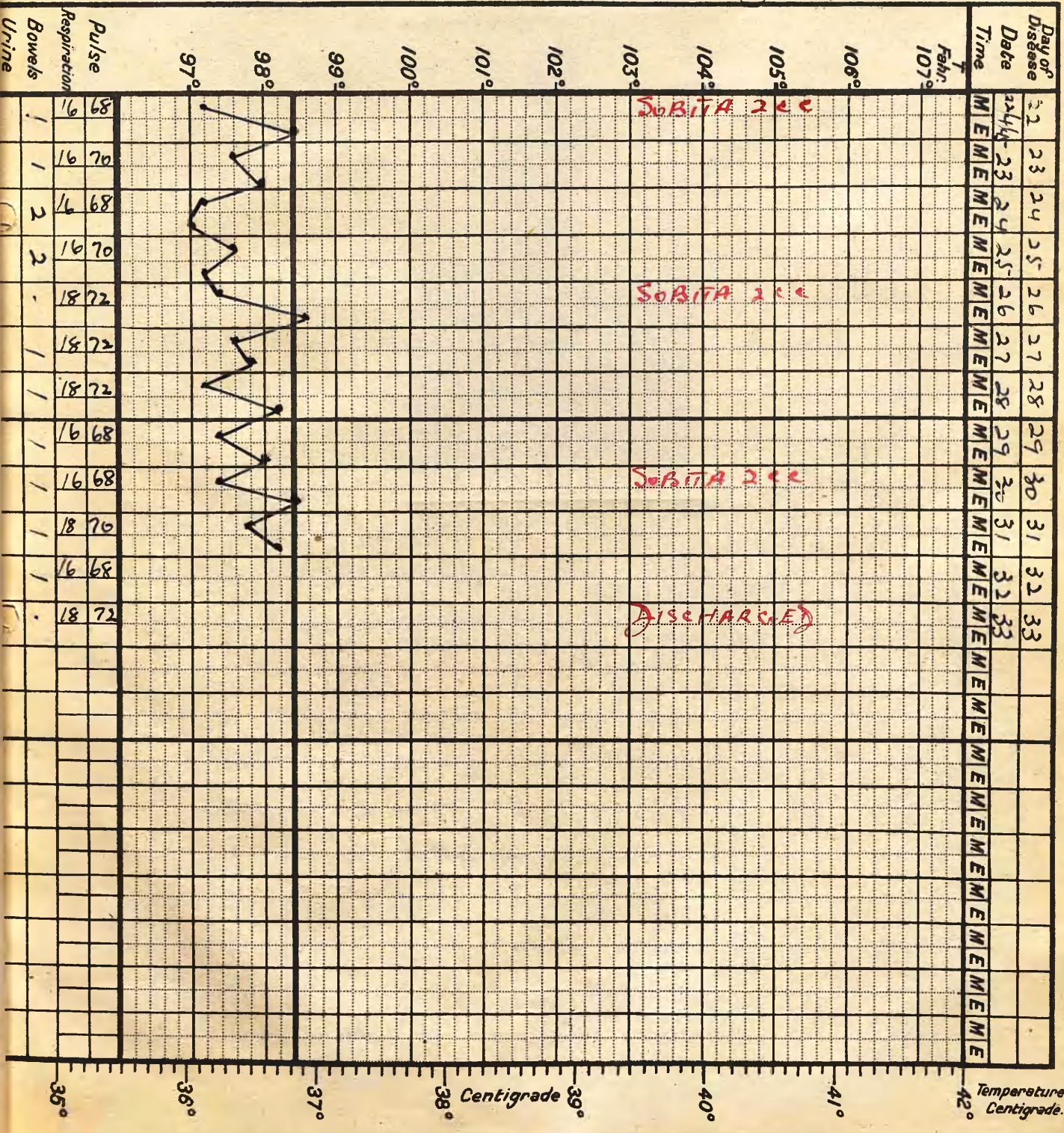
Diet

No. in Case Book

NOTES

Result

CURED



Case 5

DEPARTMENT OF HEALTH,
HAWAII, TERRITORY,
KAPAHULU, HAWAII, 1924.

NOVEMBER 1924
Age 42 years,
Childless.

Occupation--

Housewife

Complaints--

The patient

stated

History of

the patient

History of

the patient

the patient

the patient

the patient



**Fig.25 - Secondary Yaws
on the face, upper and lower
extremities, trunk, right
nipple and anal region(Case 5)**

The patient was born in Hawaii in the French Sandlot
territory of the Territory, and was brought to the Kapi
hulu Hospital at the age of 12 years. She is married

The patient was born in Hawaii in the French Sandlot
territory of the Territory, and was brought to the Kapi
hulu Hospital at the age of 12 years. She is married

CASE 5

MAJUYENUA of BANGWA,
MAMFE TOWN,
MAMFE, CAMEROONS.

28th November, 1942
Female. 42 years.
Married. Children 4.

Occupation:-

Housewife

Complaint:-

The patient complains of eruptions on the face, trunk, and extremities.

Duration:-

2 weeks

History of Present Condition:-

The patient enjoyed a fairly good health for many years. Six months ago the last two children contracted yaws and she attended them. They slept together and freely lived in the same room. After a few weeks she became feverish with loss of appetite. A few days after she noticed a "sore" on the nipple of her right breast. After a few weeks yaws eruptions appeared on her face, trunk, and extremities.

Past History:-

The patient had pleurisy at the age of 38 years, and minor illnesses during childhood. She had never suffered from any kind of sores or ulcers on the skin, gonorrhoea or ulcer of the private parts.

Family History:-

The patient was born in Nchang in the French Mandated Territory of the Cameroons, and was brought to the Mamfe Division by her aunt at the age of 12 years. She is married

Case 5(contd)

and her husband is alive and well. There are four children of 9 years, 6 years, 3 years, and 1½ years respectively. The first two children have never had yaws; while the last were attacked by yaws six months ago. The father and mother died when she was but a child.

General Condition:-

The patient is slightly anaemic, but her muscle tone is good and satisfactory. There is no jaundice or icteric tint of the conjunctivae, and no swelling or pain in the joints, or tenderness in the long bones. There is no oedema or swelling of the face or feet.

Temperature 98.8 F. Pulse 76. Respiration 18.

Examination:-

There are lice in the hairs but the scalp has no lesions. Well marked yaws eruptions are on the face, trunk, limbs and anal region. A ripe juicy yaws eruption situates on the nipple of the right breast. There is no glandular enlargement, but the spleen is slightly enlarged. There are no lesions on the soles of the feet.

Heart	}	Nothing abnormal has been detected.
Circulatory System		
Pulmonary System		
Gastro-Intestinal System		
Nervous System		
Urinary System	}	

Diagnosis:-

Secondary Yaws.

Result:-

Cured.

Yaws eruptions cleared leaving depigmented spots.

CASE 5

DATE OF ADMISSION
28th NOVEMBER, 1942

DISEASE
Secondary Yaws

Name
MAJU YENVVA (F)
of NCHAM (F.M.I.)

Age
42 years

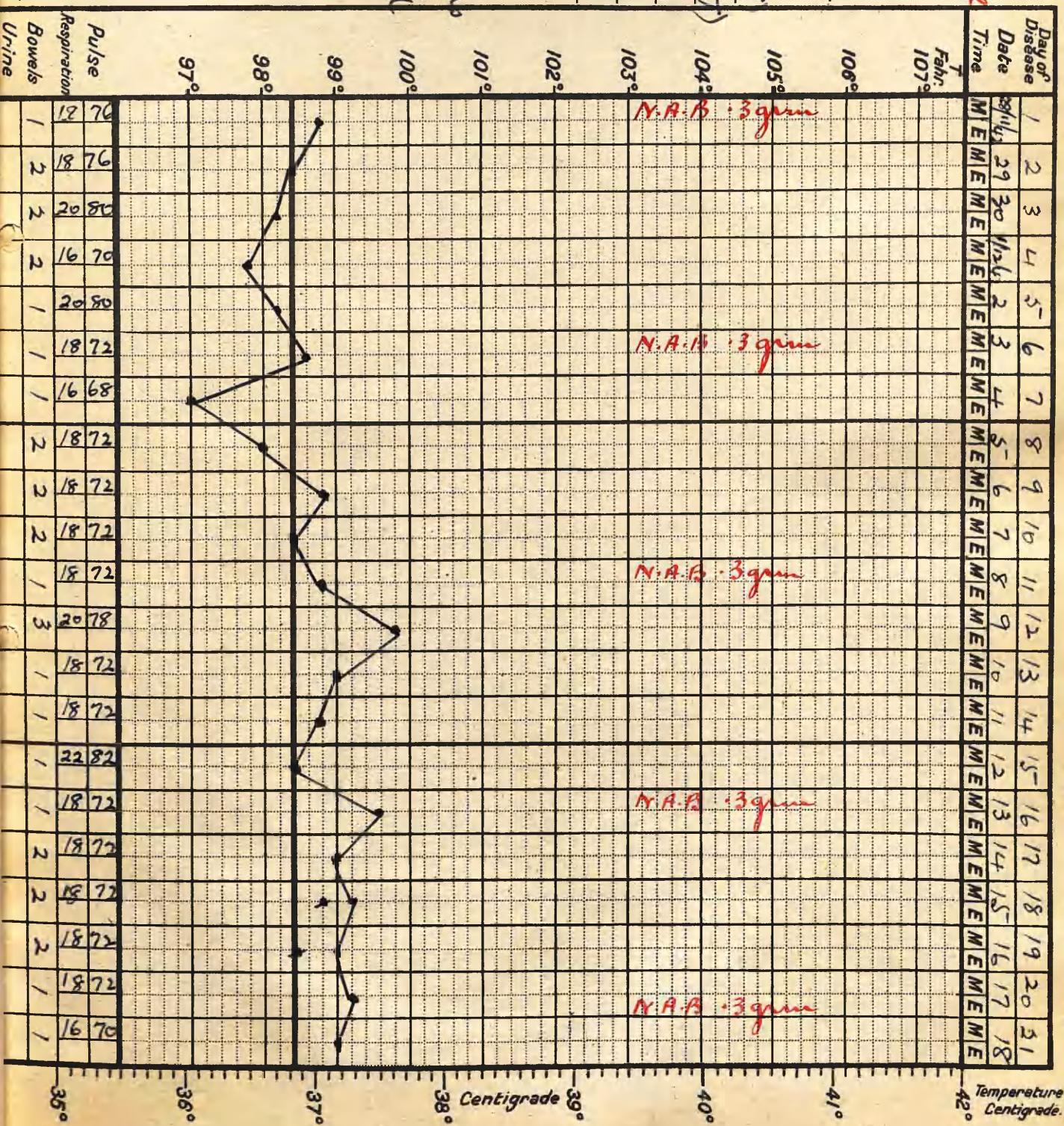
Diet

No. in Case Book

NOTES

Yaws symptoms
unabated less-
ing frequent
spots.

Result
CURED



CASE 5

DATE OF ADMISSION
28th NOVEMBER 1942

DISEASE
Secondary Syphilis

Name
MAYYENVA (F)
of NCHRYN (F.M.T.)

Age
42 years

No. in Case Book

NOTES

Yaws Serophenia
subscribed leaving
ing fragmented
spots.

Result
CURED

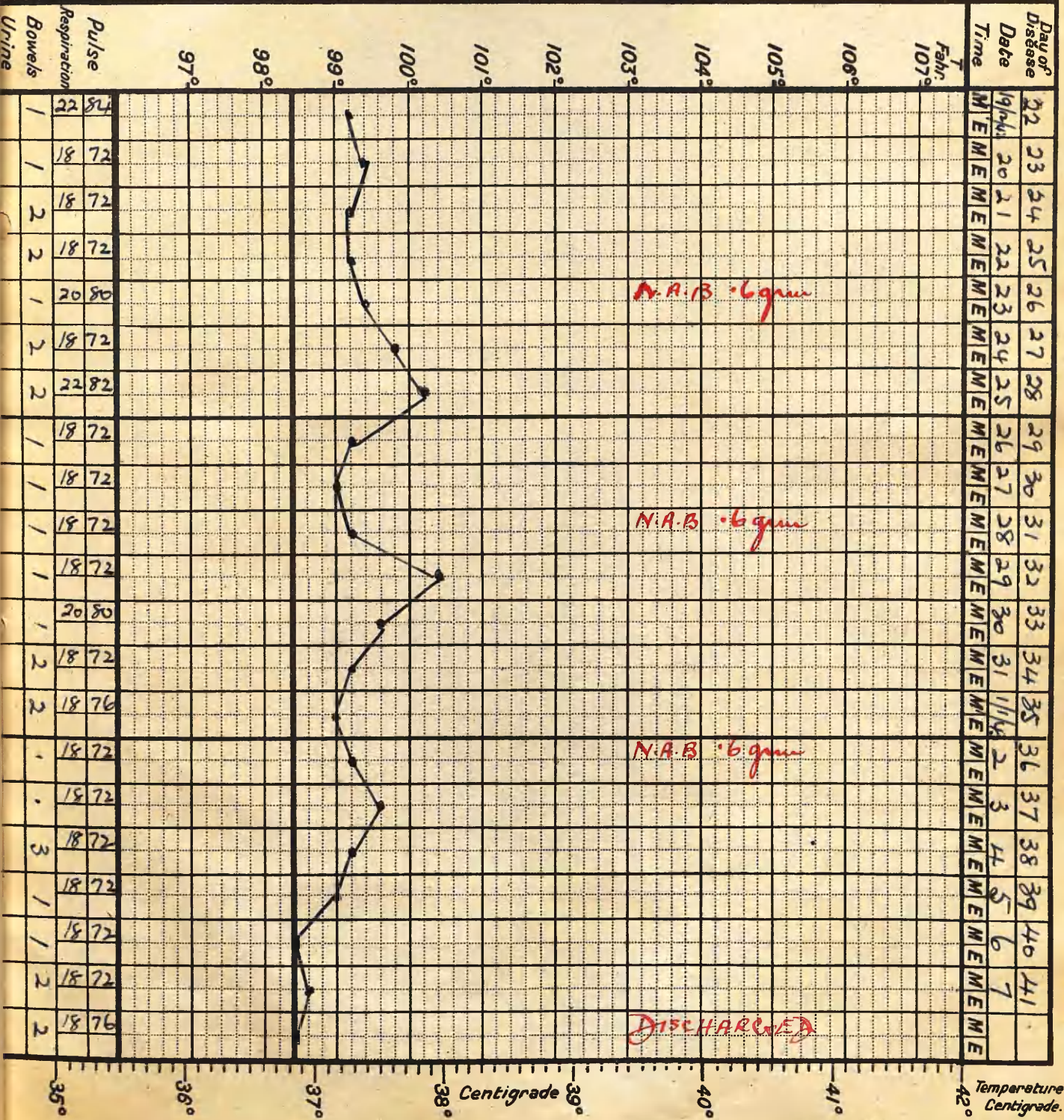




Fig.23 - Secondary Yaws
on the face(Case 6).



Fig.24 - Secondary Yaws,
the same patient back view
showing that there are no Yaws
Lesions on the back or
extremities but that the Yaws
Lesions are confined to the
face(Case 6).

CASE 6

GIUKENG MUPAW
of BANGWA,
MAMFE, CAMEROONS.

18th August, 1943
Male. Married
47 years. Children 5.

Occupation:-

Farmer

Complaint:-

The patient complains of 'sores' on the face.

Duration:-

2 weeks.

History of Present Condition:

About six weeks ago the patient began to feel feverish with frontal headache. He took to bed and in a few days he felt better and returned to work. Three weeks after there was minor pain in the small joints, but he was able to go about his work without any inconvenience. One week later he noticed some yaws eruptions on his face without fever or pain in the joints.

Past History:-

The patient had smallpox at the age of 12 years, and urethral discharge one year ago. He had never had sore on the penis.

Family History:-

The patient is married, and the wife is alive and well with five children, of 13 years, 10 years, 7 years, 4 years and 1½ years respectively. The fourth child had yaws when he was about 3 years old, and was removed to his mother's village as he (patient) was on a journey. The last child had yaws when she was about 9 months old and he attended her while she was

Case 6(contd)

being treated by the medicine man.

General Condition:-

The patient is a well nourished person with good muscular development. There is no anaemia, no jaundice, or icteric tint of the conjunctivae. The joints are not swollen or tender. There is slight oedema of the face.

Temperature 97.8°F. Pulse 76. Respiration 18.

Examination:-

The scalp and neck have no lesion. The face which is slightly puffy, is studded with several juicy yellowish yaws eruptions which serum exudes freely from. The trunk, extremities and other parts of the body are free of the eruptions.

The patient is mentally clear-headed and answers questions without any difficulty or strain.

There is no glandular enlargement and there are no scars on the genitalia or skin.

Heart	}	No abnormality is detected.
Circulatory System		
Pulmonary System		
Gastro-Intestinal System		
Nervous System		
Urinary System		

Diagnosis:-

Secondary Yaws.

Result:-

Cured

Yaws eruptions cleared completely from the face without leaving any marks.

CASE 6

DATE OF ADMISSION
19th AUGUST 1943

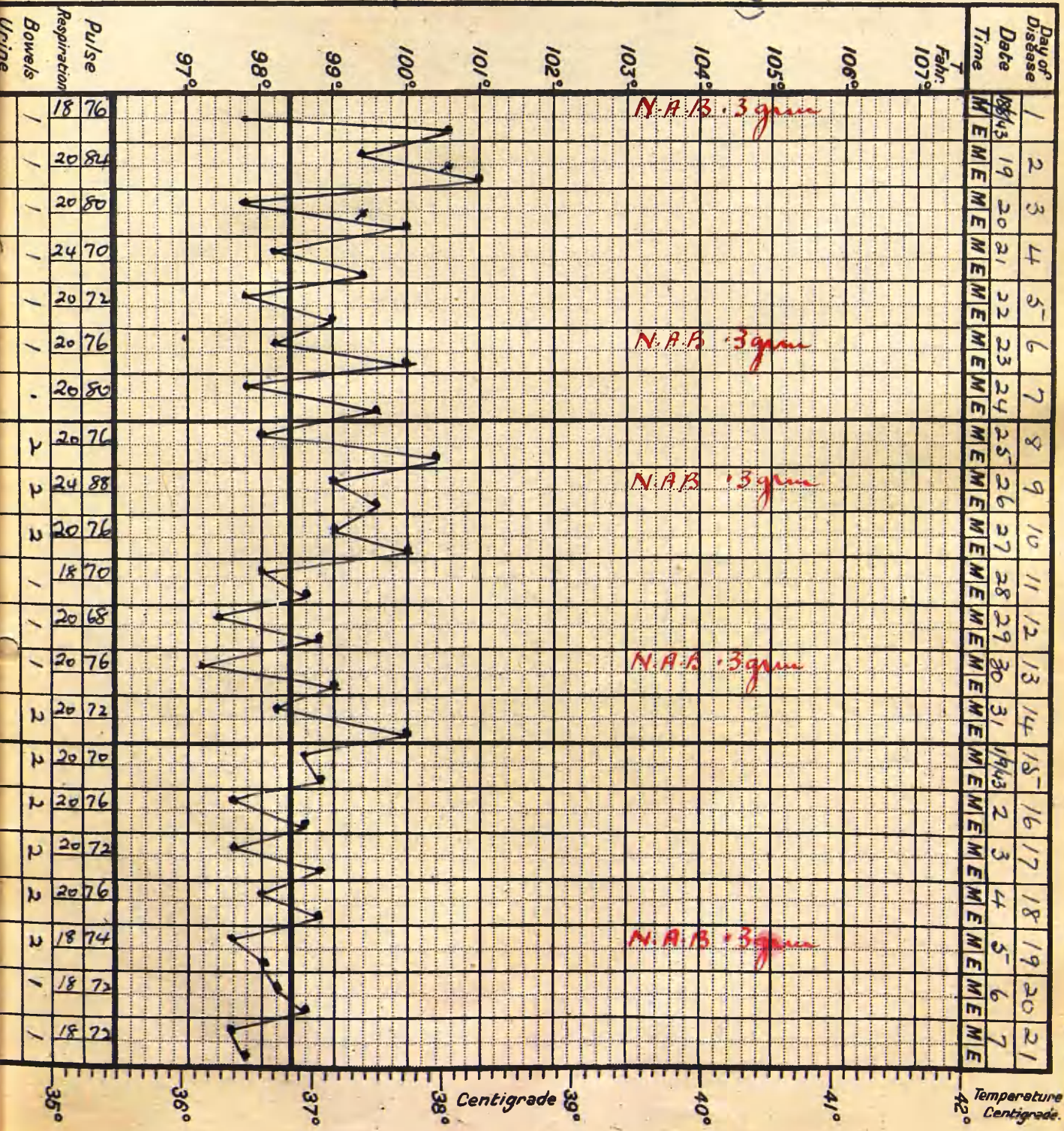
DISEASE
Secondary Yaws
(FOLLICULO-PAPULAR)

Name
GUCKER, MERRILL
of BARBERSHA

Age _____
Diet _____
No. in Case Book _____

NOTES
Yaws symptoms
healed without
leaving any big
marginal spots on
the face

Result
CURED



CASE 6

DATE OF ADMISSION

19th August, 1943

DISEASE

Secondary Yaws

(FOLLICULO-PAPULAR)

Name
KUKKENG MOHAM (M)
of BANGWA

Age

Diet

No. in Case Book

NOTES

Yaws lesions healed without leaving any pigmented spots on the face.

Result
CURED

Day of Disease	Date	Fahr. 107°	Time	Temp. Centigrade
22	8			105.2
23	9			104.2
24	10			103.2
25	11			102.2
26	12			101.2
27	13			101.0
28	14			99.2
29	15			98.2
	16			97.2
	17			
	18			
	19			
	20			
	21			
	22			
	23			
	24			
	25			
	26			
	27			
	28			
	29			
	30			
	31			
	32			
	33			
	34			
	35			
	36			
	37			
	38			
	39			
	40			
	41			
	42			

N.A.B. 3 gm

DISCHARGED



Pulse	Respiration	Bowels	Urine
88	18	2	
76	20	1	
72	20	1	
72	18	1	
76	20	2	
72	18	1	
68	18	1	
72	18	1	

Temperature Centigrade. 35° 36° 37° 38° 39° 40° 41° 42°

CASE 7

MEMBA of FONTEM,
MAMFE, CAMEROONS.

10th January, 1944
Male. 46 years

Occupation:-

Labourer

Complaint:-

The patient complains of yaws eruptions on the upper part of the body.

Duration:-

2 weeks.

History of Present Condition:-

About three weeks ago patient began to feel very feverish and there was no inclination for food. He took some purgative and it resulted to the passing of frequent stools for a week. He was not, however, confined to bed, but there was sweating occasionally. There was no eruption seen on any part of the body. One week later yaws eruptions began to appear on the face spreading to the head and left arm.

Past History:-

The patient had suffered from infectious diseases but he had never been confined in bed. There is no history of venereal or other disease.

Family History:-

The patient has "married" three wives who are alive and in a good condition of health. There are eight children. His father died of lung disease a few years ago, but the mother is still alive and well. Two of his children suffered from yaws about a

Case 7 (contd)

year ago.

General Condition:-

The health condition of the patient is good and satisfactory.

He is well nourished and the muscles are well developed.

There is no oedema of the legs, no jaundice, or icteric tint of the conjunctivae.

Temperature 97.6°F. Pulse 68. Respiration 18.

Examination:-

There are yaws eruptions on the scalp, mostly marked at the lower portion of the occipital bone. On the face there are yaws eruptions irregularly scattered, but the nose is not affected. The left arm has yaws irregularly scattered on the inner and outer aspects. The neck, trunk, lower extremities and right upper extremity have no yaws lesions.

Heart:-

The apex beat is visible and lies in the sixth intercostal space just within the mammary line. There is an indrawing of the space during systolic phase, but no abnormality (enlargement and adventitious sounds) is detected on examination.

Circulatory System	}	There is no abnormality detected.
Pulmonary System		
Gastro-Intestinal System		
Nervous System		
Urinary System		

Diagnosis:-

Secondary Yaws.

Result:-

Cured.

CASE 7

DATE OF ADMISSION

10th January, 1944

DISEASE

Secondary Yaws

Name

MEMBA (M)
of FORTHEM

Age

46 years

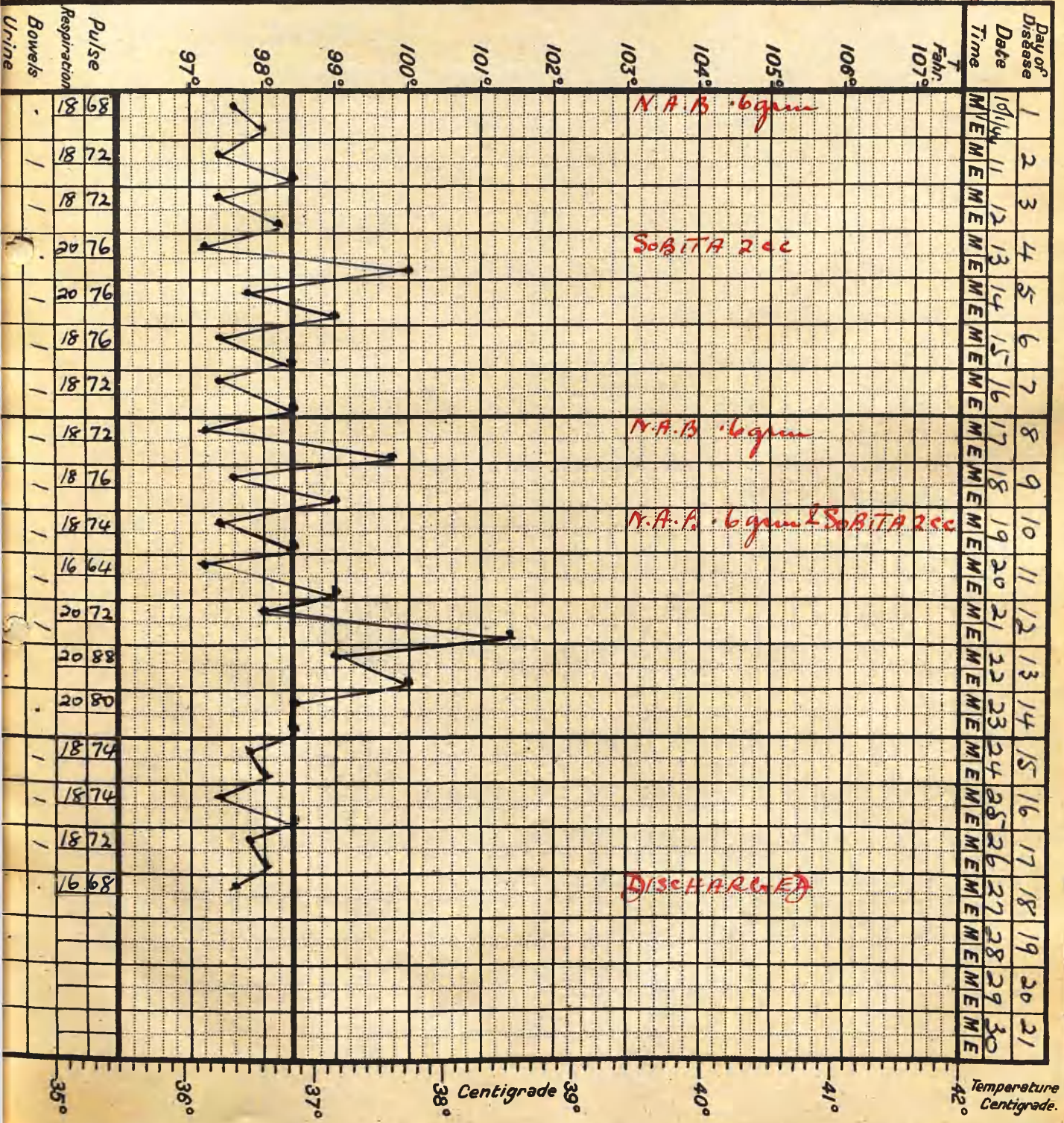
Diet

No. in Case Book

NOTES

Yaws lesions cured without leaving any marks on the spots.

Result
CURED



CASE 8

AKO of TAKAMANDA,
MAMEE, CAMEROONS.

12 th August, 1943
Female. 17 years

Occupation:-

House Cook.

Complaint:-

The patient complains that her nose has become larger with something like grains of sand in it.

Duration:-

One month.

History of Present Condition:-

Prior to two months ago when the patient noticed a small sore on the tip of the nose she was enjoying a good health. As there was no pain she did not bother and continued at work. The sore disappeared two weeks later without leaving any mark at the spot. A month ago little raised spots appeared on the nose and covered it from the bridge to the tips extending to the sides and angles of the nose. The eyes after a fortnight began to run water at intervals.

Past History:-

The patient had measles and varicella when she was young. There was an ulcer on the leg at the age of 16 years. About six months ago she visited her bosom friend who was suffering from yaws, regularly. The yaws lesions covered the friend's trunk and extremities, and often she had to minister to her (friend's) need.

Case 8(contd)**Family History:**

The parents are dead, and the causes of death are unknown.

The patient lives now with her aunt in a new settlement. There is no history of yaws in the family.

General Condition:-

The patient is well nourished and healthy. She has been enjoying a good health for many years. There is slight icteric tint of the conjunctivae which are wet. In any part of the body there is no pain, tenderness or oedema.

Temperature 98.4°F. Pulse 72. Respiration 18.

Examination:-

The hairs, scalp and neck have no abnormality. The nose is covered by tiny growths which give the appearance of a young cauliflower. The nostrils are unaffected. The eyes run tears at intervals. The trunk and extremities are normal except the shoulders which have decoration marks(yanka).

Heart	} Nothing abnormal is detected.
Circulatory System	
Pulmonary System	
Gastro-Intestinal System	
Nervous System	
Urinary System	
Urinary System	

Diagnosis:-

Secondary Yaws

Result:-

Cured

CASE 8

DATE OF ADMISSION
12th August, 1943

DISEASE
Secondary Yaws

Name
AKO (F)

of TAKAMANGA

Age
17 years

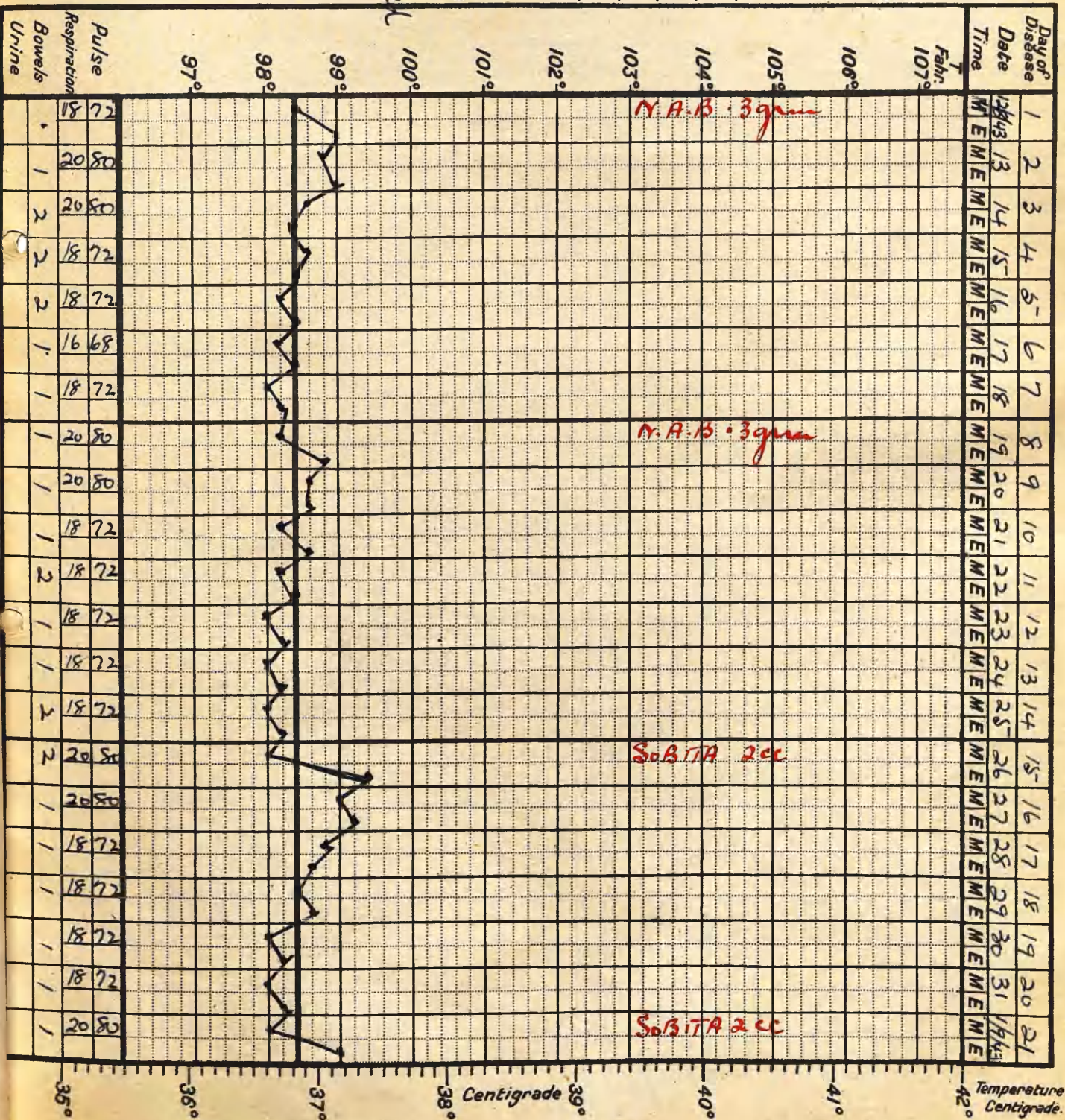
Diet

No. in Case Book

NOTES

Yaws lesions on the nose completely cleared

Result
CURED



N.A.B. 3grm

N.A.B. 3grm

So.B.T.A 2cc

So.B.T.A 2cc



**Fig. 34 - Secondary Yaws (Leishmanoid Type)
(Case 9).**

CASE 9

NEFUNGU of BANGWA,
MAMFE, CAMEROONS

4th January, 1940
Male. 10 years

Occupation:-

Complaint:-

The patient complains of small eruptions on the body without itching.

Duration:-

3 months.

History of Present Condition:-

The patient was at school until three months ago when he noticed some small eruptions on the lower extremities. In a few days other eruptions appeared on the other parts of the body and the whole body was covered by the small eruptions in a few weeks. The patient continued his attendance at school until he was asked by his teacher to see the doctor.

Past History:

The patient suffered from irregular fever and cough with pain on the right side when he was under the age of 7 years. He had an attack of dysentery a few months ago. He had never suffered from yaws.

Family History:-

The patient is a school boy. The mother had had cough(phthisis) which she died of. The father is alive, but had a big sore on the right middle finger which was amputated when gangrene occurred. The patient's younger brother had yaws ten months ago.

General Condition:-

The patient is lean and looks sick. The muscles are not well developed and the superficial bones of the extremities are unduly prominent. The conjunctivae are white, but there is no jaundice. There is no pain or tenderness in any part of the body. There are glandular enlargements in the posterior triangles of the neck.

Temperature 99°F. Pulse 78. Respiration 20.

Examination:-

The patient has very thin hairs and the scalp has yaws eruptions and crawcraw extending to the back of the neck. The trunk has papular eruptions which extend to the extremities where they are more marked. There are no skin lesions on the dorsal aspects of the hands, nor on the feet.

Gastro-Intestinal System:-

The tongue is furred and the teeth are in an unhealthy condition. The tonsils are slightly enlarged but the other parts of the throat are in a healthy condition. The abdomen is doughy to the touch and the spleen is enlarged but the notches are not felt. Ova of the common round worms are found in the stool on examination.

Heart	} Nothing abnormal is detected
Circulatory System	
Pulmonary System	
Urinary System	
Nervous System	}

Diagnosis:-

Secondary Yaws

Result:-

Cured.

CASE 9

DATE OF ADMISSION

1st JANUARY, 1940

DISEASE

Secondary Yaws

Name

NEUNSCHEIM
of BANSWA

Age

10 years

Diet

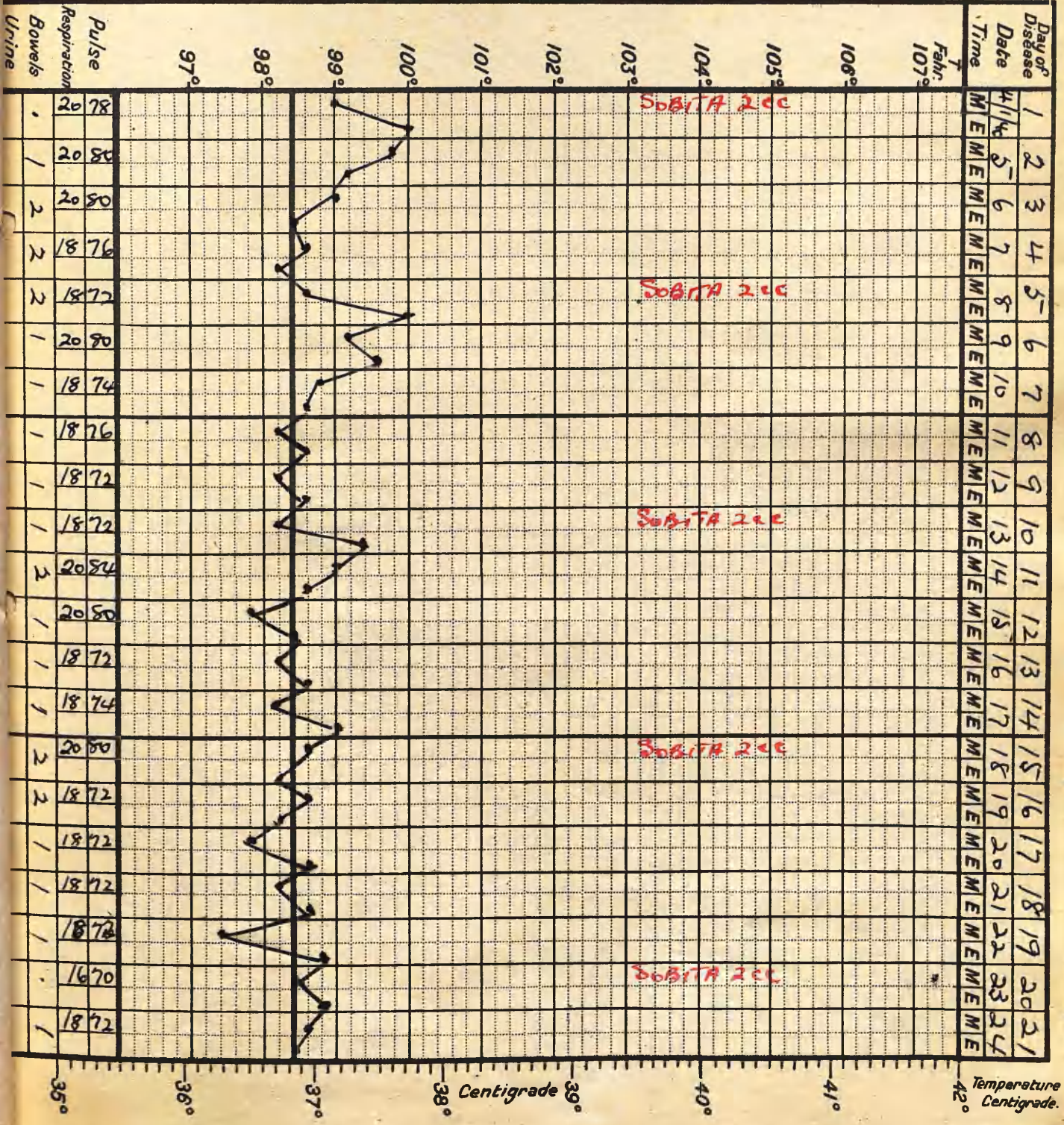
No. in Case Book

NOTES

Secondary
Yaws of the
Venereal
Type.

Result

CURED



CASE 9

DATE OF ADMISSION

14th JANUARY, 1946

DISEASE

SECONDARY YAWS

Name

NEURSE V (M)
of BARSEWA

Age

16 years

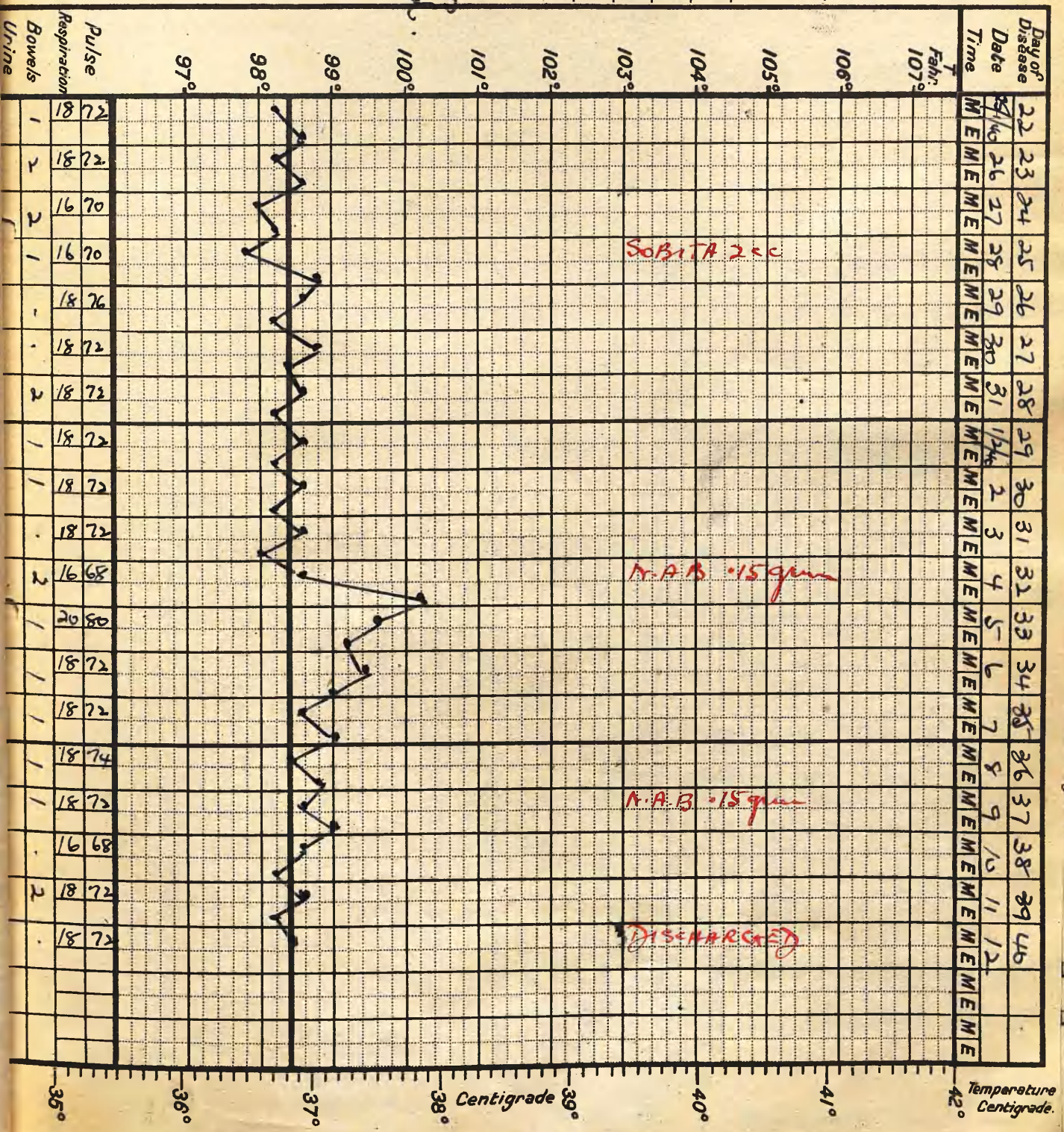
Diet

No. in Case Book

NOTES

Secondary Yaws
of the Serpiginosa
type

Result
CURED



CASE 10

AMYI AKE of ASSUMBO,
MAMFE, CAMEROONS.

27th December, 1939

Male. 25 years

Occupation:-

Farmer.

Complaint:-

The patient complains of yaws eruptions on the body.

Duration:-

2 months

History of Present Condition:-

Before two months ago the patient had been enjoying a fairly good health until yaws eruptions appeared on the different parts of the body. Sepui was applied and herb decoction taken. As there was no pain the patient did not bother until a week ago when he found that the yaws did not disappear.

Past History:-

The patient had suffered from bacillary dysentery, bronchitis and trypanosomiasis. A few months ago he had an attack of malarial fever.

Family History:-

The patient is married, and the wife is alive and well. There is one issue who enjoys a good health. The mother of the patient had yaws when she was young. The elder brother of the patient had yaws about one year ago. The father is dead.

General Condition:-

The patient is fairly well nourished and robust. The muscles are well developed. There is no oedema, jaundice or icteric tint of the conjunctivae.

Temperature 98.4 F. Pulse 72. Respiration 18.

Case 10(contd)

Examination:-

The scalp has yaws eruptions, and there are scattered yaws eruptions on the posterior and lateral portions of the neck. The back has a few yaws eruptions. The face, anterior portion of the neck, chest, abdomen and the extremities are free of yaws eruptions, and are in a healthy state. The spleen is moderately enlarged.

Heart

Circulatory System

Gastro-Intestinal System

Nervous System

Urinary System

} There is nothing abnormal found on examination.

Diagnosis:-

Secondary Yaws

Result:-

Cured.



Fig.31 - Yaws Gummatous Ulcers and Secondary Yaws on the head, neck and back.(Case 23 & Case 10)

CASE 10

DATE OF ADMISSION

27th DECEMBER 1939

DISEASE

Secondary Yaws

NAME

Amyl Ake (M)
of Assumao

AGE

25 years

DIET

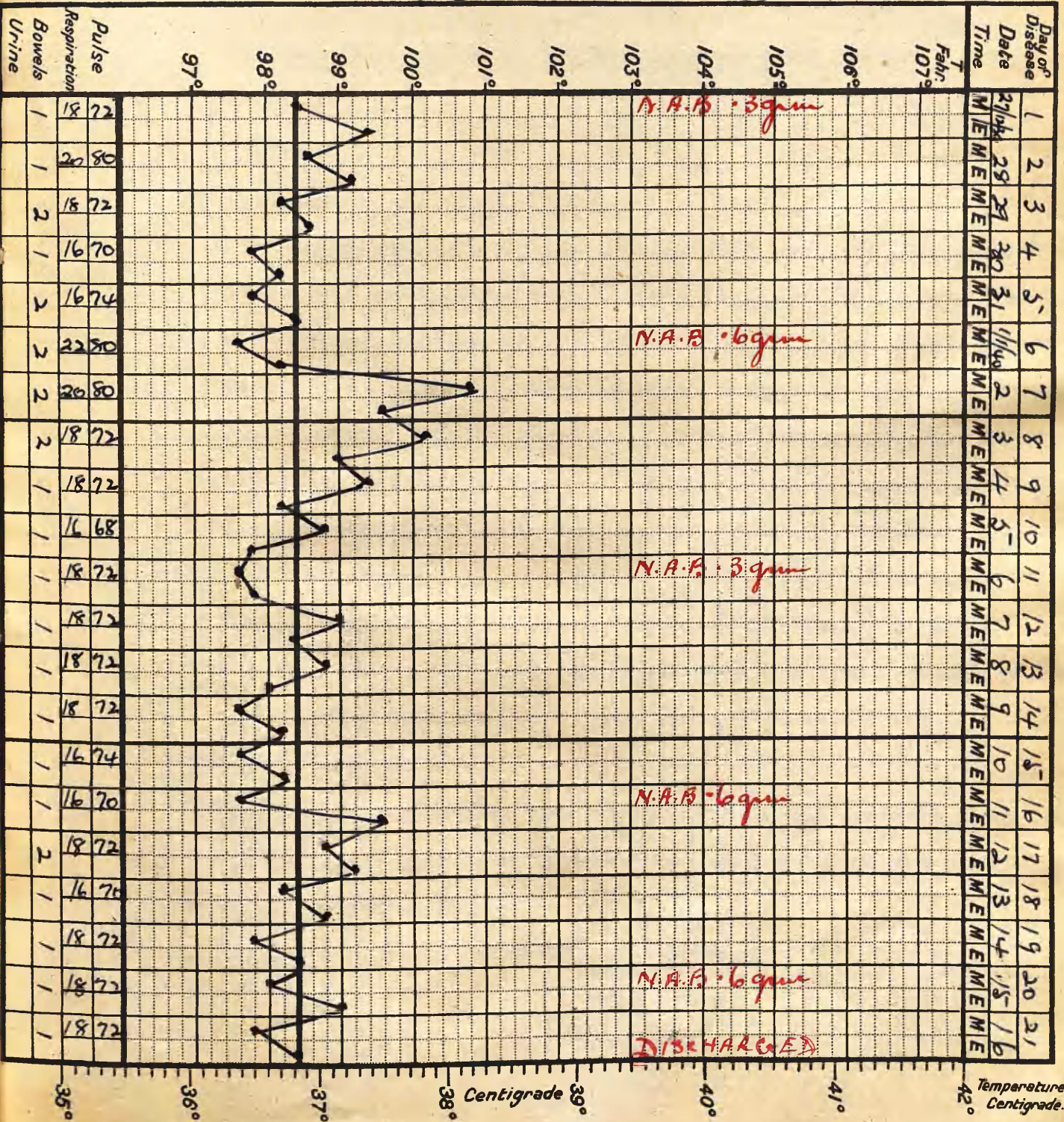
No. in Case Book

NOTES

Yaws lesions cleared completely.

Result

CURED



CASE 11

ATEBONG AWUNJIA
of FOTABONG,
MAMFE, CAMEROONS.

12th November, 1942.
Male. 12 years

Occupation:-

Complaint:-

The patient complains of eruptions on both thighs.

Duration:-

7 months

History of Present Condition:-

Ten months ago the patient had a small sore on the right buttock. There was no irritation and did not cause any inconvenience. On a close observation it was discovered that the small sore was on an old scar stimulating the breaking down of the scar. In a few weeks it cleared away without any treatment. Two months later he noticed "big sores" appearing on the upper portions of the lower extremities. These afterwards had yellow caps.

Past History:-

The patient suffered from measles at the age of 5 years. He had a severe cough with fever 2 years ago. He did not suffer from yaws during childhood.

Family History:-

The father and mother are alive. The former suffers from cough during the harmattan. The brothers and sisters are in a good condition of health.

There is no history of yaws in the family.

General Condition:-

The patient is well developed, of a good musculature, and well nourished. The hairs, scalp and neck are in a healthy condition. There are rashes on the back of the trunk, but the upper extremities have no dermal lesions. There are ~~crow~~ ~~crow~~ and scars on the lower extremities. There is no oedema of the legs, pain or tenderness.

Temperature 98.4⁰F. Pulse 80. Respiration 20.

Examination:-

There are ripe juicy yaws on the buttocks and both thighs. The yaws are more marked on the upper parts of the thigh, and more numerous on the posterior aspects. ~~Craw~~ and follicular desquamation are scattered irregularly on the lower extremities, mixing freely with the yaws lesions on the thighs. On the trunk are also ~~craw~~ and follicular desquamation.

Heart

Circulatory System

Pulmonary System

Gastro-Intestinal System

Nervous System

Urinary System

Nothing abnormal is detected.

Diagnosis:-

Secondary Yaws.

Result:-

Cured.

CASE 11

DATE OF ADMISSION

12th NOVEMBER 1942

DISEASE

SECONDARY YAWS

Name
THEBON & FURVIT (M)
of FORTA BONG

Age
12 years

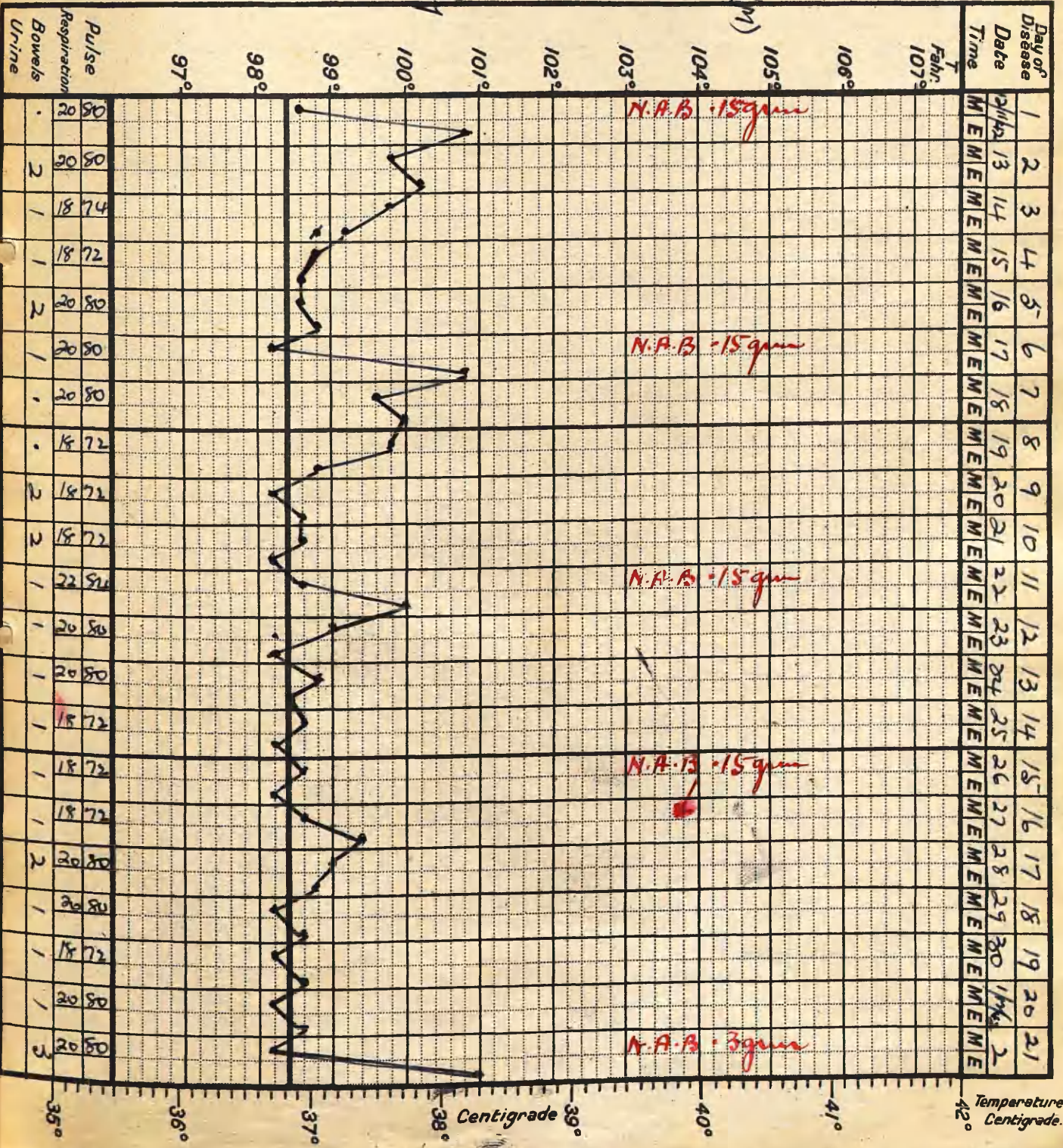
Diet

No. in Case Book

NOTES

Yaws lesions healed completely

Result
CURED



CASE 12

ASONG ASUA
of BANGWA,
MAMFE, CAMEROONS.

17th June, 1944
Female. 12 years.

Occupation:-

Complaint:-

The patient complains of patches on the different parts of the body.

Duration:

3 months.

History of Present Condition:-

Fourteen months ago the patient had fever, headache, diarrhoea, and pain in the small joints. She noticed a small sore on the lower jaw, but it disappeared in a few days. During the period she was confined in bed and was treated by a native doctor. She was relieved of the symptoms and went about her work. Returning from a market a few weeks after she noticed at the road halt white patches scattered irregularly on the body. She reported when she reached home and sepuí was applied, but the condition did not clear off.

Past History:-

The patient had had cough (pertussis) when she was younger. She suffered from severe regular fever for about three weeks two years ago, but she was not confined to bed as the fever occurred in the evenings.

Family History:-

The father and mother are alive and well. Two elder sisters of the patient had yaws eleven months ago.

General Condition:-

The patient is healthy and of a high spirit; but she is not robust. There is no oedema, jaundice or icteric tint of the conjunctivae.

Temperature 98.2°F. Pulse 78. Respiration 18.

Examination:

The hairs and scalp are in a healthy condition. There is no abnormality on the neck and back. There are follicular patches of yaws lesions scattered irregularly on the arms, buttocks and thighs. The spleen is enlarged and palpable.

Heart

Circulatory System

Pulmonary System

Gastro-Intestinal System

Nervous System

Urinary System

There is nothing abnormal detected.

Diagnosis:-

Secondary Yaws
(Follicular).

Result:-

Cured.



**Fig. 32 - Secondary Yaws
(Follicular Lesions)
on the arms, buttocks and thighs.
(Case 12)**

CASE 12

DATE OF ADMISSION
17th JUNE, 1944

DISEASE
Secondary Yaws
(FOLLICULAR)

Name
ASOR & NSUA (E)
of BARSEWA

Age
12 years

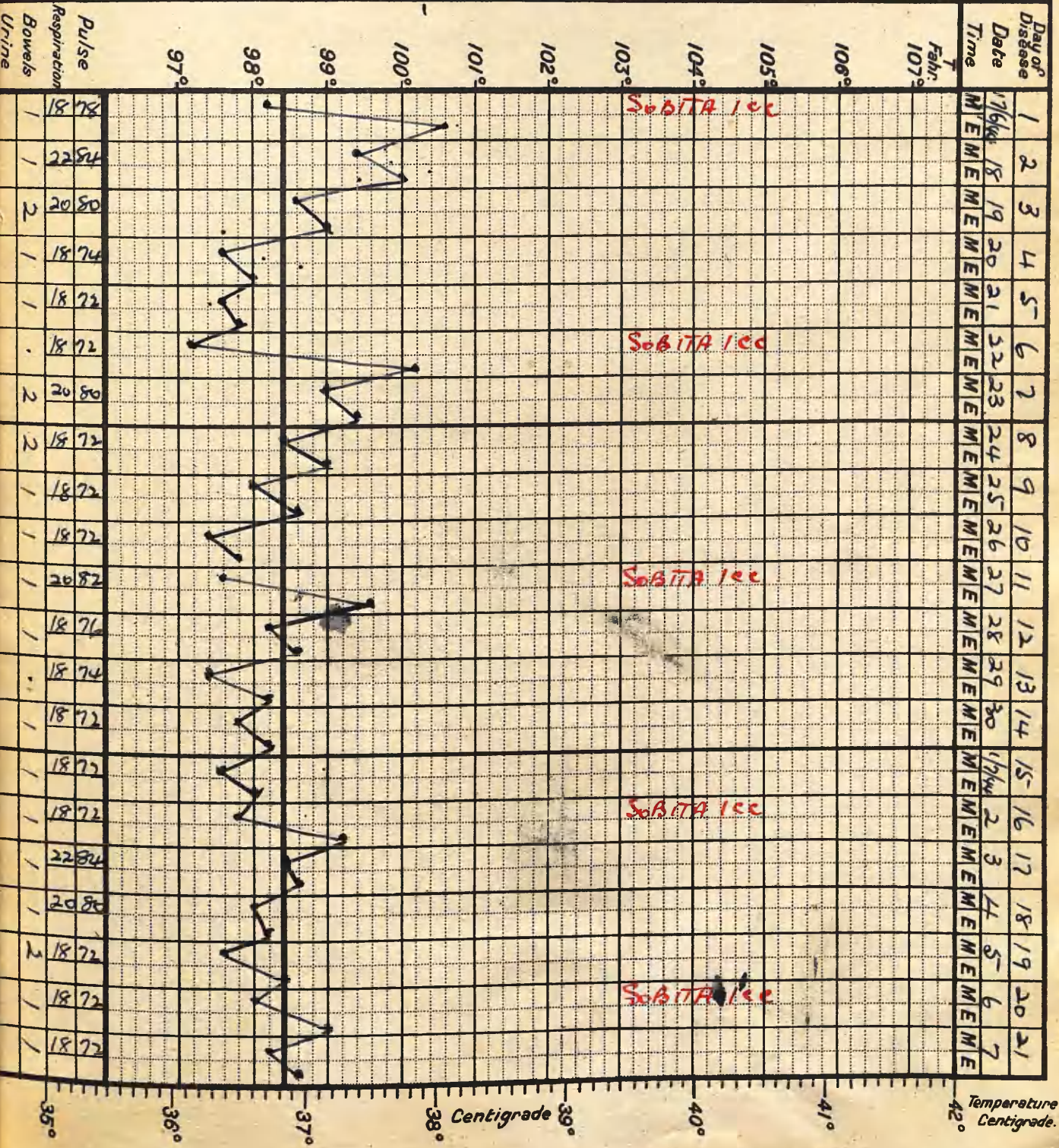
Diet

No. in Case Book

NOTES

Follicular Yaws
Lesions complete
by cleared

Result
CURED



CASE 13

AKO ONEKE of OKOMOKO,
MAMFE, CAMEROONS.

8th March, 1943
Male. 8 years

Occupation:-

Complaint:-

The patient complains of "big sores" appearing on the different parts of the body.

Duration:-

4 months.

History of Present Condition:-

Four months ago the patient noticed that there were big sores appearing on the different parts of the body. As they were not painful he did not bother much but applied sepui ointment to keep away flies. The big sores appeared suddenly without any fever or pain, and there was no small sore seen previously on the body. The patient was enjoying a good health condition prior to the appearance of the big sores.

Past History:-

The patient had fever on several occasions when he was but a child. About one year ago he had a lacerated wound on the right leg caused by felling dry woods. The wound healed without any delay, but the parts were tender for some weeks.

Family History:-

The father is dead and the cause of death is unknown. The mother who was operated on for stomach trouble, is now well and enjoys a good health. One year ago two members of the family were attacked by yaws and were successfully treated. They now enjoy a good state of health.

General Condition:-

The patient is fairly well nourished. The condition of the hairs and scalp is good. There is no jaundice, icteric tint of the conjunctivae, pain or tenderness of the bones. Oedema of the legs is absent.

Temperature 99.4°F. Pulse 84. Respiration 22.

Pulmonary System**Examination:-**

There are no eruptions on the scalp and the face but the chin of the lower mandible. The glands of the neck are moderately enlarged. The spleen is enlarged two finger breadth below the ~~costal margin.~~ ~~costal margin.~~ There are juicy yaws eruptions distributed irregularly on many parts of the body as follows:-

Lower Jaw : One

Buttocks : Four

Trunk(back) : Twelve

Penis : One

Left Foot(dorsal aspect) : Two.

Heart:-

The area of the superficial cardiac dullness is not increased and the apex beat lies in the fourth intercostal space within the mammary line. There are no adventitious sounds in the mitral and aortic areas, but the second pulmonic sound is accentuated.

Circulatory System

Pulmonary System

Gastro-Intestinal System

Nervous System

Urinary System

} Nothing abnormal is detected

Case 13(contd)

3

Diagnosis:-

Secondary Yaws

Result:-

Cured.

CASE 13

DATE OF ADMISSION
~~8th~~ **MARCH 4, 1943**

DISEASE
Secondary Yaws

Name
Ako DNEKE (M)
 of Okomoko

Age
8 years

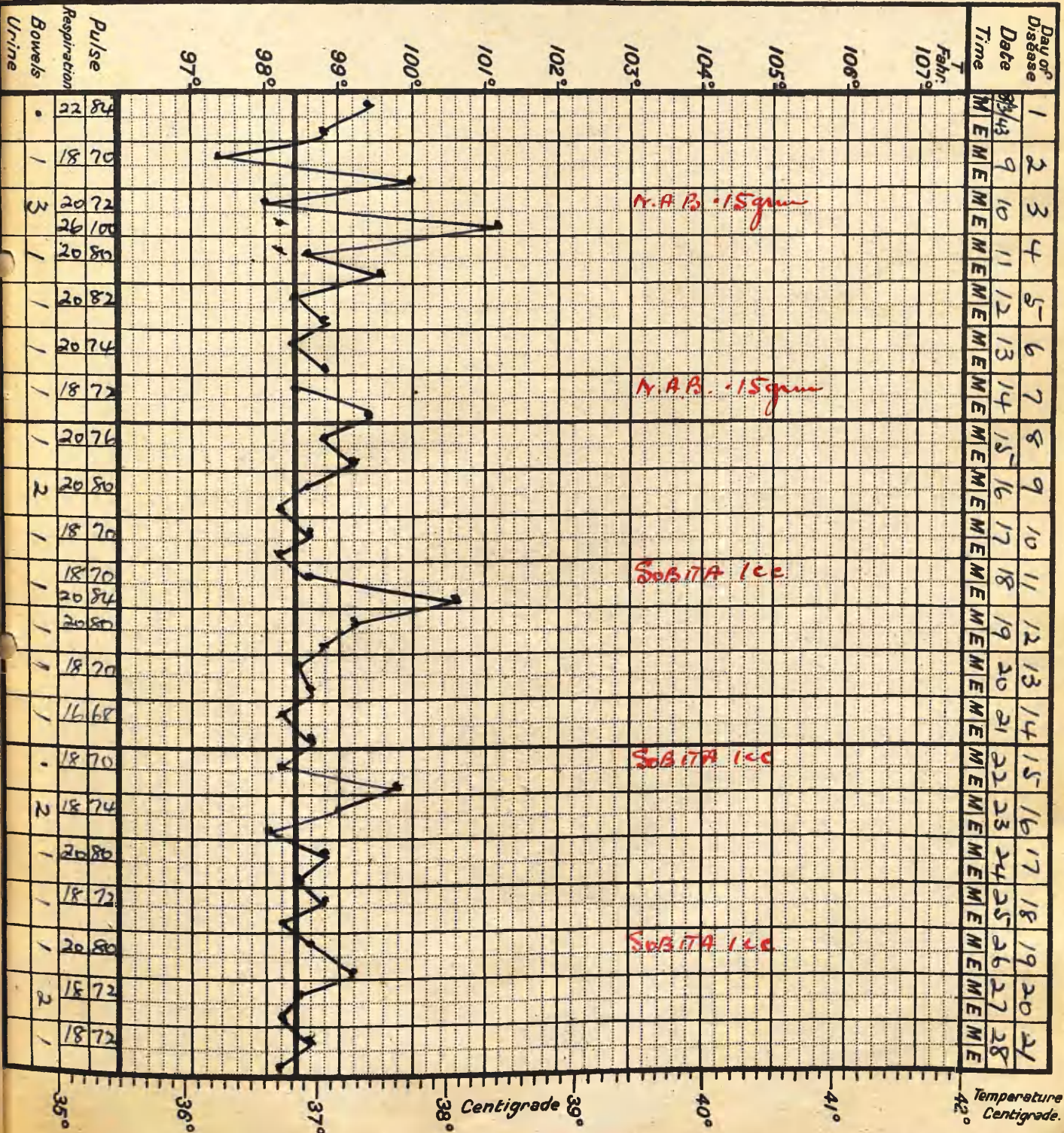
Diet _____

No. in Case Book _____

NOTES

Chancres healers

Result
CURED



CASE 13

DATE OF ADMISSION
24 March 1943

DISEASE
Secondary Yaws

Name
Ako Dyke (M)
of Okomoko

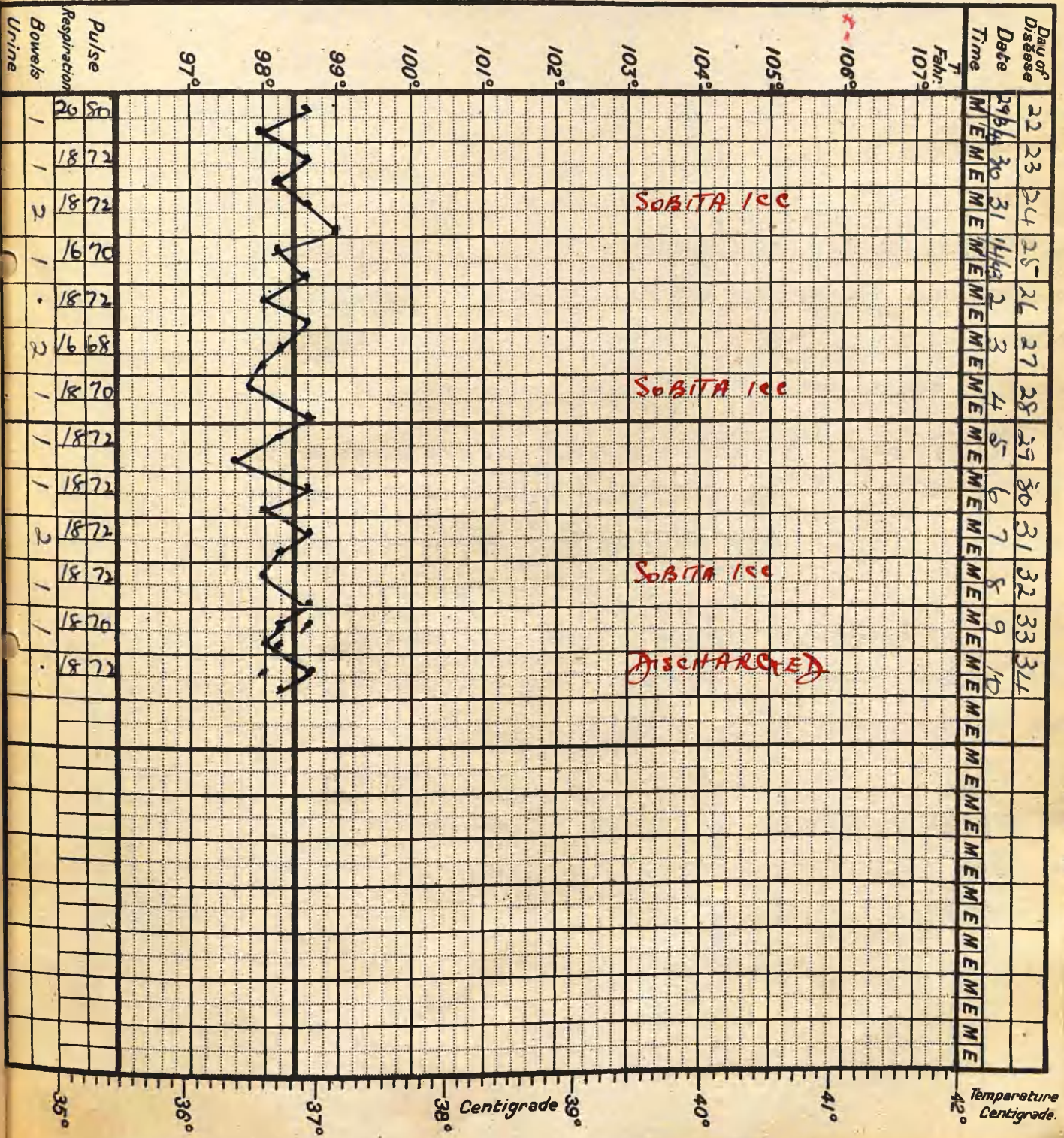
Age
8 years

Diet

No. in Case Book

NOTES
Yaws lesions cleared

Result
CURED



CASE 14

NDIP ENO of NTANAKU,
MAMFE, CAMEROONS.

12th April, 1942
12th April, 1942's
Female. 4 years

Occupation:-

Complaint:-

The patient's mother complains that there are sores on the child's body.

Duration:-

6 months.

History of Present Condition:-

The child had enjoyed a good health until eight months ago when she had a little sore on the back of the neck. The sore disappeared through the application of a powder to be followed in the course of three months by big sores on the different parts of the body. During the period the child was not sick, ate well, played with the children of the neighbourhood and moved about without any inconvenience.

Past History:-

The child had fever for a few months periodically. She had a severe cough (pertussis) when she was $1\frac{1}{2}$ years of age. There was no attack of any infectious disease during earlier years.

Family History:-

The father had leprosy and went to Itu Leper Settlement where he died a few years ago. The mother is alive and well. The elder sister had yaws one and a half years ago and was removed to another village for treatment.

General Condition:-

The patient's physique is good and she is well cared for.

There is no oedema in any part of the body, and no pain or tenderness in the long bones.

Temperature 97.8^oF. Pulse 116. Respiration 28.

Examination:-

The hairs, scalp, neck and face have no abnormal lesions.

There is no glandular enlargement. Ripe juicy yaws eruptions are scattered irregularly on the lower extremities.

Gastro-Intestinal System:-

The gums are tender and the tonsils are moderately enlarged. The abdomen is protuberant and the left side is on a higher level than the right. The spleen is enlarged downwards and inwards, and the notches are felt on palpation of the abdomen. No abdominal glands are palpable, and the liver is slightly enlarged. No peristalsis is visible on the abdomen and the anus is normal.

Heart

Circulatory System

Pulmonary System

Nervous System

Urinary System

No abnormality is detected.

Diagnosis:-

Secondary Yaws.

Result:-

Cured.

CASE 14

DATE OF ADMISSION

12th April 1943

DISEASE

Secondary Yaws

Name

Ng P. Eno (F)
of NTAHAKU

Age

4 years

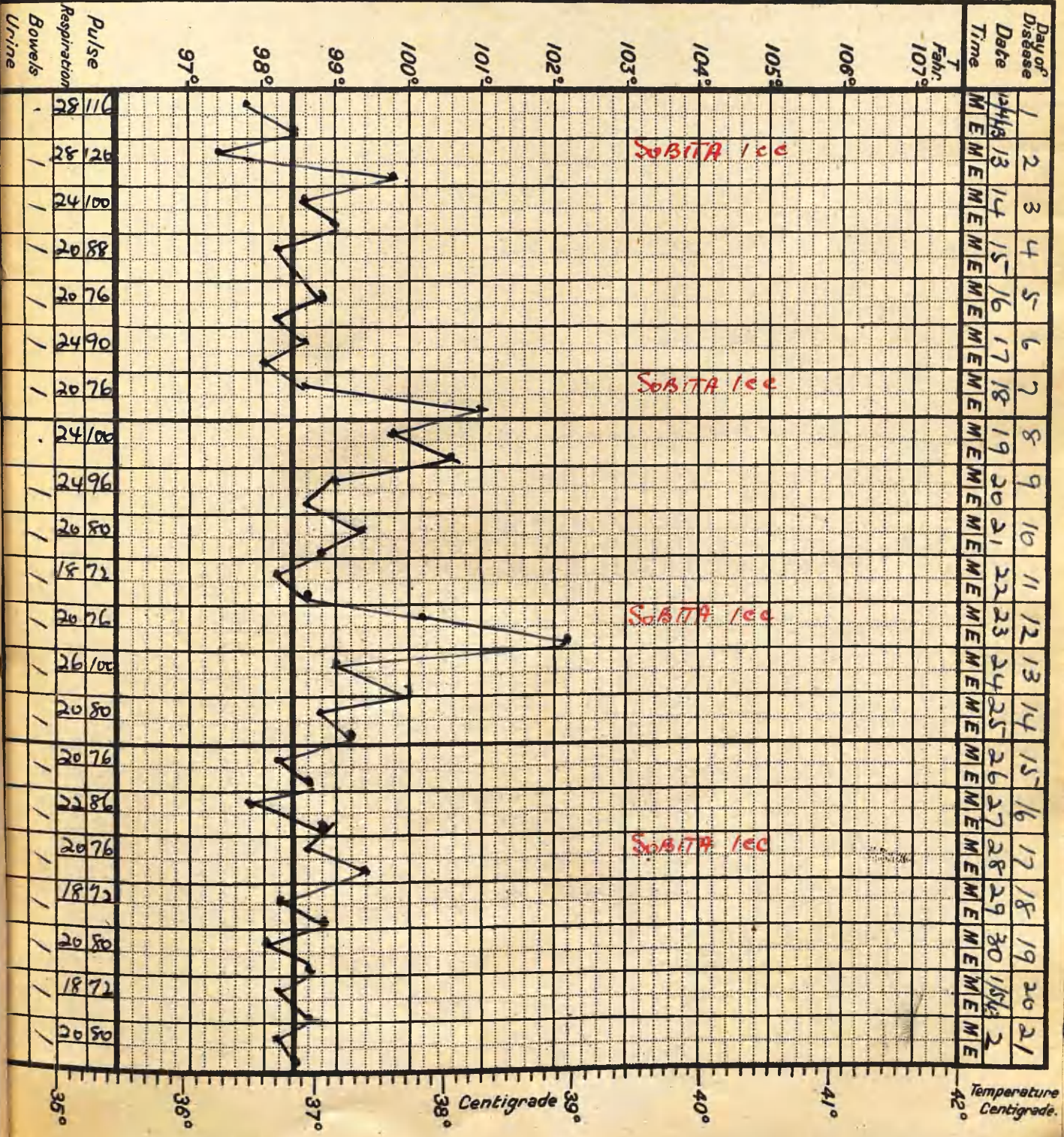
Diet

No. in Case Book

NOTES

Result

CURED



CASE 114

DATE OF ADMISSION

12th April, 1943

DISEASE

Secondary Yaws

Name

NAR ENO (F)
of NTRANKU

Age

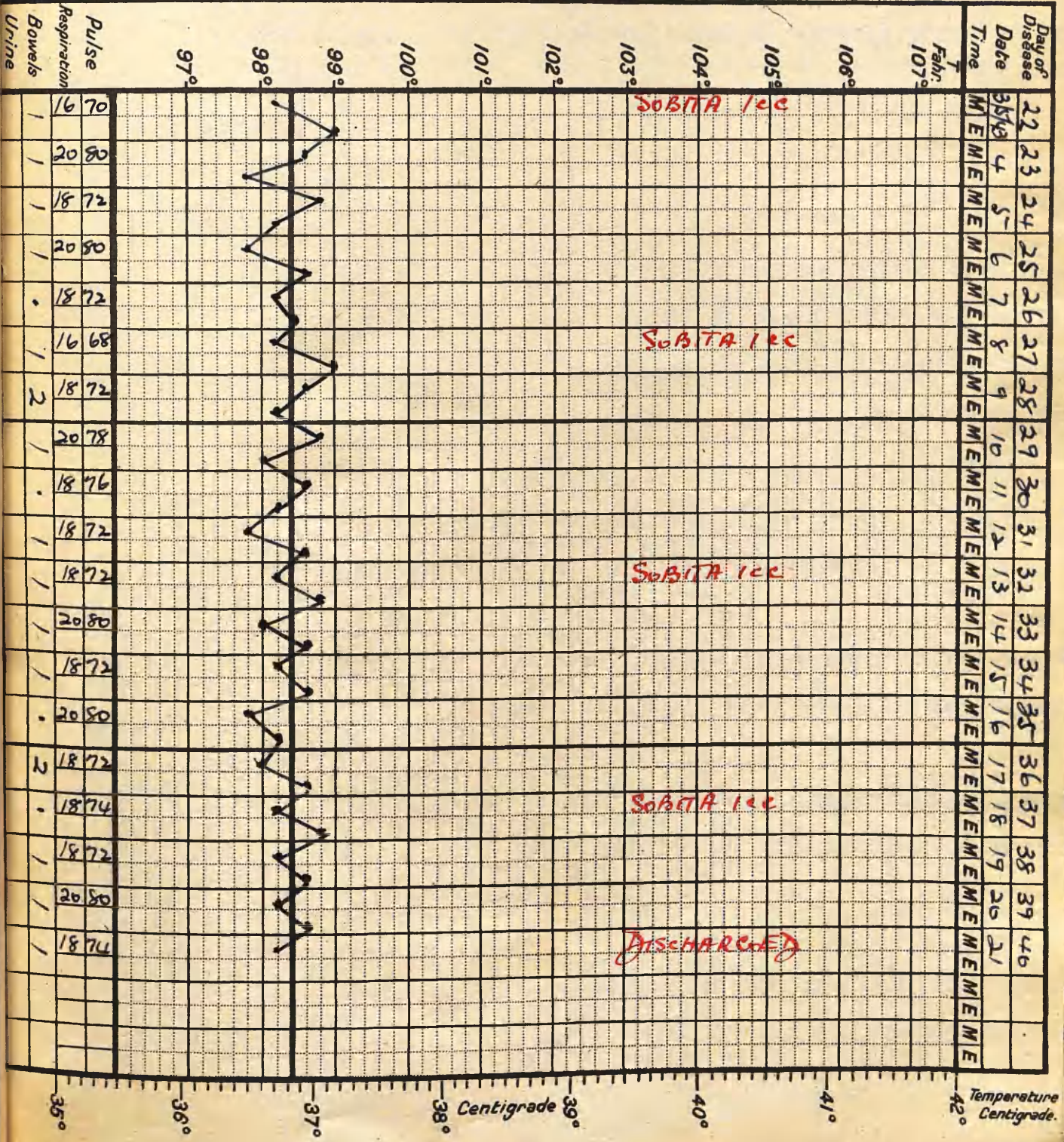
4 years

Diet

No. in Case Book

NOTES

Result
CURED



Temperature Centigrade

Centigrade

CASE 15

OJONG NJANG
of BACHUNG KAGBE,
MAMFE, CAMEROONS.

12th June, 1943
Female. 10 years

Occupation:-

Complaint:-

The patient complains of big sores on several parts of the body.

Duration:-

2 weeks

History of Present Condition:-

Ten weeks ago the patient's attention was called to a small raised spot on her back. Ordinary white powder was applied daily and the condition disappeared without leaving any mark at the spot. There was no other sore seen on the body for many weeks after until two weeks ago she saw big sores appearing on the different parts of the body. There was no fever, headache, pain on the body or bones.

Past History:-

Two years ago the patient suffered from cough which kept her at home. A few months after she had bacillary dysentery.

Family History:

The father and mother are dead. The younger brother had yaws two years ago and she attended him. Yaws affection is very common in the family.

General Condition:-

The patient is well developed and of a good muscular tone. The hairs are well kept and there is no abnormality in the throat.

CASE 15

DATE OF ADMISSION

12th JUNE, 1943.

DISEASE

SECONDARY YAWS

Name

STONCE NEAN (A)
of BROCHUNTS KASABE

Age

10 years

Diet

No. in Case Book

NOTES

Yaws lesions completely cleared

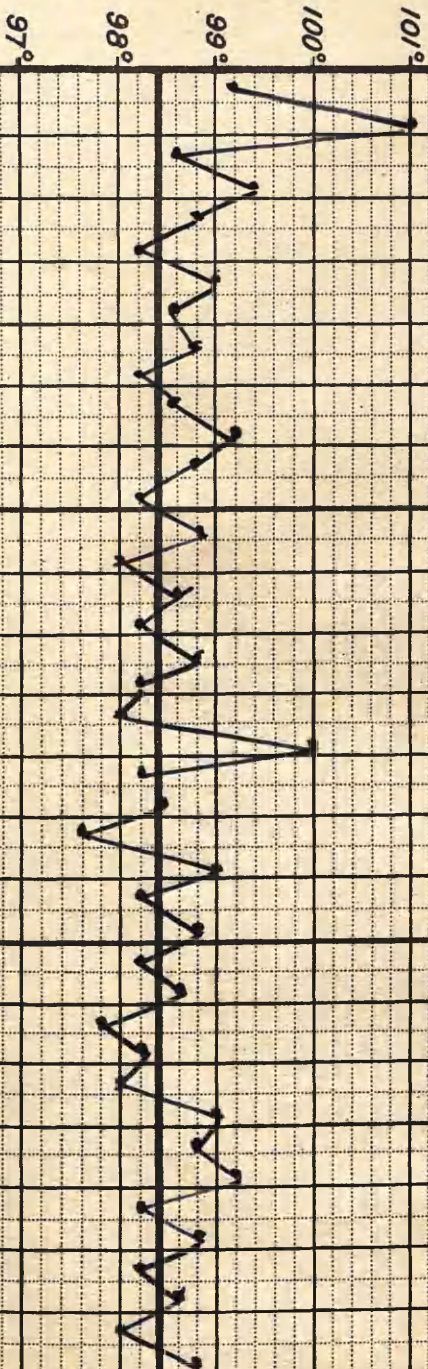
Day of Disease	Date	Fahr. 107°
1	12/6/43	
2	13	
3	14	
4	15	
5	16	
6	17	
7	18	
8	19	
9	20	
10	21	
11	22	
12	23	
13	24	
14	25	
15	26	
16	27	
17	28	
18	29	
19	30	
20	1/7/43	
21	2	

N.A.B. 15 gm - SOBATA 100

N.A.B. 15 gm - SOBATA 100

N.A.B. 15 gm - SOBATA 100

N.A.B. 15 gm - SOBATA 100



Pulse	Respiration	Bowels	Urine
82	22	.	.
85	20	-	-
78	18	-	-
70	18	-	-
76	18	-	-
80	20	-	-
82	20	-	-
76	18	-	-
72	18	-	-
70	18	-	-
72	18	-	-
100	24	-	-
68	16	-	-
76	18	-	-
72	18	-	-
74	18	-	-
78	18	-	-
72	18	-	-
70	16	-	-
72	18	-	-
72	18	-	-

Result
CURED

Temperature Centigrade.

CASE 16

OBASI AYOK ETTA,
of BESONG ABANG,
MAMFE, CAMEROONS.

1st February, 1939
Female . 3 years

Occupation:-

Complaint:-

The patient's mother complains of yaws on her child's body.

Duration:-

6 months.

History of Present Condition:-

About nine months ago the patient complained of fever, loss of appetite, and pain in the small joints. She refused to play with other children and preferred to be left alone. She was given purgative followed by quinine for some days without any amelioration of the symptoms. The condition after some weeks subsided, and the patient seemed well and cheerful. Three months later yaws eruptions appeared on the different parts of the body.

Past History:-

At the age of 18 months the child had measles. One year ago she suffers from cuts on the right leg. She had an attack of severe fever 2 years ago.

Family History:-

The father and mother are alive and well. The former has been operated for rupture, and the latter suffers from constipation and diarrhoea alternately.

Case 16(Contd)

General Condition:-

The patient has an oblong head and a protuberant abdomen. She is anemic. The dorsal aspects of the phalanges have skin affections (scabies) scattered all over them extending to the wrists. The palms are free. Skin affections are also present on the trunk and thighs extending beyond the knees. The conjunctivæ are slightly icteric, but there is no oedema of the legs.

Temperature 98.6^oF. Pulse 80. Respiration 20.

Examination:-

The hairs and scalps are in a good condition. There are crawcraw and scabies on the hands, wrists, trunk, thighs and knees. Yaws eruptions are scattered on the face, neck, back, trunk and buttocks. There is no enlargement of the glands of the neck, axillæ or groins.

Heart:-

There is no visible pulsation in the cardiac area and no enlargement found on percussion. There are no abnormal sounds heard in the aortic and pulmonic area, but hæmic murmur is heard over the mitral area.

Gastro-Intestinal System:-

The tongue is dirty and the teeth are in a bad condition. The tonsils are enlarged and the pharyngeal wall is congested. There are no abdominal glands felt on palpation, but the spleen is slightly enlarged. The liver is not palpable.

CASE 16

DATE OF ADMISSION
1st FEBRUARY, 1939

DISEASE
Secondary Yaws

Name
OBASI AYOK ETA (F)
of Besons Akank

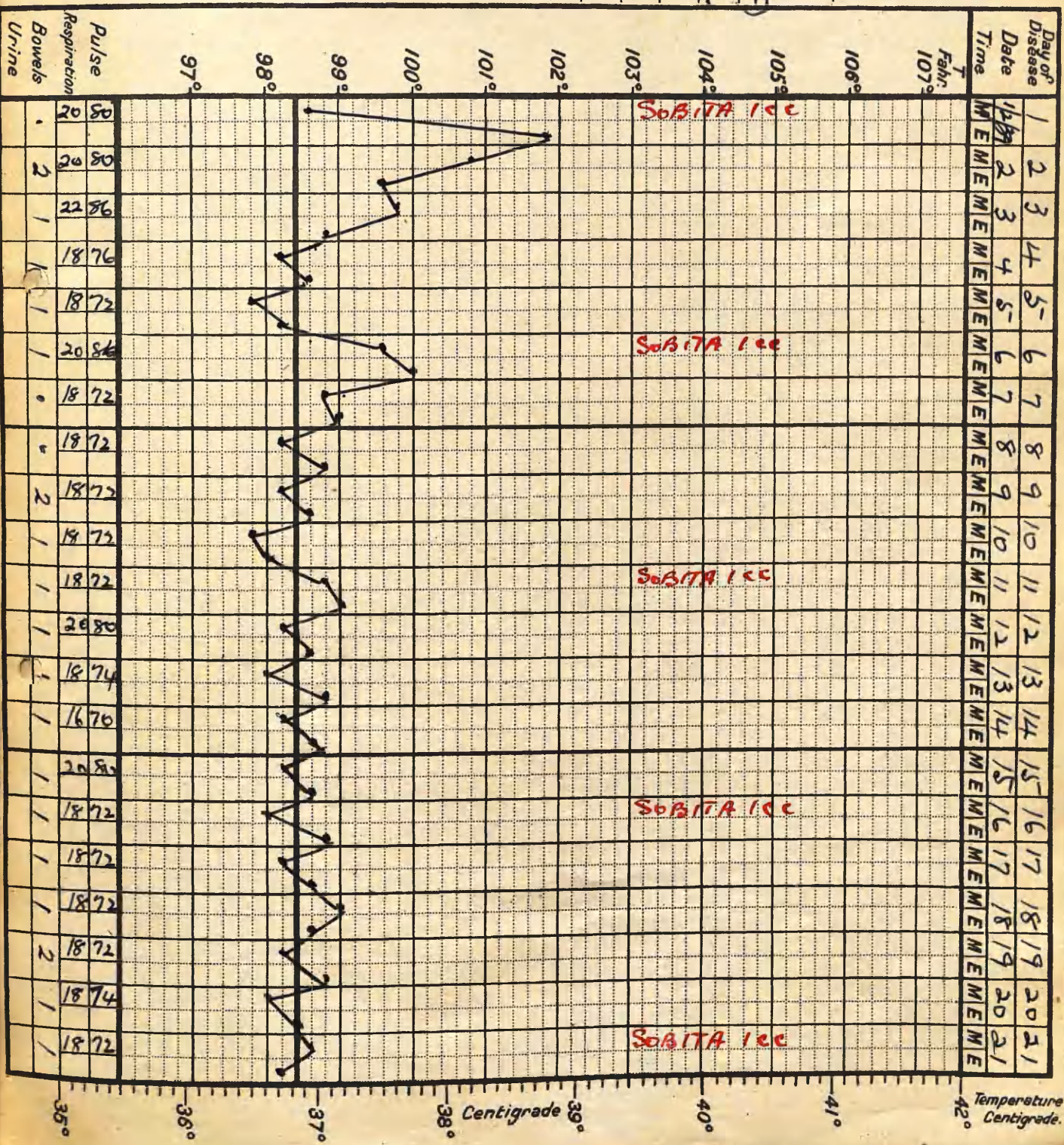
Age
3 years

Diet

No. in Case Book

NOTES

Result
CURED



CHAS. THACKRAY LTD SURGICAL INSTRUMENT MAKERS LEBER AND LONDON

CASE 16

DATE OF ADMISSION
1st FEBRUARY, 1931

DISEASE
SECONDARY YAWS

Name

OBASI AYOK ETIHI
of BESONSIFARRA

Age

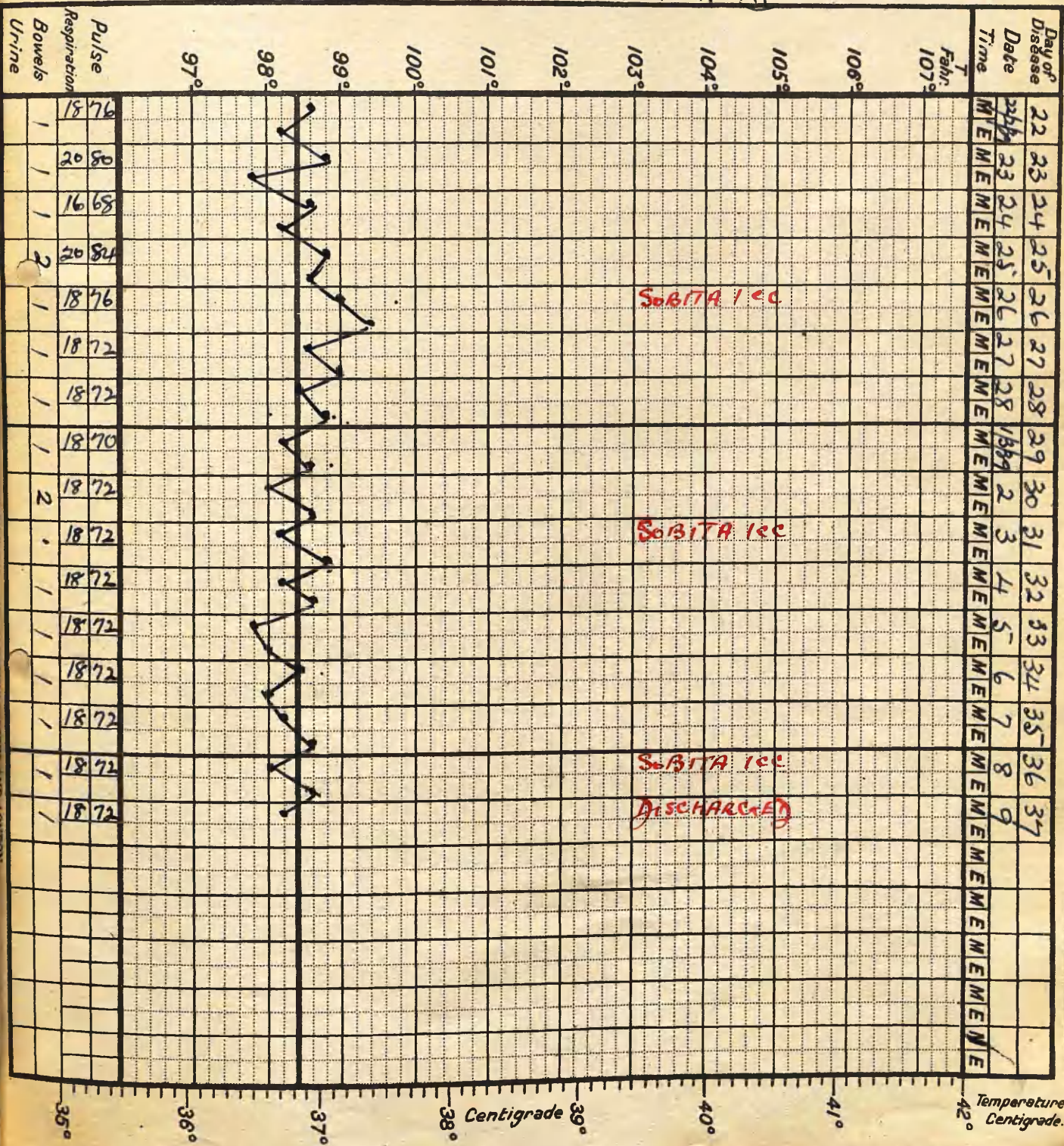
3 years

Diet

No. in Case Book

NOTES

Result
CURED



Temperature Centigrade

Centigrade

CASE 17

O BEN OJONG of AKAK,
MAMFE, CAMEROONS.

17th June, 1939
Male. 9 years

Occupation:-

Complaint:-

The patient complains of yaws on the right thigh.

Duration:-

3 months.

History of Present Condition:-

Prior to eight months ago the patient enjoyed a good health, playing cheerfully with his friends at school and in the neighbourhood, and was doing well at school. One morning the patient returned home at an unusual hour with a strong fever and pain all over the body. He was given liquid quinine for a fortnight but the pain did not subside, and so the dispensary attendant's aid was sought. After a month the fever decreased but the pain in the body continued until three months ago when yaws eruptions appeared on the body.

Past History:-

The patient was a case of forceps delivery without any injury sustained. He had suffered from enlarged spleen, bacillary dysentery and pain in the muscles during childhood.

Family History:-

The father died three years ago of abscess in the lung. The mother is alive and healthy. The brothers and sisters are well. There is no history of yaws in the family, but cases of yaws and leprosy are many in the village.

Case 17 (contd)

General Condition:-

The child looks sickly, but his development physically and mentally is normal and satisfactory. There is no pain or tenderness in the muscles or bones. The conjunctivae are tinted yellow.

Temperature 98⁰.F. Pulse 104. Respiration 26.

Examination:-

The hairs and scalp are in a good and healthy condition. There are no eruptions or skin lesions on the neck and trunk.

The skin of the face and upper extremities have no lesions except two moles - one on the lower jaw and the other on the right forearm. There are a few yaws on the anterior aspects of both thighs, and seven ripe juicy yaws scattered on the buttocks.

Heart

Circulatory System

Pulmonary System

Gastro-Intestinal System

Nervous System

Urinary System

Nothing abnormal is detected.

Diagnosis:-

Secondary Yaws.

Result:-

Cured.

CASE 17

DATE OF ADMISSION
17th June, 1939.

DISEASE
Secondary Yaws

Name
DREN DIONG (M)
of AKAK

Age
9 years

Diet

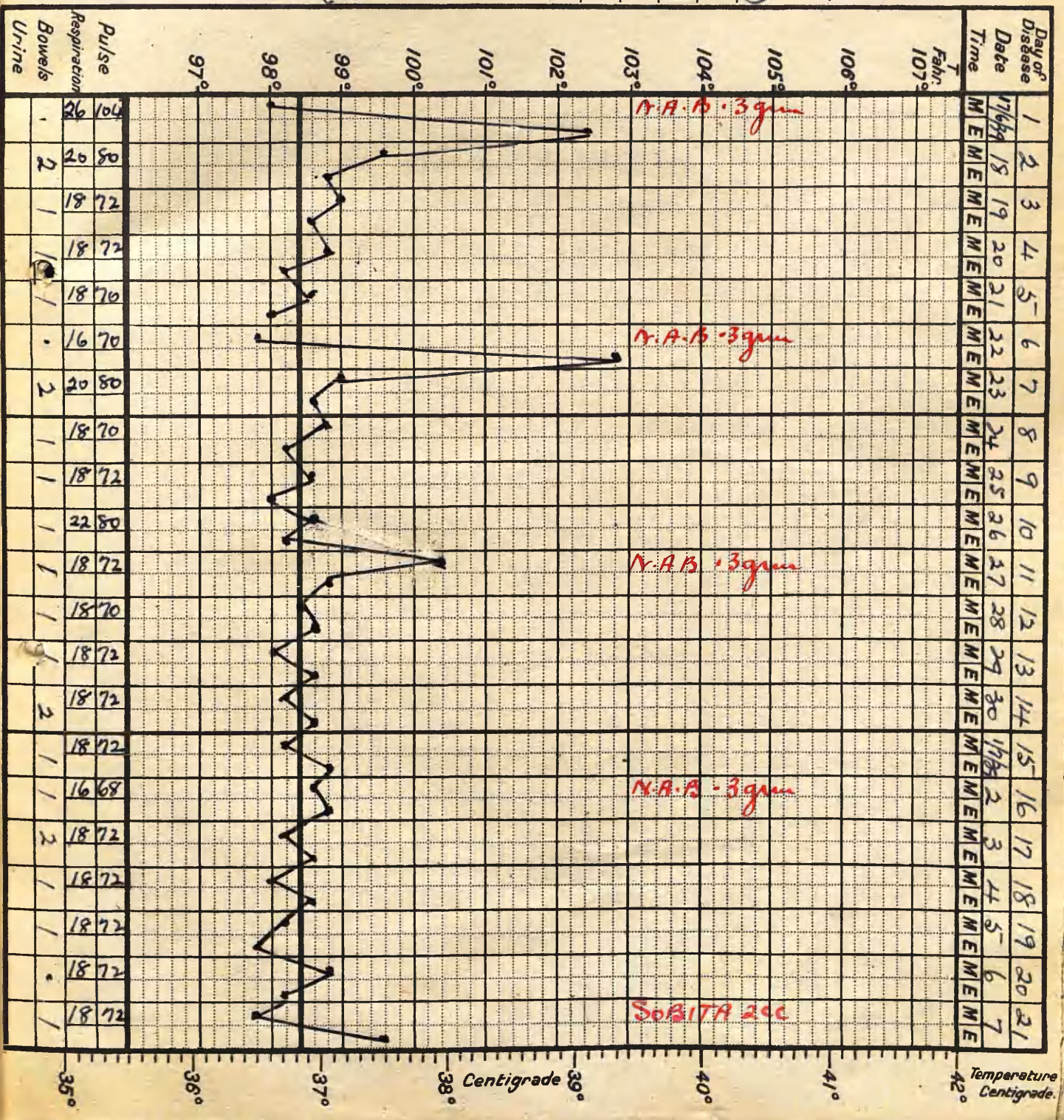
No. in Case Book

NOTES

Short course treatment with large doses of N.A.B. Sobita. Patient was seen again in August 1944, and there were no lesion marks on the body.

Result

CURED



CASE 17

DATE OF ADMISSION

17th JUNE, 1939

DISEASE

Secondary Yaws

Name

OREN STONG (M)
of AKAK

Age

9 years

Diet

No. in Case Book

NOTES

Short course
Treatment with
large doses of
N. P. B. & Soda.
Rheumat was seen
again in August
1944, there were
no lesion marks
on the body.

Result

CURED

Day of Disease	Date	Time	Fahr.	Pulse	Respiration	Bowels	Urine
22	8/7/39		107.5	72	18	1	
23	9		106.5	72	18	1	
24	10		105.5	72	18	1	
25	11		104.5	70	16	1	
26	12		103.5	72	18	1	
27	13		102.5	80	20	1	
28	14		101.5	72	18	1	
29	15						

SODIA 2 CC

DISCHARGED



Temperature Centigrade

Centigrade

35°

36°

37°

38°

39°

40°

41°

42°

CASE 18

6th January, 1940
Male. $3\frac{1}{2}$ years.

NSO ARREY of AFAK,
MAMFE, CAMEROONS.

Occupation:-

Complaint:-

The patient complains of sores on the head and buttocks.

Duration:-

2 months.

History of Present Condition:-

The ^{health} patient of the patient was good until he had irregular fever, pain in the small joints, and no desire for food six months ago. A little sore like fly-bite was seen during the period on the right buttock, but it quickly healed. The symptoms subsided and the appetite was good. About four months ago yaws appeared on the head and other parts of the body. The patient was treated at home for a few days.

Past History:-

The patient suffered from fever, pain and passing of watery stools during infancy.

Family History:-

The parents are alive and well. There is no history of yaws in the family as the children are not allowed to play with children suffering from yaws or crawcraw. There is no obvious tendency to any disease in the family.

General Condition:-

The patient is ^awell nourished child with a good complexion. He is well cared for. There is no oedema of the legs, and no icteric tint of the conjunctivae.

Temperature 99°F. Pulse 116. Respiration 28.

Case 18(contd)

Examination:-

The hairs are in a good condition, but the scalp has four yaws eruptions on the right temporal region nearer to the upper portion of the auricle of the ear; one yaws eruption on the lower portion of the occiput; and two yaws eruptions on the upper portion of the forehead just under the hairs. One solitary yaws eruption on the lower jaw; two yaws eruption on the right ear; one yaws eruption on the right buttock and three yaws on the pubic region. The anal region has two yaws eruptions.

Heart

Circulatory System

Pulmonary System

Gastro-Intestinal System) There is nothing abnormal found.

Nervous System

Urinary System

Diagnosis:-

Secondary Yaws

Result:-

Cured.

CAS 18

DATE OF ADMISSION

14 January 1940

Secondary Yaws

DISEASE

Name

Nso Arrey
of AFAK

Age

3 1/2 years

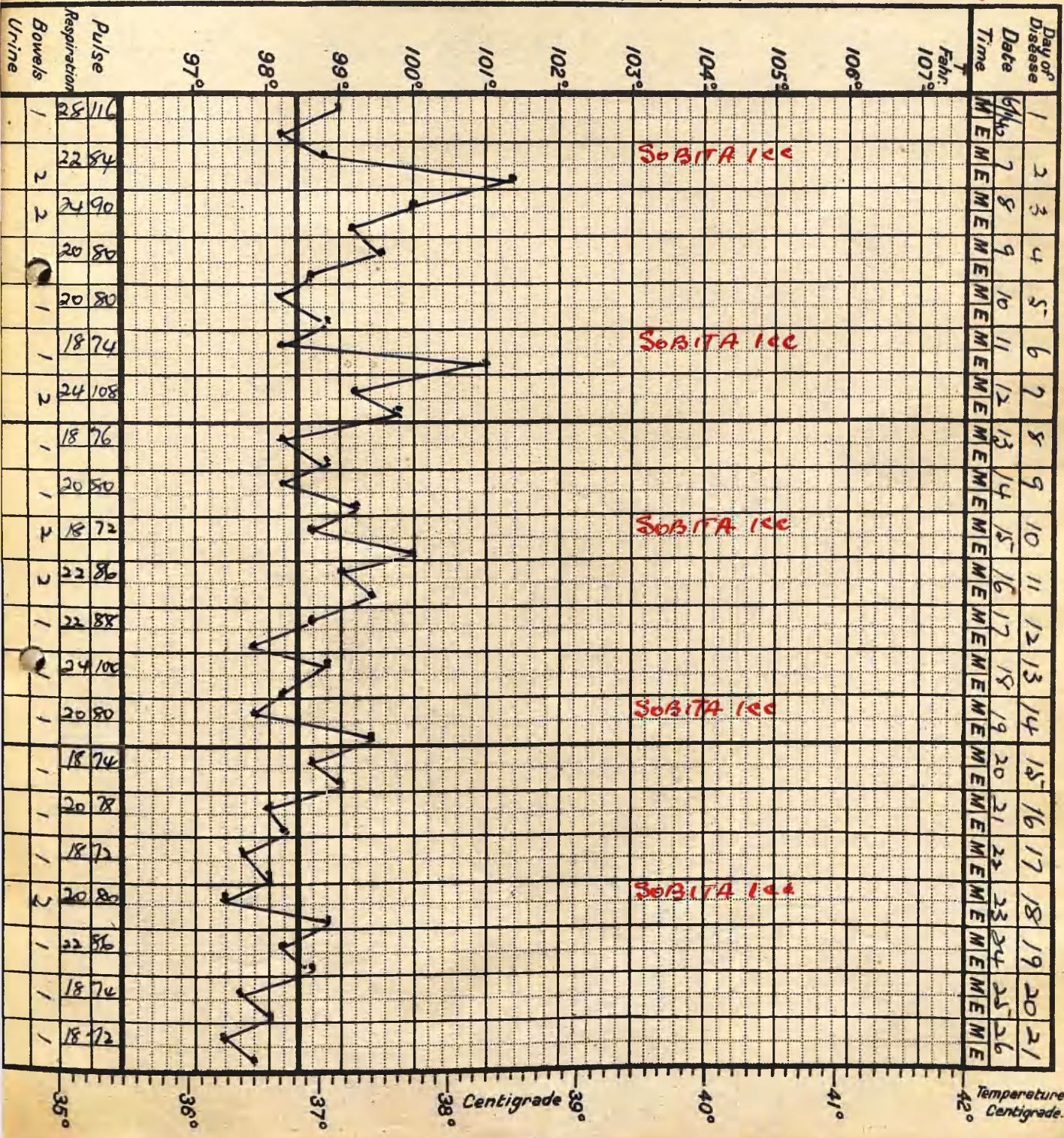
Diet

No. in Case Book

NOTES

Result

CURED



CASE 18

DATE OF ADMISSION

6th JANUARY, 1940

DISEASE

SECONDARY YAWS

Name

N50 ARREY (M)
of AFAR

Age

3 1/2 years

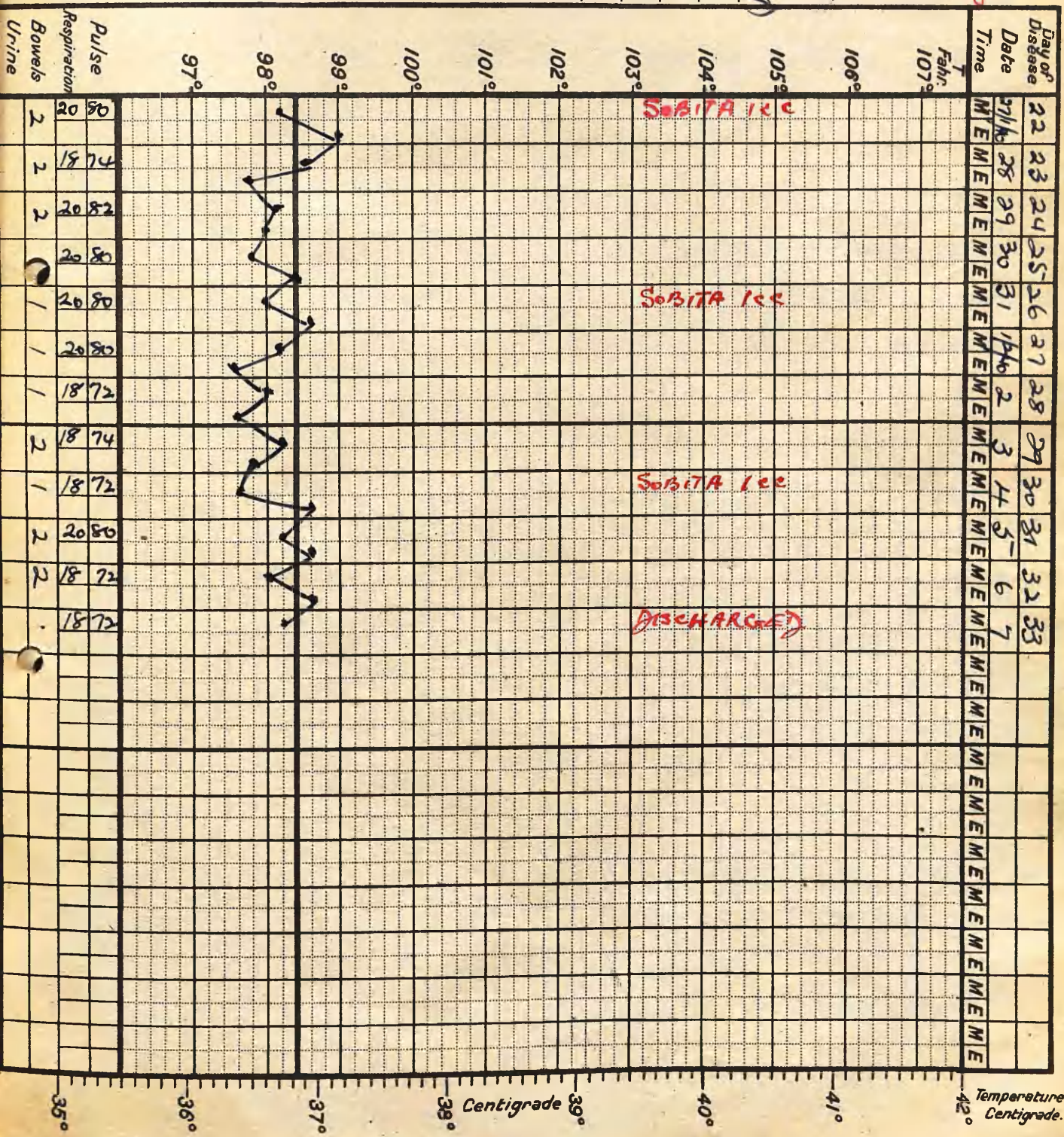
Diet

No. in Case Book

NOTES

Result

CURED



SOBITA ICE

SOBITA ICE

SOBITA ICE

DISCHARGED

Temperature Centigrade. 35° 36° 37° 38° 39° 40° 41° 42°

CASE 19

EKWA KEMA
MAMFE, CAMEROONS.

21st March, 1944
Female. 38 years
Married. 4 Children.

Occupation:-

Trader.

Complaint:-

The patient complains of sores on the face.

Duration:-

One month.

History of Present Condition:-

The patient enjoyed a good health prior to six months ago. Five months ago she noticed a small sore which later disappeared, on the right thigh. One month ago sores appeared on her nose and cheek.

Past History:-

The patient contracted smallpox when she was young. She had dysentery(unspecific) before marriage.

Family History:-

The patient is married and the husband is alive and well. There are four children who are in a good state of health. The patient's father and mother are dead, but the cause of death is unknown.

General Condition:-

The patient is well nourished and of a medium form. There is no oedema of the legs or ankles, and no jaundice or icteric tint of the conjunctivae.

Temperature 98.6° F. Pulse 72. Respiration 20.

Case 19(contd)

Examination:-

The hairs, scalp and neck have no lesion. There are yaws eruptions on the nose, cheek and upper extremities, and follicular lesions on the upper extremities and trunk.

Heart

Circulatory System

Pulmonary System

Gastro-Intestinal System) Nothing abnormal is detected.

Nervous System

Urinary System

Diagnosis:-

Secondary Yaws

Result:-

Improved.

Yaws lesions cleared rapidly, but the patient absconded before a complete cure.



Fig.37 - Secondary Yaws
of the nose, cheek and upper
extremities.
Note the follicular lesions on
the trunk(Case 19).

CASE 19

DATE OF ADMISSION

21st March, 1944

DISEASE

Secondary Yaws

Name

EKWA KEMAF
of METANI

Age

38 years

Diet

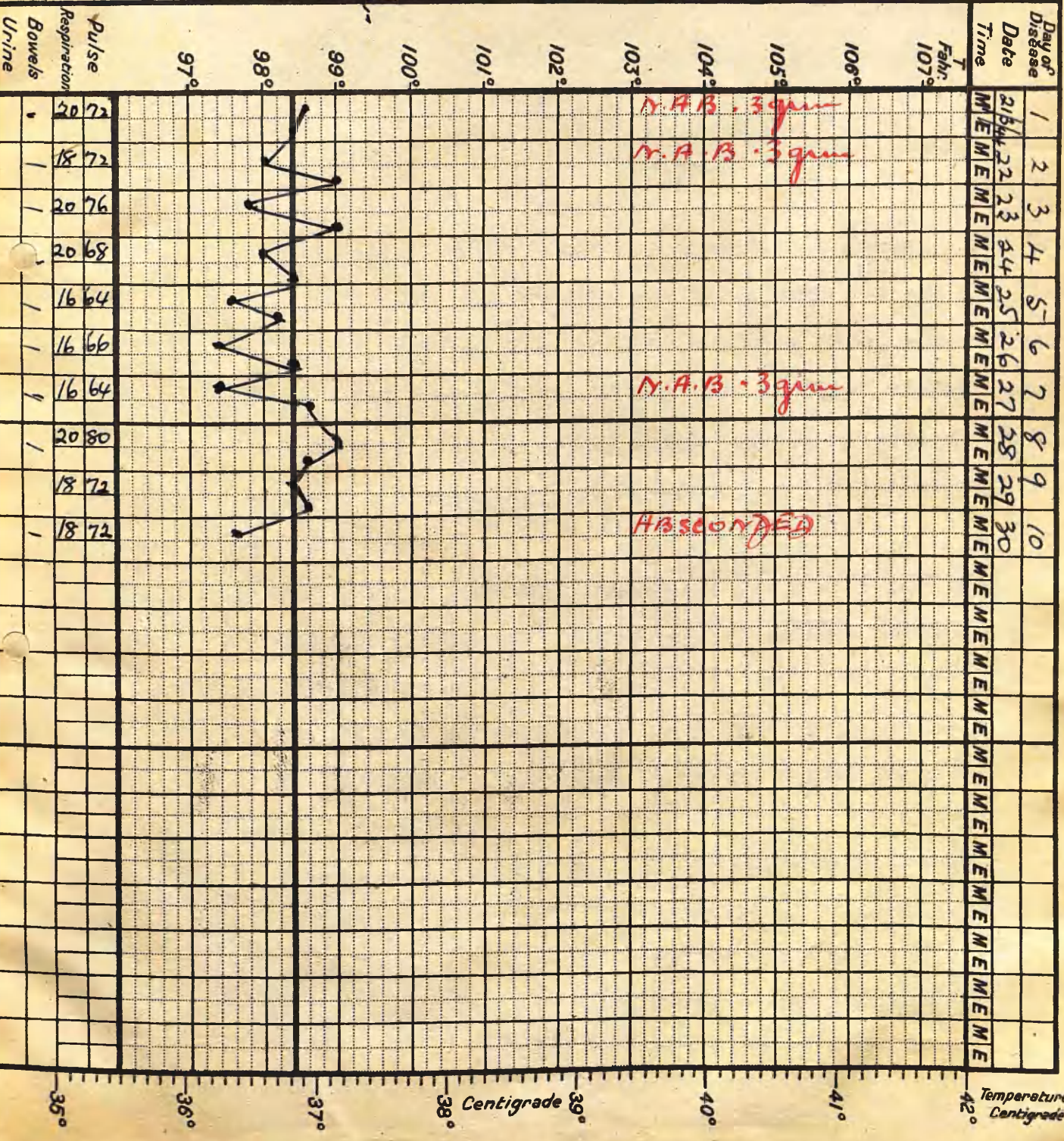
No. in Case Book

NOTES

Yaws lesions cleared naturally!
Foliant absent

Result

Improved



Temperature Centigrade.

Centigrade

CASE 20

EGBE AGBOR of BANYANG,
MAMFE, CAMEROONS.

6th February, 1943.
Male. 2½ years

Occupation: -

Complaint: -

The patient's mother says that the child complains of pain in the long bones; and there are sores on the body.

Duration: -

One week.

History of Present Condition: -

The health of the child was satisfactory since birth until three months ago when he had fever with pain in the finger joints, and the frontal aspect of the right leg was painful and tender to touch. He was "out of sort" and the appetite was poor. The fever and pain, however, subsided after a month. A week ago sores appeared on the patient's body.

Past History: -

The patient suffered from fever for a few days with the passing of frequent stools about eighteen months ago.

Family History: -

The father and mother are in a good state of health with the other children. The health of the family is good.

General Condition: -

The patient is well fed and carefully looked after. There is no oedema of the legs, no jaundice or icteric tint of the conjunctivae. The spleen is not enlarged.

Temperature 99.6°F. Pulse 102. Respiration 22.

Case 20(comtd)

Examination:-

The hairs and scalp are in a good condition. There are a few yaws eruptions scattered irregularly on the face and upper extremities. The neck and trunk are free of lesions, but the buttocks have five yaws eruptions. The lower portions of the tibiae, the joints of the fingers and the wrists are tender.

Heart

Circulatory System

Pulmonary System

Gastro-Intestinal System) Nothing abnormal is found.

Nervous System

Urinary System

Diagnosis:-

Secondary Yaws.

Result:-

Cured.

CASE 20

DATE OF ADMISSION
Feb. FEBRUARY, 1943

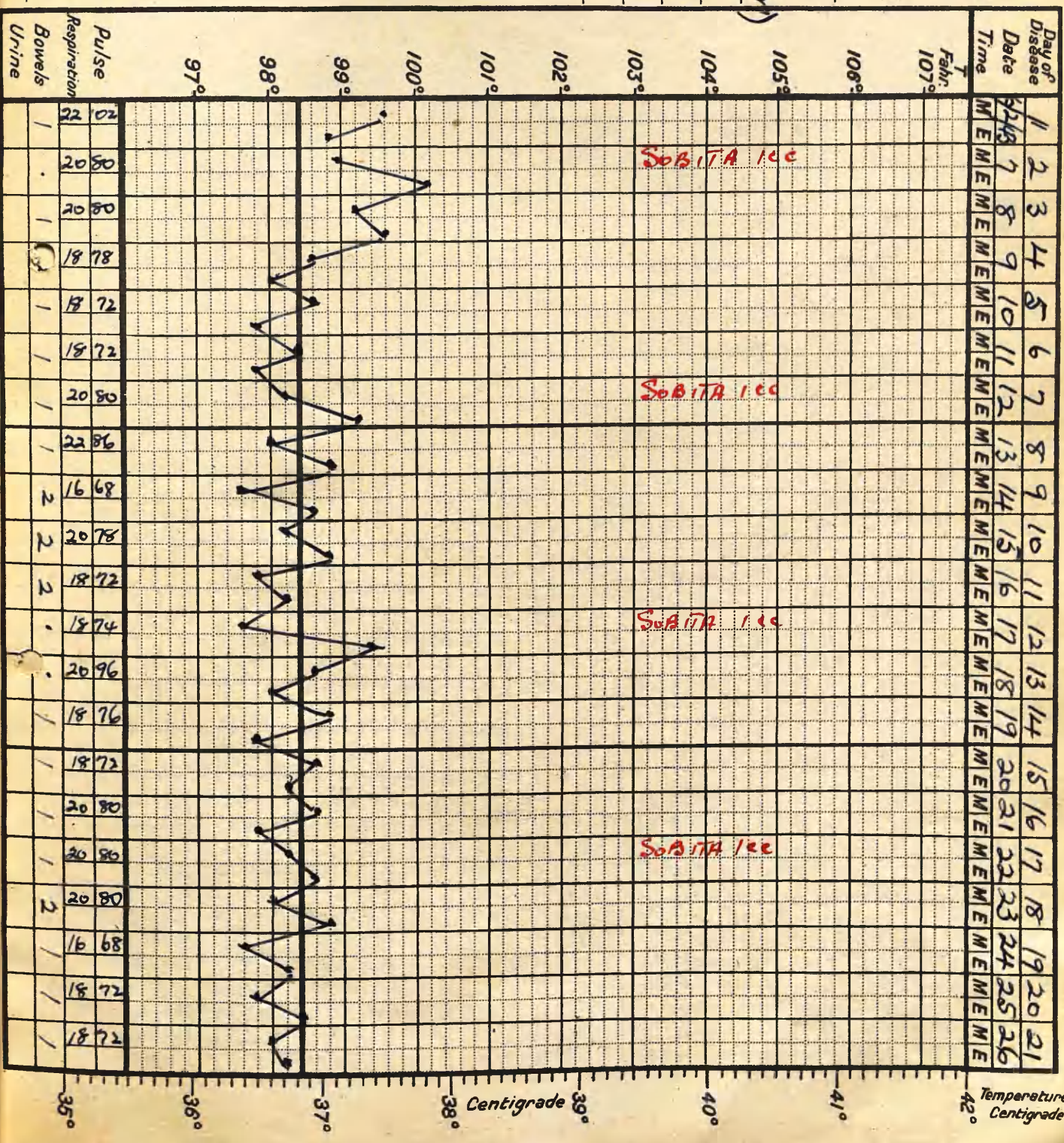
DISEASE
Secondary Yaws

Name
EUGENE A. GIBSON
of BANYAN
Age 2 1/2 years

Diet

NOTES

Result
CURED



Temperature Centigrade.

Centigrade

CASE 20

DATE OF ADMISSION

6th FEBRUARY, 1943

DISEASE

SECONDARY PNEUMONIA

Name

ESPERANZA (M)
of BAHAYANES

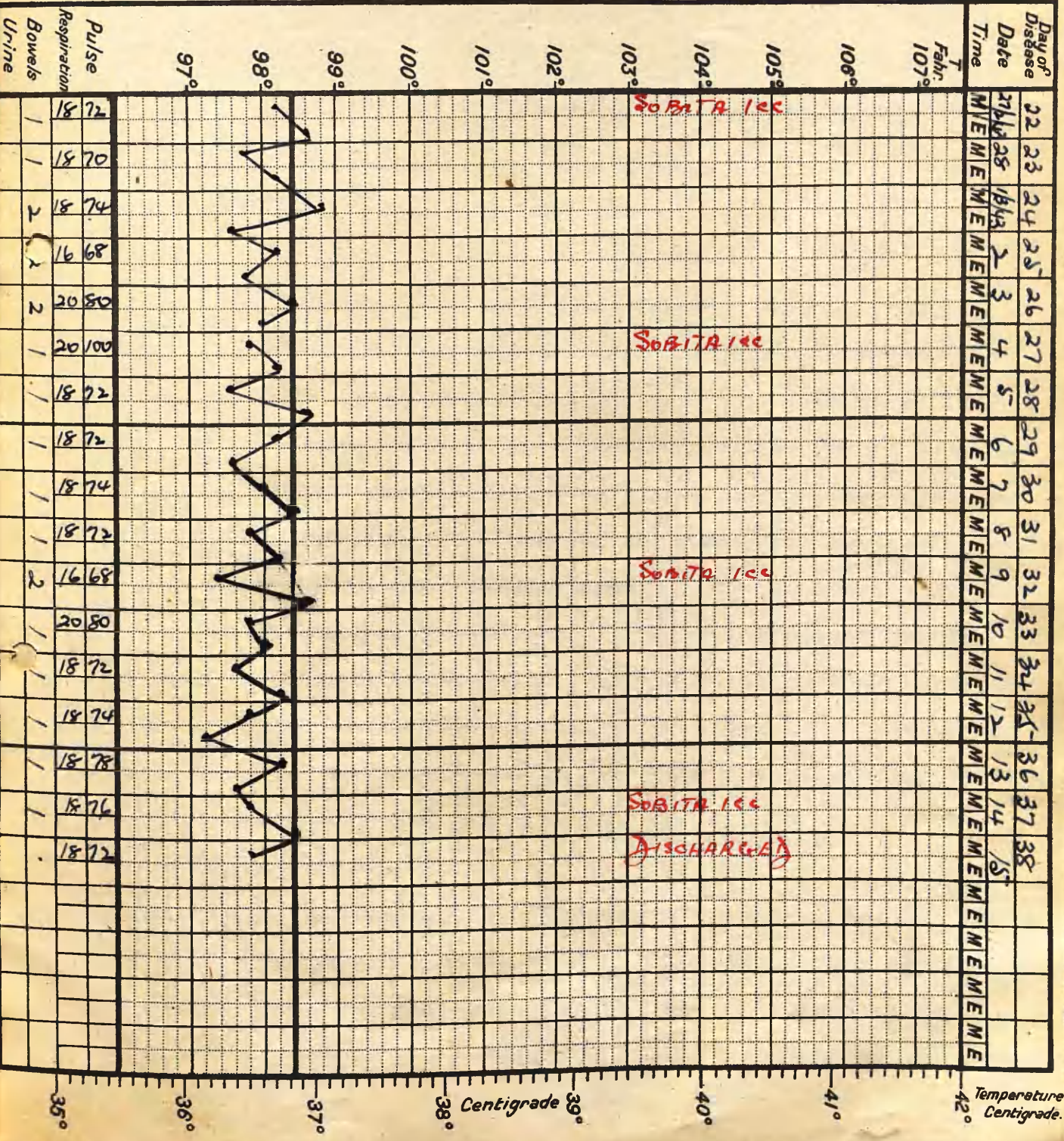
Age 25 years

Diet

No. in Case Book

NOTES

Result
CURED



Temperature Centigrade.

Centigrade

CASE 21

AWUNJA MORFAW
of FONTEM,
MAMFE, CAMEROONS.

15th January, 1945
Female. 34 years

Occupation:-

Housewife.

Complaint:-

The patient complains of patches and sores on the breast and thigh.

Duration:-

3 years.

History of Present Condition:-

After marriage at the age of 24 years the patient had been in a good condition of health until four years ago when gray patches appeared and scattered irregularly on the trunk and lower extremities. There was no pain or any inconvenience. One year after, owing to the unpleasant sight of the patches, she used some rough leaves (natural sand-paper leaves) to remove the patches, but the result was sores on the breast and thigh. Since then she used different methods to effect a removal without success, but instead scars were formed in some parts of the body due to healing ^{or} partial healing of sores.

Past History:

The patient was married, but there was no issue. She had yaws when she was 20 years old, and suffered from eye trouble with white discharges some years ago. A few months ago she had malarial fever. There were multiple sores on the private

Case 21(contd)

parts when she had yaws, but no rashes or patches symmetrically on the body. She had no abortion or miscarriage.

Family History:-

The mother is dead, but the father is alive and healthy. The husband is alive and healthy. Yaws affection is common in the family and many children in the compound suffer from yaws.

General Condition:-

The hairs, face and neck are in a good condition. There is no undue protrusion of the abdomen, and the abdominal muscles have a good tone. There is no oedema of the legs, anaemia, jaundice or icteric tint of the conjunctivae.

Temperature 98⁰F. Pulse 76. Respiration 20.

Examination:-

The condition of the hairs and neck is good, and the glands of the neck are not palpable. There are gray and dark patches and white areas(albino area) scattered over the trunk and lower extremities. The right breast has a superficial sore bounded by dark patches. There is also a superficial sore on a large scar on the left thigh. Healed and partially healed scars are scattered irregularly on the different parts of the body, particularly on the extremities. The periosteae of the tibiae are thickened and the skin adhered to the bones.

Heart) Nothing abnormal is found.
Circulatory System	
Pulmonary System	
Gastro-Intestinal System	
Nervous System	
Urinary System)

Diagnosis:-

Tertiary Yaws.

Case 21(contd)

Result:-

Relieved.

CASE 21

DATE OF ADMISSION

15th JUNE 1945

DISEASE

TERTIARY Syphilis

Name
Annita McEwan (F)
of FORT-EM BRAYANCE

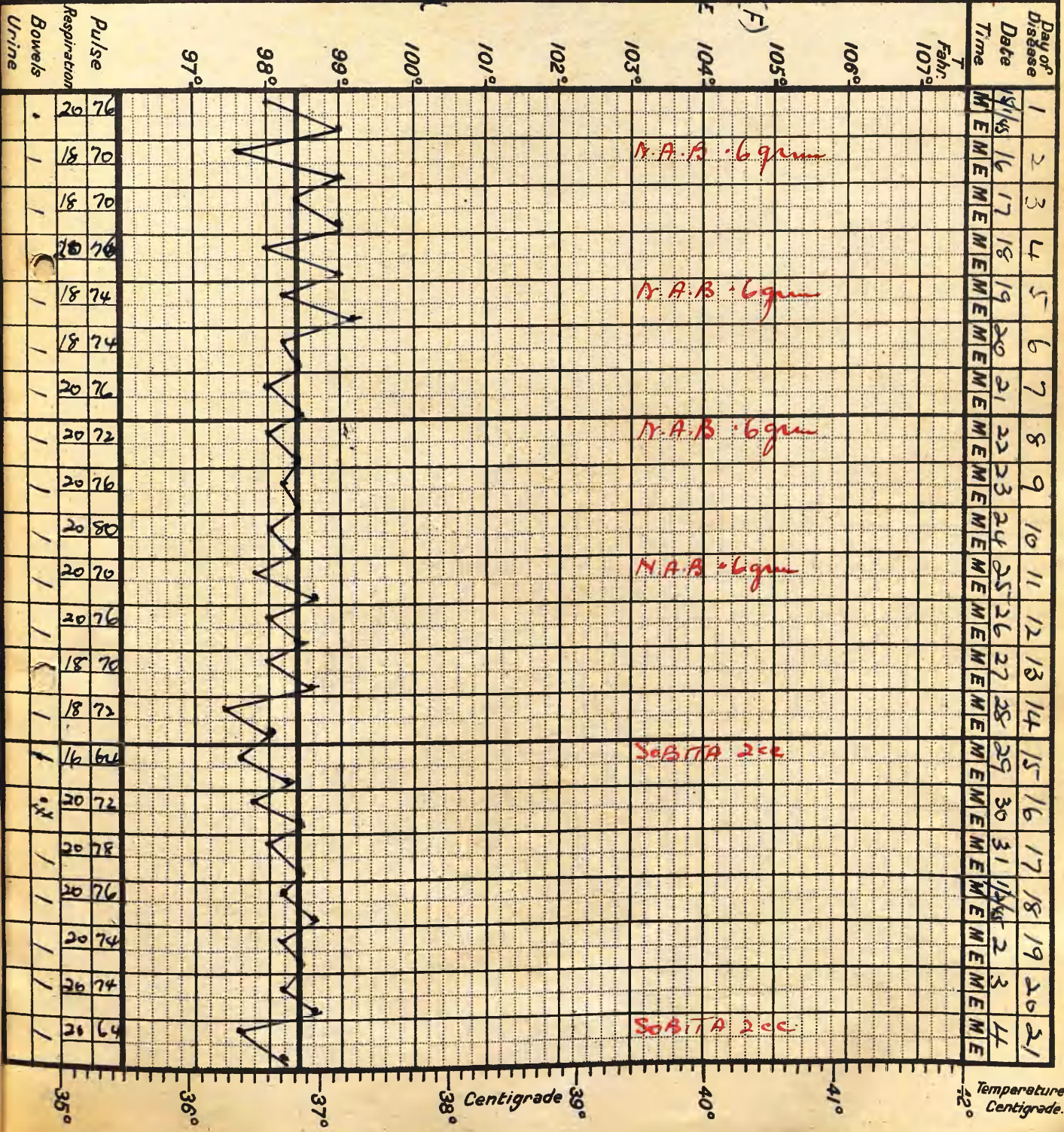
Age
34 years

Diet

in Case Book

NOTES
Skin patches
partially cleared

RELIEVED



CASE 22

BESEM ETTA
of BACHUNG NTAI,
MAMFE, CAMEROONS.

27th January, 1943.
Female. 31 years.
Married. Children 4

Occupation:-

Housewife.

Complaint:-

The patient complains of scaly eruptions on the palms of both hands, and fissures on the soles of the feet.

Duration:-

2 years.

History of Present Condition:-

The health of the patient was satisfactory until four years ago when yaws eruptions appeared on the soles of the feet and discolouration of the palms of the hands. The patient could not walk well and was unable to perform her duty satisfactorily. She was treated and the lesions cleared off with the exception of some spots on the soles of the feet. Two years later pain and tenderness recurred after the rainy season in contrast to the comfort experienced in the dry season. Last year the condition was very bad during the rainy season.

Past History:-

The patient had measles at the age of 4 years. She had yaws at the age of 12 years and the yaws lesions disappeared without being treated. At the beginning of the World War II she was taken to a village for safety and there she had an attack of smallpox which was successfully treated without leaving any mark on the body.

Case 22(contd)

Family History:-

The patient is married and has four children who are alive and healthy. The father and mother, are alive and live in their home town. There is no obvious tendency in the family to any particular disease.

General Condition:-

The patient is a woman of a good physique. There is no tenderness over the frontal bone, mastoids and antra. There is no oedema, jaundice or icteric tint of the conjunctivae. The teeth and mouth cavity are normal.

Temperature 98.6 F. Pulse 72. Respiration 18.

Examination:-

The patient is mentally cleared and answers questions well. There is no abnormality on the head, neck and face. There are serpentine and solitary yaws lesions on both palms of the hands. The soles of the feet are covered by dry yaws and fissure presenting an appearance not unlike a very busy railway junction. In the lower portion of the right leg are scaly desquamations. The skin over the tibia is fixed.

Heart

Circulatory System

Pulmonary System

Gastro-Intestinal System

Urinary System

Nothing abnormal is detected.

Diagnosis:-

Tertiary Yaws.

Result:-

CASE 22

DATE OF ADMISSION

27th JANUARY, 1943

DISEASE

TERTIARY JAWS

NAME
BESEM ETALÉ

of BACHUNGS-DTAL

AGE
31 years

DIET

No. in Case Book

NOTES

Softening of jaws
Bachhungs blood
Sealy diagnosis -
from partially
cleared.
The figures of
the scales remain
but there is no
pain.

Day of Disease	Date	Time	Fahr.	Temp. Centigrade	Pulse	Respiration	Bowels	Urine
1	27/1/43			37°	18	72	1	
2	28			37°	18	72	2	
3	29			37°	18	72	1	N.A.B. 3 gram
4	30			37°	16	68	1	
5	31			37°	18	70	1	
6	1/43			37°	20	82		N.A.B. 6 gram
7	2			37°	18	72		
8	3			37°	18	72	2	
9	4			37°	18	72	3	
10	5			37°	18	72	1	N.A.B. 6 gram
11	6			37°	20	82	1	
12	7			37°	16	70	1	
13	8			37°	18	72	1	
14	9			37°	18	72	1	N.A.B. 6 gram
15	10			37°	18	72	1	
16	11			37°	18	72	1	
17	12			37°	18	72	2	N.A.B. 6 gram
18	13			37°	14	70	1	
19	14			37°	18	72	1	
20	15			37°	18	72	1	
21	16			37°	18	72		

Result
RELIEVED

CASE 22

DATE OF ADMISSION

27th JANUARY, 1943

DISEASE

TERTIARY YAWS

RESSEM ETIA (F)

of BACHUNG-NYAI

Age 31 years

Diet

No. in Case Book

NOTES

Solitary Yaws
Lymphatic nodes
Scaly plaques
now partially
cleared.
The fragments of the
soles of the feet
removed, but
there is no pain

Result
RELIEVED

Day of Disease	Date	Fahr. 107°	106°	105°	104°	103°	102°	101°	100°	99°	98°	97°	Pulse	Respiration	Bowels	Urine
22	1/26/43												70	18	2	
23	1/27/43												72	18	1	
24	1/28/43												72	18	1	
25	1/29/43												72	18	1	
26	1/30/43												78	20	1	
27	1/31/43												68	16	1	
28	2/1/43												72	18	2	
29	2/2/43												80	20	1	
30	2/3/43												80	20	1	
31	2/4/43												72	18	1	
32	2/5/43												72	18	1	

N.A.A. 6 grains

N.A.A. 6 grains

N.A.A. 9 grains

DISCHARGED



Temperature Centigrade 42° 41° 40° 39° 38° 37° 36° 35°

CASE 23

TABE TAYIN of EBANG,
MAMFE, CAMEROONS.

7th May, 1943
Male. 49 years

Occupation:-

Farmer

Complaint:-

The patient complains of pain in the joints and general weakness.

Duration:-

6 years.

History of Present Condition:-

The patient was at work and in a satisfactory health until six years ago when he experienced pain in the joints, particularly on the knuckles and wrists, and weakness set in in a few days. Later he noticed the colour in some parts of his body changing. The condition after a few weeks was relieved recurring at intervals, particularly during the cold season.

Past History:

The patient enjoyed a fairly good health until the age of 12 years when he had attack of yaws. About a year prior to the yaws lesions appearing on different parts of the body, there was a yaw behind the neck close to the hairs.

Sepul ointment was used externally. At the age of 30 years he suffered from chest trouble. He had suffered from malarial fever.

Family History:

The patient is unmarried. The father and mother are alive and in a good condition of health. There is no obvious

Case 23(contd)

tendency in the family to any particular disease.

General Condition:-

The patient has a great interest in his health and gives information willingly. There is no oedema, jaundice or icteric tint of the conjunctivae.

Temperature 98.6°F. Pulse 72. Respiration 18.

Examination:

The hairs and scalp are in a good condition and the glands of the are not enlarged. The axillary glands are slightly enlarged, while the inguinal and femoral glands are markedly so. There are scars and scaly eruptions on the buttocks, back and thighs. The finger-joints are slightly swollen and there is tenderness on pressure. There are extensive white spots on both hands which also have hard spots. There are dark pigmentations on the upper extremities and the trunk.

Heart) } } } } } } } } } } }	Nothing abnormal is detected.
Circulatory System		
Pulmonary System		
Gastro-Intestinal System		
Nervous System		
Urinary System		

Diagnosis:-

Tertiary Yaws.

Result:-

Relieved.

Hard spots have cleared off, but there is no change in the appearance of the hands.

CASE 23

DATE OF ADMISSION

7th May, 1943

DISEASE

TERTIARY YAWS

Name
TARE TAYIN (M)

of EPARAK

Age 49 years

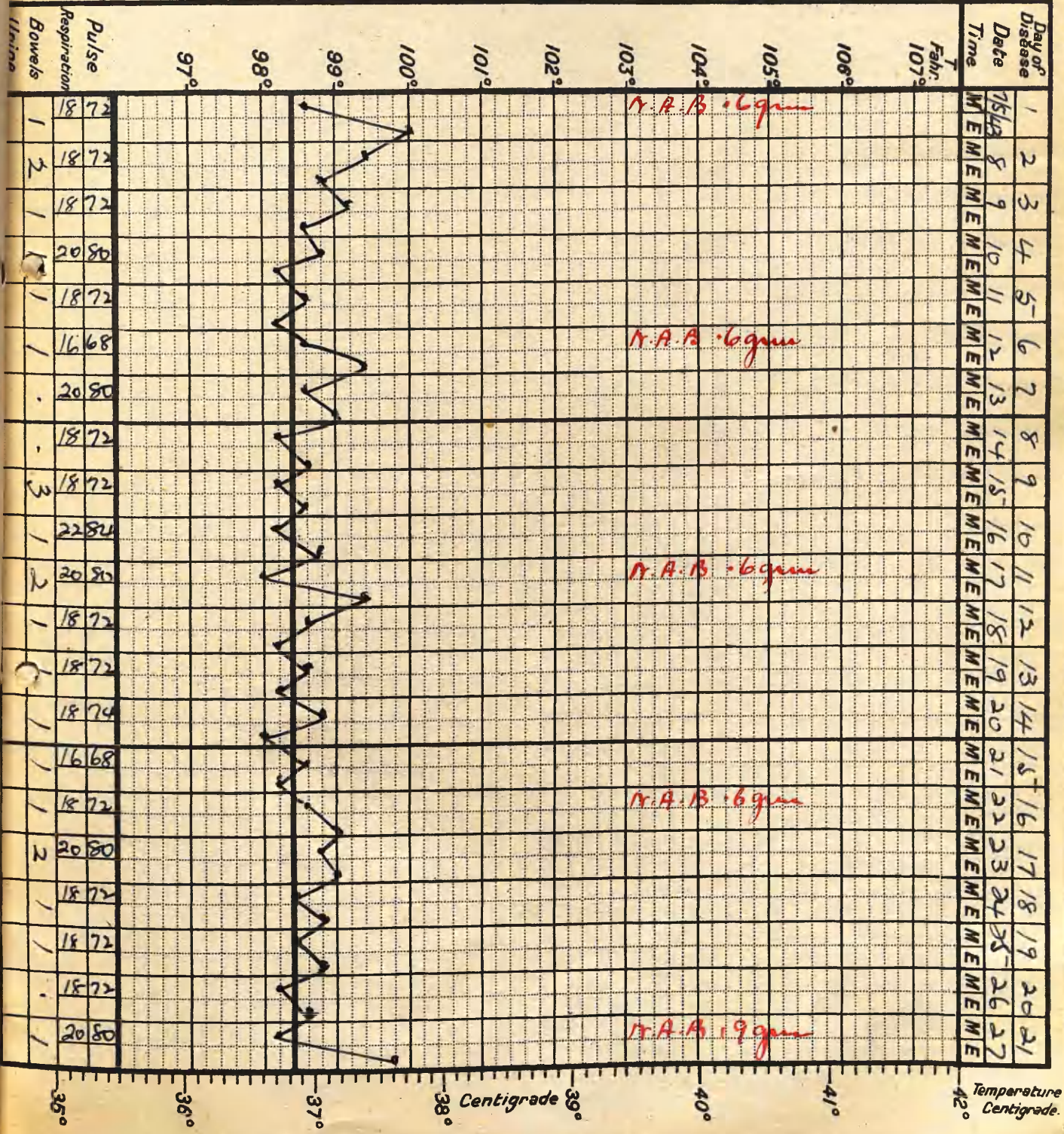
Diet

to in Case Book

NOTES

Hand spots cleared, but there is no change in the appearance of the legs

Result
RELIEVED



CASE 23

DATE OF ADMISSION

7th May, 1943

DISEASE

TERTIARY ARS

Name of Patient (M)
TAE TAYIN (M)
of FRANCS

Age 49 years

Diet

No. in Case Book

NOTES

Hand spots cleared, but there is no change in the appearance of the legs.

Result RELIEVED

Day of Disease	Date	Fahr.	Pulse	Respiration	Bowels	Urine
22	22/5	107	72	18	2	
23	23/5		72	18	1	
24	24/5		72	18	1	
25	25/5		72	18	1	
26	26/5		72	18	1	
27	27/5		80	20	1	
28	28/5		80	22	1	
29	29/5		72	18	1	
30	30/5		72	18	1	
31	31/5		72	18	1	
32	32/5		68	16	1	
33	33/5		70	16	1	
34	34/5		72	18	1	
35	35/5		72	18	1	
36	36/5		72	18	1	
37	37/5		74	18	1	
38	38/5		72	18	1	
39	39/5		72	18	1	



A.A.B. - 9 gm

A.A.B. - 9 gm

A.A.B. - 9 gm

DISCHARGED

CASE 24

OJONG AGBO of BANYANG,
MAMFE, CAMEROONS.

2nd May, 1939
Male. 12 years

Occupation:-

Complaint:-

The patient complains of dark patches on the palm of the hand.

Duration:-

5 months

History of Present Condition:-

Prior to the age of 8 years patient enjoyed a fairly good health with a normal condition of the skin. Six months ago he observed that the palm of his right hand was changing colour. He did not attach any importance to the change as there was no pain or any inconvenience. A month after areas of dark patches appeared on the palm of the left hand.

Past History:

The patient suffered from dysentery(unspecific) at the age of 2 years. He had yaws when he was 4 years of age and was treated by the medicine man. The lesions cleared entirely but for two residual marks on the trunk. There was no lesion on the hands.

Family History:-

The mother is dead but the father is alive. The patient's two younger brothers had yaws at the age of 6 years and 3 years respectively. There is no history of venereal disease in the family.

Case 24 (contd)

General Condition:-

The patient is poor in health and anaemic. The muscles are flabby. There are seborrhæic eruptions on the scalp. The superficial glands of the neck are not palpable, but the spleen is slightly enlarged. There is no jaundice, icteric tint of the conjunctivæ or oedema of the legs.

Temperature 99.8°F. Pulse 80. Respiration 22.

Examination:-

The hairs are very dirty and the scalp is unsightly. There are patches of dark desquamation on the following sites of palm of the left hand:-

- i The thenar and hypo-thenar eminences.
- ii Two at the bases of the third and fourth phalanges.
- iii Two between the thenar eminence and the index finger.
- iv One fairly large patch in the centre of the palm of the hand.

The abdomen is moderately enlarged.

Heart

Circulatory System

Pulmonary System

Gastro-Intestinal System

Nervous System

Urinary System

There is nothing abnormal detected.

Diagnosis:-

Tertiary Yaws.

Result:-

Cured.

CASE 24

DATE OF ADMISSION
2nd May, 1939

DISEASE
TERTIARY YAWS

Name
Dionis Acabo (M)
of PANAMA

Age
12 years

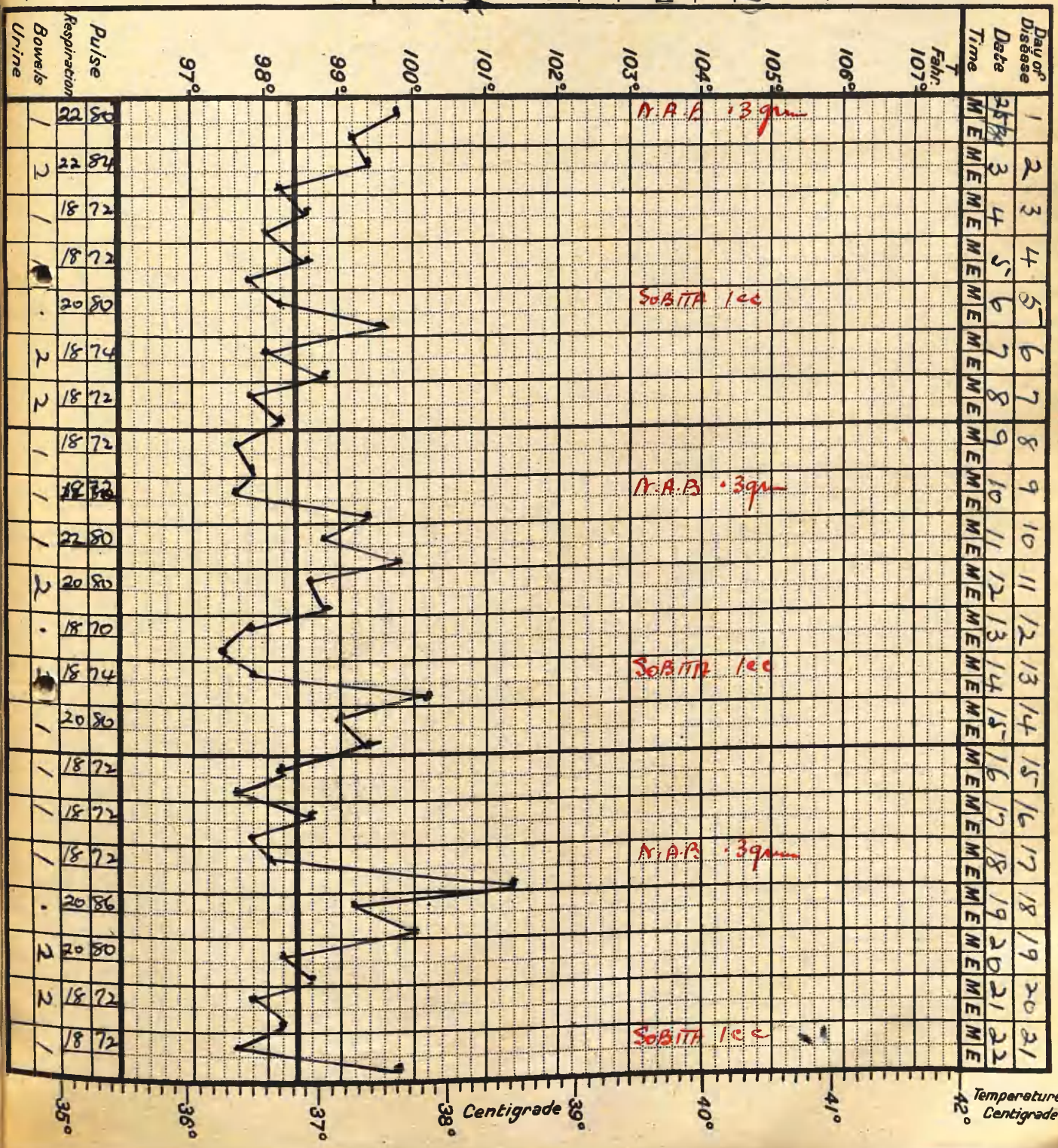
Diet

No. in Case Book

NOTES

Palms of dark
degenerating
of the palm of
the hand dark
broadly
broadly.

Result
CURED



CASE 24

DATE OF ADMISSION

2nd May, 1939

DISEASE

TERTIARY YAWS

Name
Gomez Agaso (M)

of Bar Yaws

Age 12 years

Diet

No. in Case Book

NOTES

Patches of dark
dequamation
of the palm of
the hand dis-
appeared com-
pletely.

Day of Disease	Date	Time	Fahr.	107°	106°	105°	104°	103°	102°	101°	100°	99°	98°	97°	Pulse	Respiration	Bowels	Urine
22	25/5/39														70		1	
23															72		1	
24															72		1	
25															72		1	
26															72		1	
27															80		2	
28															72		2	
29															80		1	
30															72		1	
31															72		1	
32															72		1	
33															72		1	

N.A.B. 39mm

SUB ITA ICE

DISCHARGED



Result
CURED

Temperature Centigrade.

35°

36°

37°

38°

39°

40°

41°

42°

Centigrade

CASE 25

KABA AYA of BANYANG,
MAMFE, CAMEROONS.

9th October, 1944
Male. 39 years

Occupation:-

Farmer

Complaint:-

The patient complains of depigmentation of the skin.

Duration:-

2 years.

History of Present Condition:-

After an attack of yaws at the age of 15 years the patient enjoyed a good health until two years ago when he noticed that his body was changing colour, and in a few months the palm of his hands had large patches, and white areas appeared on different parts of the body. The condition caused no pain, irritation or inconvenience.

Past History:-

The patient had whooping cough when he was young, and suffered from bacillary dysentery five years ago. On his 14th year there was a yaw eruption on the scrotum, but the condition only lasted for a few days and cleared off without any treatment. He had yaws on the trunk, thighs and legs when he was 15 years old and was treated at home. After the treatment the skin appeared normal. There is no history of venereal disease.

Family History:-

The patient is married and has three healthy children. The wife is alive and well. The patient's father and mother are alive and enjoy a good health.

Case 25(contd)

General Condition:

The patient is lean and there are eruptions on the body. The bony eminences are unduly prominent but there is no glandular enlargement. The anterior aspects of the tibiae show chronic inflammation of the periosteum and bones. There is no jaundice, icteric tint of the conjunctivae or oedema of the legs.

Temperature 98°F. Pulse 78. Respiration 20.

Examination:-

The hairs are in a fairly good condition and the scalp is free of any affection. There are scabies and papular eruptions on the chin of the lower jaw and sides of the face. Crawcraw covers several parts of the body, particularly the extensors of the big joints, extending upwards and downwards. Depigmented spots are scattered irregularly on the body. The palms of the hands have areas of large black patches intermingled with white patches. The anterior aspects of the legs present the appearance like that of an albinos.

Heart:-

The apex beat which is visible and lies in the 6th intercostal space is outside the mammary line. The heart is moderately enlarged. There are systolic and diastolic murmurs in the mitral area. The aortic and pulmonic areas have no adventitious sound.

Gastro-Intestinal System:-

The teeth are in a bad condition, and the odour from the mouth

Case 25(contd)

is offensive. The pharynx is congested but the tonsils are not enlarged. The liver is enlarged and about two finger breadths below the right costal margin. There is no tenderness in both hypochondriac and epigastric regions. Succussion is elicited, but there is no visible peristalsis. The spleen is enlarged downwards and forwards towards the umbilicus. The kidneys are not palpable.

The urine is acid in reaction, specific gravity 1028, and has no abnormal constituents.

- Circulatory System)
- Pulmonary System
- Nervous System

No abnormality is detected.

Diagnosis:-

Tertiary Yaws

Result:-

Improved.

CASE 25

DATE OF ADMISSION
9th OCTOBER, 1944

DISEASE

TERTIARY ARS

Name

KARO AYA (M)
of BANGALUR

Age

29 years

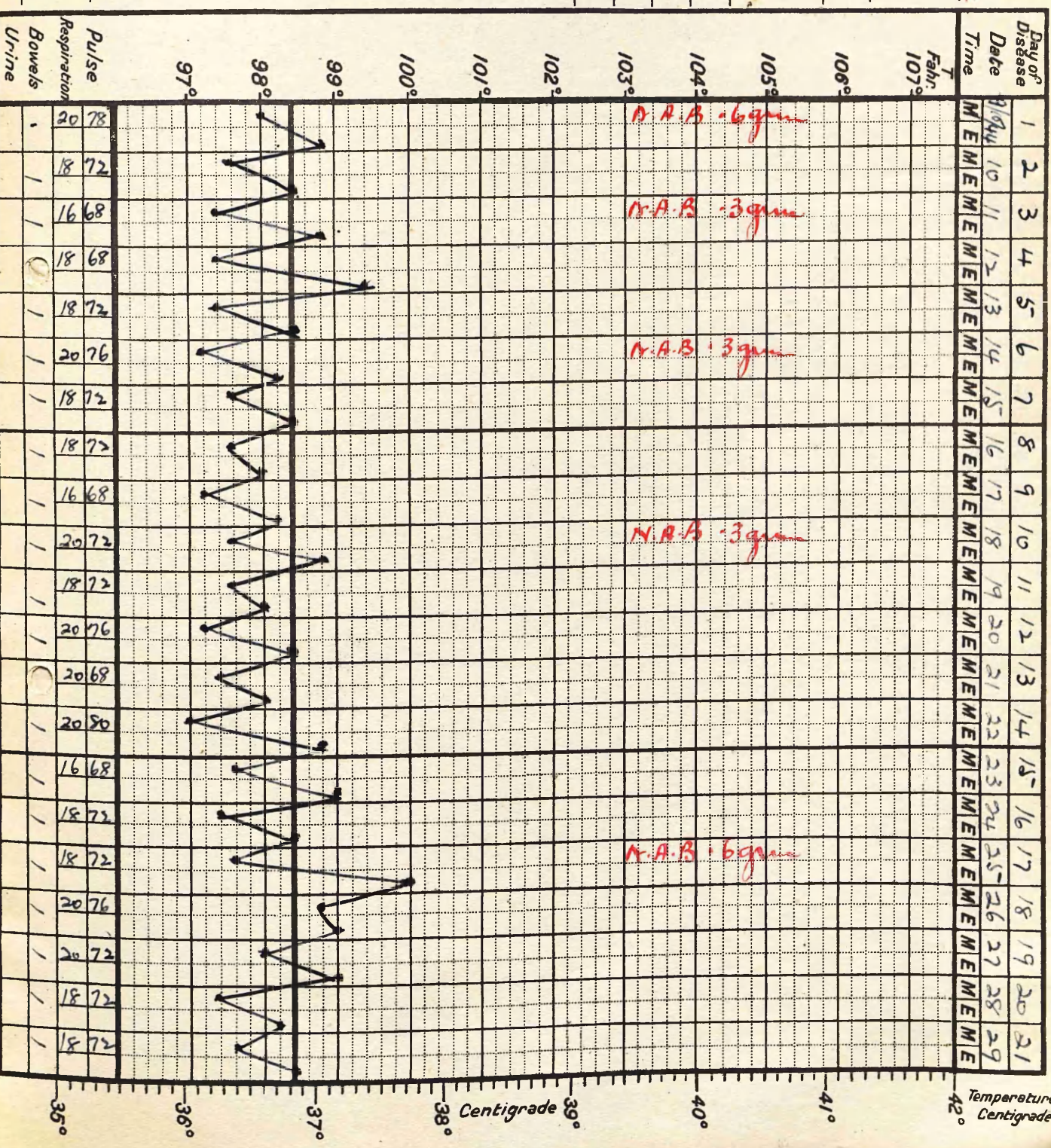
Diet

No. in Case Book

NOTES

Result

Improved



CASE 25

DATE OF ADMISSION
9th OCTOBER 1944

DISEASE
TERTIARY SYPHILIS

Name
KARSHAYA (M)
of BANYANS

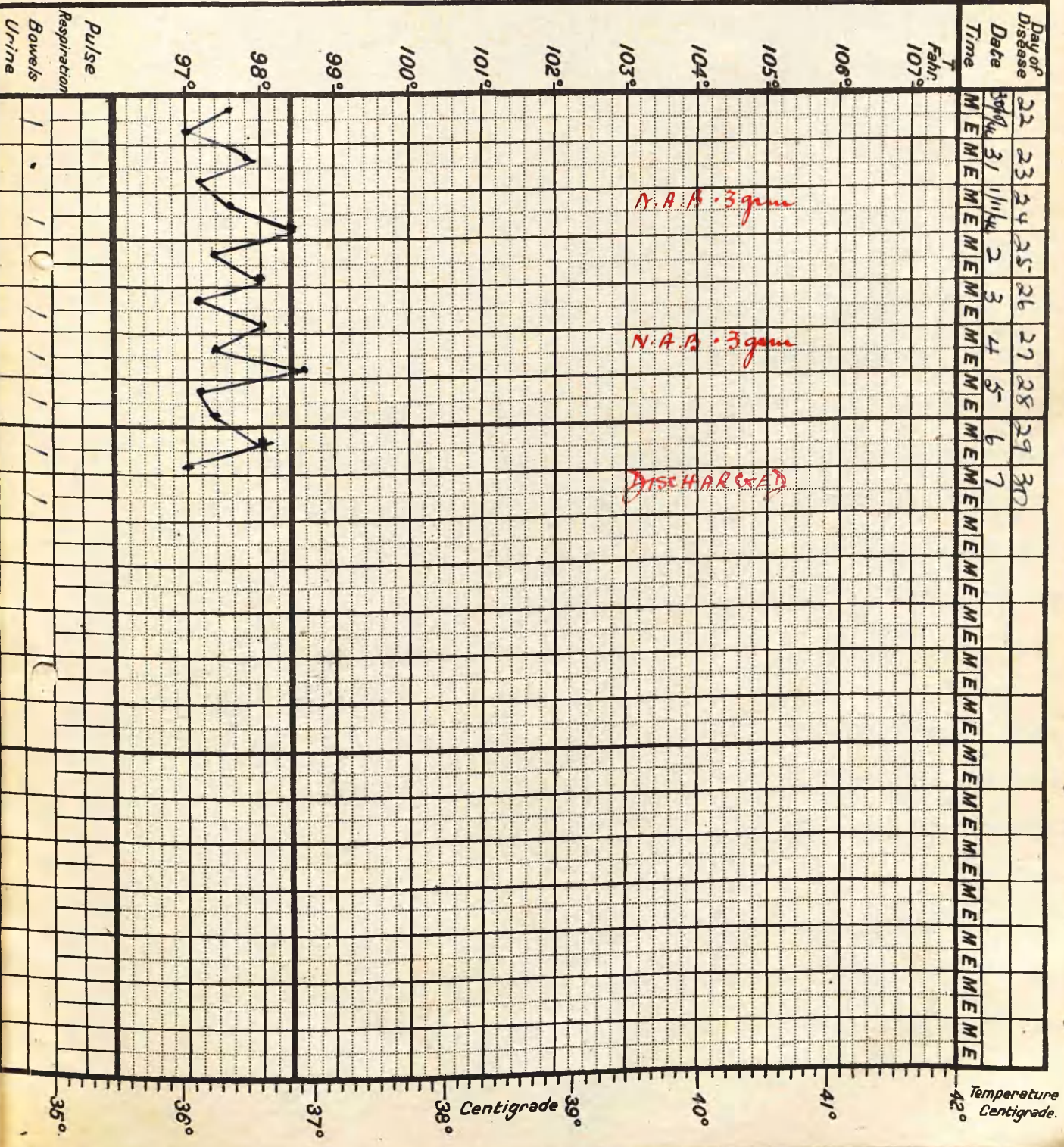
Age
39 years

Diet

No. in Case Book

NOTES

Result
IMPROVED



CASE 26

AGBOR EBAI of NCHANG,
MAMFE, CAMEROONS.

11th May, 1939
Female. 36 years.
Married. Children 4.

Occupation:-

Housewife

Complaint:-

The complains of pain in the soles of the feet.

Duration:-

10 years.

History of Present Condition:-

The patient enjoyed a good health since her marriage until ten years ago when she felt pain in the soles of the feet while she was travelling across the hills and mountains to the French Mandated Territory of the Cameroons. The pain lasted for two weeks. During the rainy season of the following year the pain recurred with more severity and lasted a month. A seasonal occurrence was the feature of the pain for six years following. For the last two years the condition had been greatly aggravated.

Past History.

The patient had measles at the age of 3 years. When she accompanied her parents to the French Mandated Territory of the Cameroons at the age of 14 years she contracted smallpox which was cured without leaving any marks behind. At the age of 18 years she was attacked by yaws which appeared all over the body, more marked on the trunk and upper extremities. After nine months the yaws eruptions disappeared under the treatment of a medicine man.

Case 26(contd)

Family History:-

The patient is married and has four children who are in a healthy state of mind and body. The father died of chest trouble a few years ago. The mother died three years ago. The family has no tendency to any particular disease.

General Condition:-

The patient has a good and sound memory and her general condition of health is good. She is fairly robust and clean in her habits. There is no jaundice, icteric tint of the conjunctivae or oedema.

Temperature 98.6^oF. Pulse 72. Respiration 18.

Examination:-

The hairs and scalp of the patient are in a healthy condition and the state of nutrition of the body is good. There are no skin lesions on the neck, trunk and extremities, but there are five old scars on the buttocks. The legs appear normal but palpation reveals thickened periosteum. The anterior portion of the sole of the left foot is covered by yaws spots and patches which make it look like a rat eaten sole. The posterior portion (the heel) has yaws patches only. The right foot has no lesion.

Heart:-

There is no visible pulsation in the cardiac area. The apex beat is not obviously visible but can be easily felt in the 5th intercostal space within the mammary line. There is a systolic murmur which is partly conducted to the axilla, in the mitral area.

Case 26(contd)

Circulatory System

Pulmonary System

Gastro-Intestinal System

Nervous System

} Nothing abnormal is detected.

Diagnosis:-

Plantar Yaws

Result:-

Improved

The patient reported in June, 1944, (rainy season) and said she was "still good on the sole".

CASE 26

DATE OF ADMISSION

11th May, 1939

DISEASE

PLANTAR YAWS

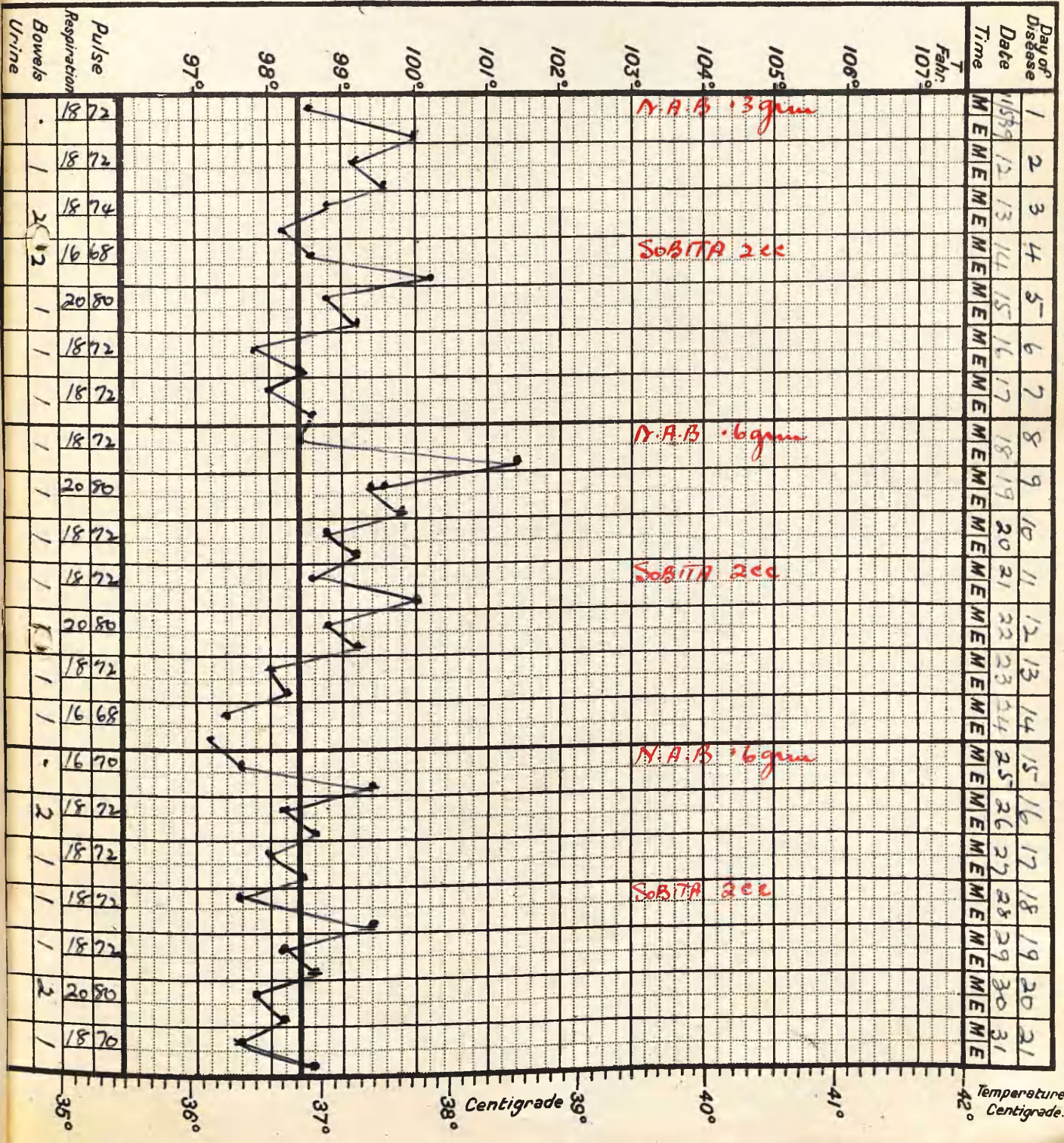
Name
AGBOR EBAN (F)
of NCHANKA

Age
36 years

Diet

NOTES

Report reported
in June, 1944,
during the rainy
season and said
that she was "still
good on the sole
of the foot."



Result
IMPROVED

Temperature Centigrade

CASE 26

DATE OF ADMISSION
11th May, 1939

DISEASE
PANTAR PANS

Name
ASROR ISAI (F)
of NEHRUR

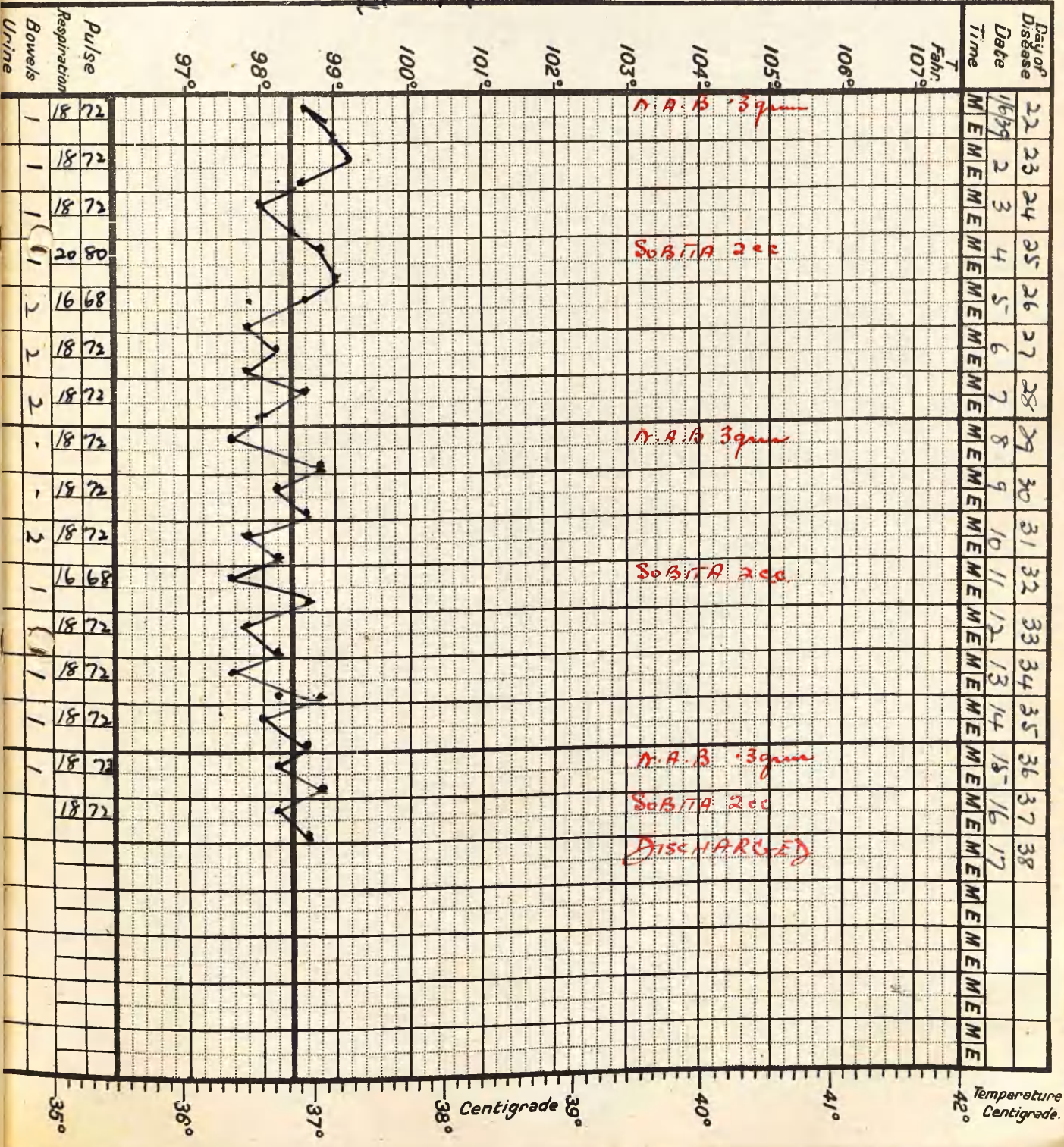
Age
36 years

Diet

No. in Case Book

NOTES

Patient reported in June, 1934, during the rainy season, and said that she was still good on the sole of the foot.



Result
IMPROVED

Temperature Centigrade

CASE 27

TAMBE OROK of BANYANG,
MAMFE, CAMEROONS.

17th January, 1945.
Female. 17 years.

Occupation:- -

Complaint:-

The patient complains of patches of eruptions on the right foot.

Duration:-

3 years.

History of Present Condition:-

The patient was assisting her mother in the farm during the planting season when she experienced pain on the sole of the right foot. She did not attach much importance to the condition but was simply applying ointment at intervals. The pain, however, was not aggravated until two years ago when she noticed that the sole of the foot began to peel off and walking on stony grounds was unbearable. She was advised by the parents to go to the hospital.

Past History:-

The patient suffered from cough at the age of 3 years. At the age of 7 years she had pain and tenderness in the small joints of both hands and pain in the front of the legs. A year after yaws eruptions appeared on several parts of the body. She had varicella at the age of 12 years.

Family History:-

The father is alive and has a yaws ulcer which heals and recurs, on the Tendon Achilles. The father states that he had yaws at the age of 12 years. The mother and other children of

Case 27(contd)

the family are well. There is no history of venereal disease in the family.

General Condition:-

The patient is of a height more than the average and of a good physique. She is tidy and clean in habits, and the state of nutrition is good. There is no oedema, jaundice or icteric tint of the conjunctivae.

Temperature 98.6 F. Pulse 80. Respiration 20.

Examination:-

The hairs are clean and well plaited. There are no lesions on the scalp, neck, and upper extremities. There are a few dark spots on the trunk, which are more numerous on the upper portions of both thighs. The periosteae of the legs are thickened with a few nodules scattered over them. The sole of the right foot is very unpleasant to sight owing to the yaws lesions which have peeled off a greater portion. The sole of the left foot has no lesions.

Heart

Circulatory System

Pulmonary System

Gastro-Intestinal System

Nervous System

Urinary System

Nothing abnormal is found.

Diagnosis:-

Plantar Yaws.

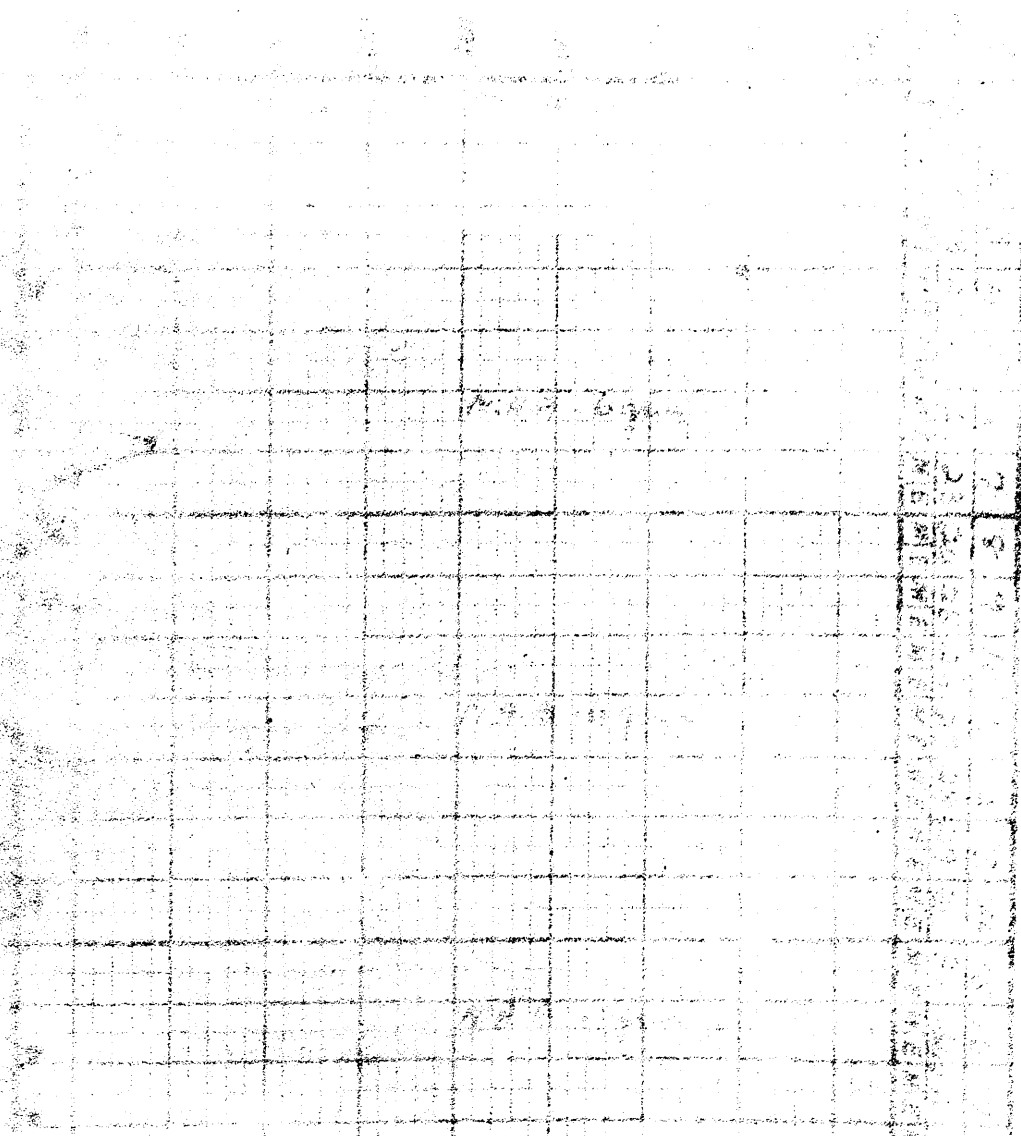
Result:

Case 27(contd)

Result:

Cured.

Yaws lesions of the sole of the foot disappeared entirely.



CASE 27

DATE OF ADMISSION
17th JANUARY, 1945

DISEASE
PLANTAR YAWS

Name
TAMBE DROK (F)
of BAR YANS

Age
17 years

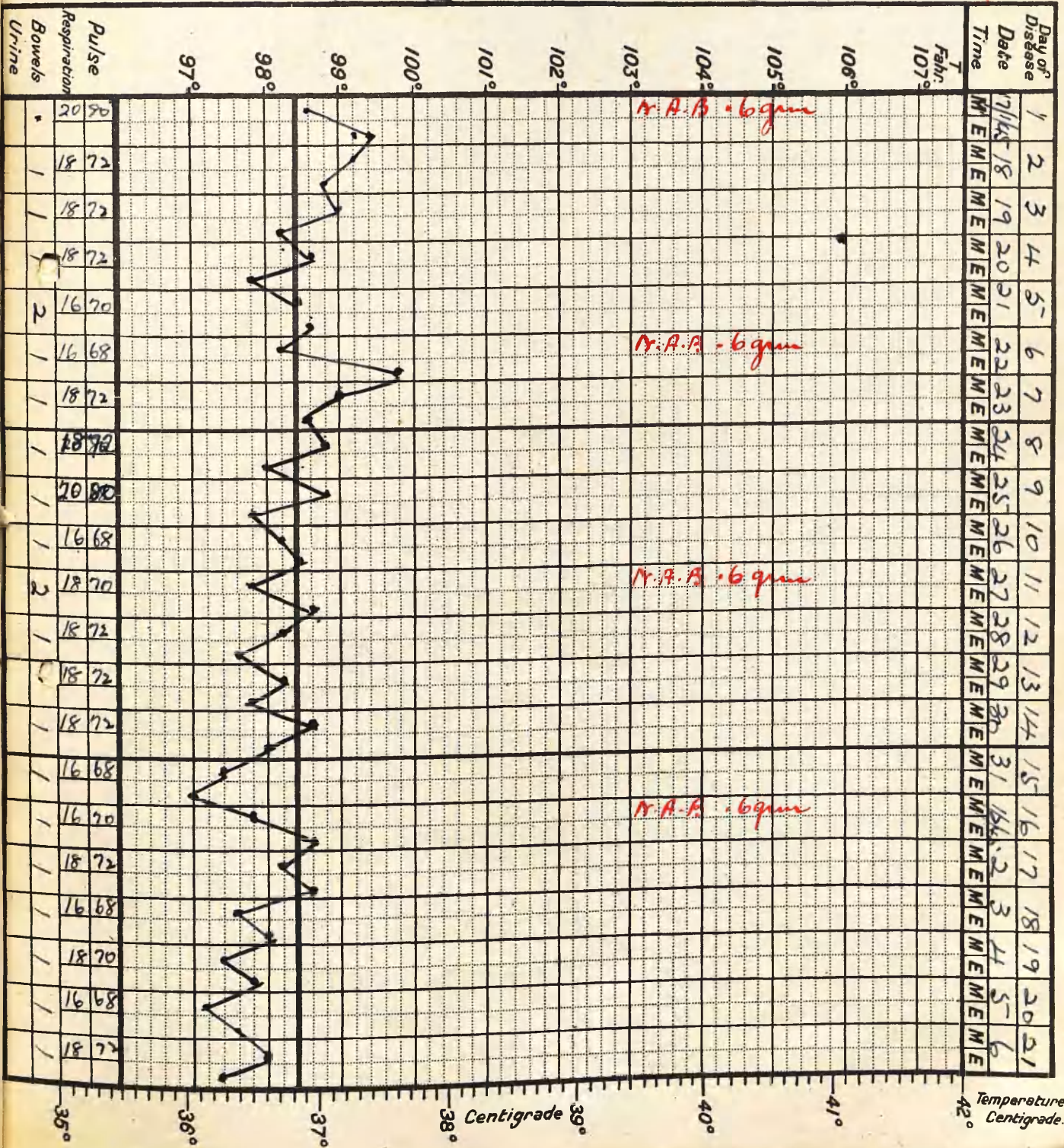
Diet

No. in Case Book

NOTES

Your leaven of the sole of the foot disappeared entirely.
Pain is gone - foot after the young seaman in December

Result
CURED



CASE 27

DATE OF ADMISSION

17th JANUARY 1945

DISEASE

PLANTAR YAWS

Name

TAMAR BROOK (F)
of BANYANS

Age

17 years

Diet

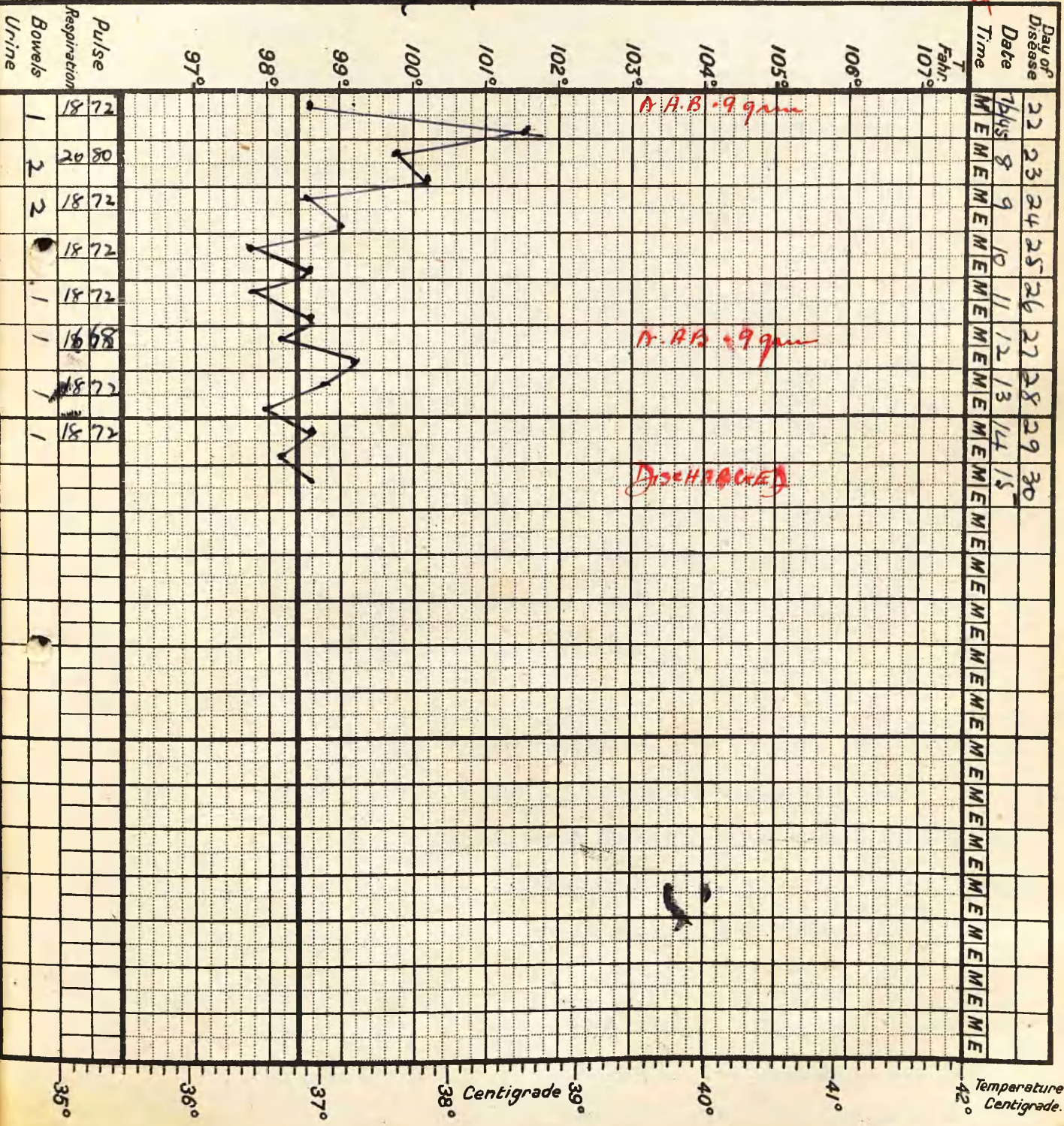
No. in Case Book

NOTES

Your attention
the sole of the
first disappears
entirely.
Patient is to
report after the
rainy season
in December.

Result

CURED



Temperature Centigrade.

Centigrade

CASE 28

MANG OJI,
MAMFE, CAMEROONS.

11th January, 1945
Male. 10 years

Occupation:-

House-boy

Complaint:-

The patient complains of pain on the soles of the feet on walking, especially on rocky or rough roads.

Duration:-

2 months.

History of Present Condition:-

About six months ago the patient was not so willing in going on messages, saying that there was pain on the soles of the feet, particularly the right foot, when he moved on rough and stony places. There was no importance attached to the statement as there was no real abnormality but dark spots found on the soles of the feet. Two months ago multiple sores appeared on the soles of the feet, and there was pain and tenderness on walking.

Past History:

The patient suffered from a severe fever twice when he was a child. He had yaws eruptions during childhood. At the age of 8 years he suffered from multiple sores on the soles of the feet. The condition healed under treatment leaving some few large dark spots on the sole of the right foot.

Family History:

The parents are alive and well. There are two brothers and one sister who are quite well and healthy. There is no obvious tendency to any particular disease, and no history

Case 28(contd)

of venereal disease in the family.

General Condition:

The scalp and neck of the patient have seborrhoea and scabies. The patient is lean with undue prominence of the superficial bony eminences, but the appearance of the inner aspects of the eyelids is normal. There is no oedema of the legs, jaundice, or icteric tint of the conjunctivae. Temperature 97.8 F. Pulse 72. Respiration 18.

Examination:-

There is no obvious abnormality besides the leanness which is well marked, and the skin which adheres to the front of the tibiae. There is an erosion on the anterior portion of the sole of the right foot. The erosion is raised above the level of the sole of the foot, and the edges are uneven. There are many dark small areas with irregular outlines on the soles of both feet.

Heart	}	Nothing abnormal is detected.
Circulatory System		
Pulmonary System		
Gastro-Intestinal System		
Nervous System		
Urinary System	}	

Diagnosis:-

Foot Yaws.

Result:

Improved

The patient was discharged by the request of his mother.

The lesions on the soles of the feet completely ~~healed~~

Case 28(contd)

disappeared. There is a fear of a relapse because the course of treatment was not completed.

CASE 28

DATE OF ADMISSION
11th JANUARY, 1945

DISEASE
FURT YAWS

Name
MARGOT, (M)
of 1804

Age
10 years

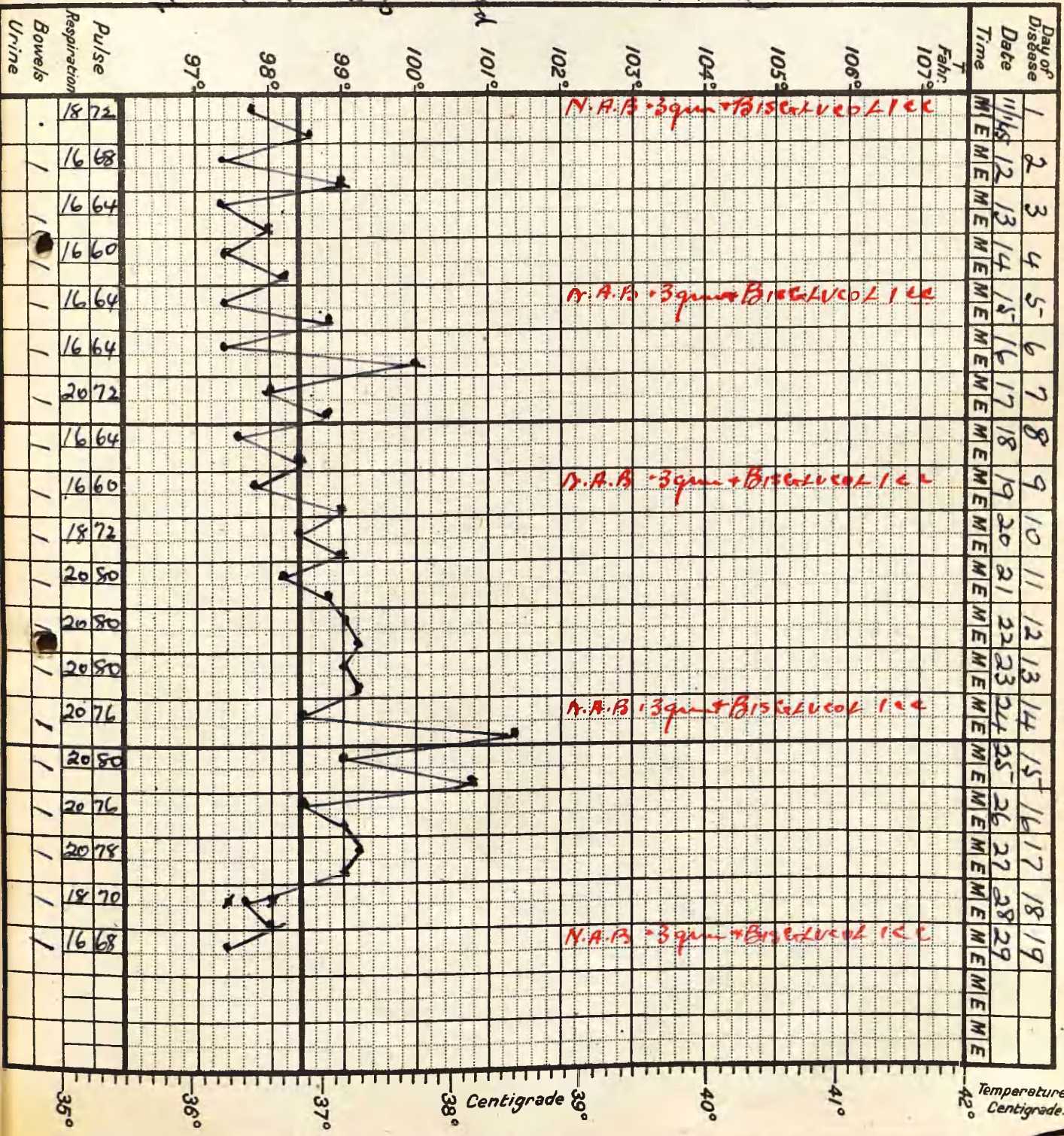
No. in Case Book

NOTES

Patient discharged
by request of his
mother.
The Yaws lesions
on the sole of the
foot completely
disappeared.
There is a fear
of a relapse
because the
course was not
completed

Result

RELIEVED



CASE 29

5th December, 1938.

NJUNGU MATUNI
of BANGWA,
MAMFE, CAMEROONS.

Male. 13 years

Occupation:-

Complaint:-

The patient complains of pain in the soles of the feet when walking.

Duration:-

15 months

History of Present Condition:-

Prior to the age of 11 years the patient enjoyed a good health until eighteen months ago when he noticed some painful spots on the soles of both feet. Three months later he could not walk well on paths where there were gravels. One year ago when he examined the soles of the feet on account of pain, he found some areas of the soles irregularly eaten away. He reported at home.

Past History:-

The patient suffered from malaria and measles when he was a child. He had suffered from passing of watery stools mixed with blood and mucus (unspecified dysentery) at the age of 5 years. He was told that he had yaws at the age of 2 years.

Family History:-

The father and mother are alive and well. The father and mother had yaws at the age of 7 years and 10 years respectively. The home village of the patient is notorious for yaws. In the compound where the patient's parents reside there are many cases of yaws.

Case 29(contd)

General Condition:-

The condition of the hairs and scalp is good and satisfactory. The eyes are prominent but there are no abnormal arteries or veins seen. The thyroid gland is not enlarged and there is no distension of the veins of the neck. There is no oedema, jaundice or icteric tint of the conjunctivae.

Temperature 99°F. Pulse 78. Respiration 20.

Examination:-

The patient is sickly and unhealthy with crawcraw on the elbows and knee-joints. The abdomen is scaphoid but no abdominal organ is palpable. The Tendon Achilles is painful when firm pressure is applied. The soles of feet have yaws spots and yaws destroyed areas. The spots are painful on pressure. The distribution of the yaws spots are irregular, but the yaws destroyed areas are confined to the middle of the soles of the feet.

Heart:-

The apex beat is visible and lies in the 4th intercostal space within the mammary line. There is a blowing systolic murmur in the mitral area, and it is not conducted outwards or inwards. There is no other adventitious sound.

Pulmonary System:-

There is no bulging, flattening or indrawing in any part of the chest wall. There is no thrill or undue vocal fremitus on palpation. On percussion there are impairments of sound in the front upper right(second intercostal space) and the

Case 29(comtd)

lower portion at the back of the chest wall. On auscultation adventitious sounds are heard in the upper portion(front) of the chest wall and the base posteriorly.

Circulatory System)
Gastro-Intestinal System)
Nervous System)
Urinary System)

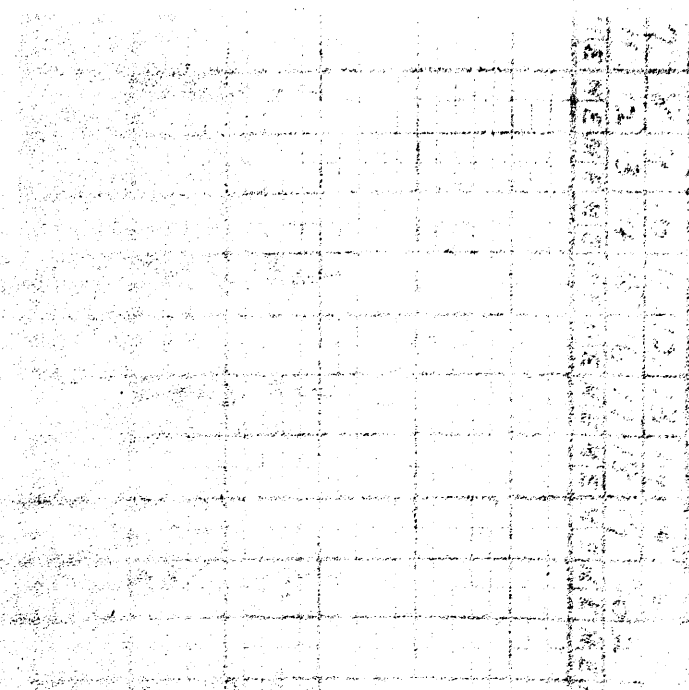
Nothing abnormal is found.

Diagnosis:-

Foot Yaws.

Result:-

Relieved.



CASE 29

DATE OF ADMISSION
 5th DECEMBER, 1938

DISEASE
 FOOT/ANVS

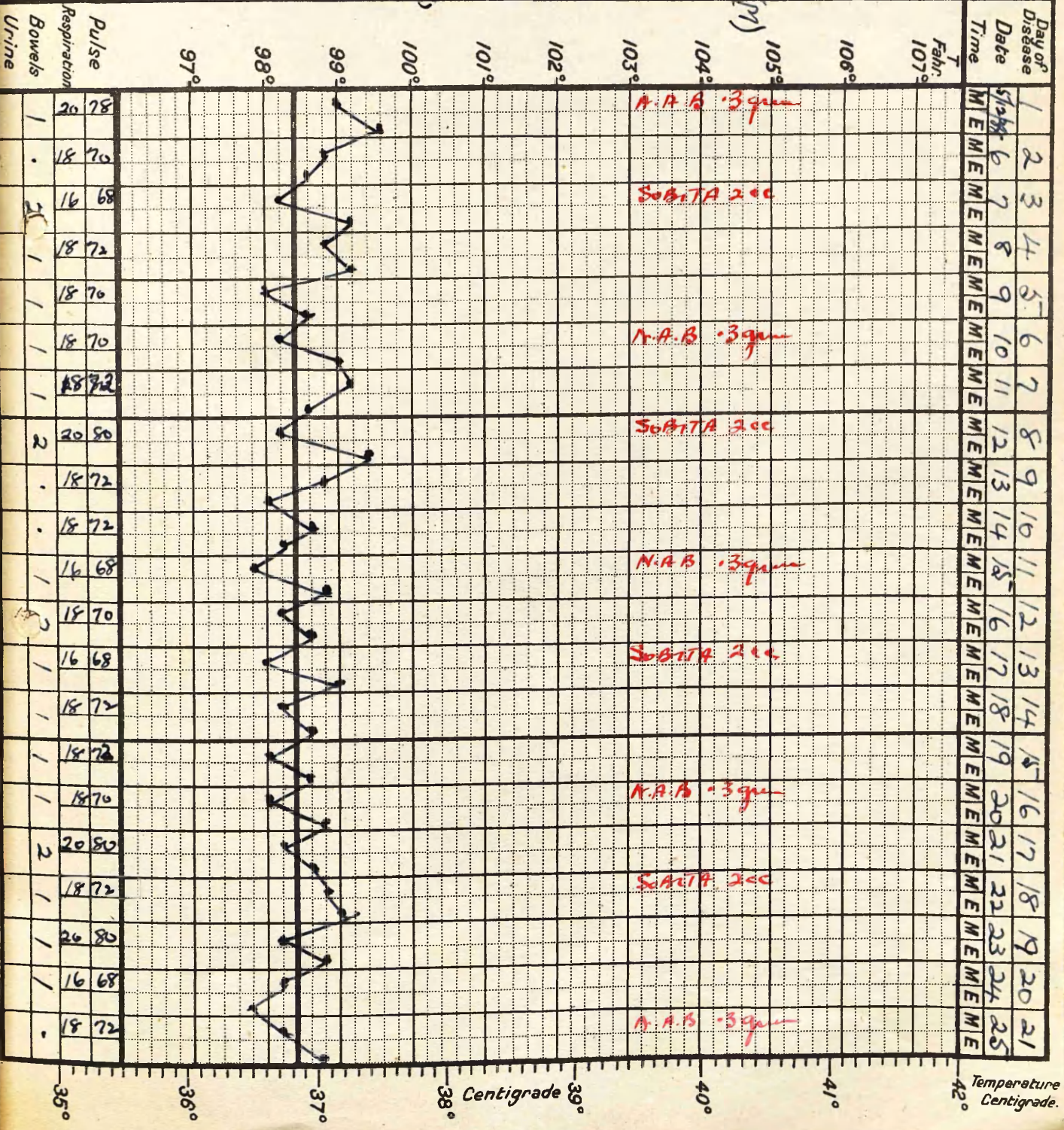
Name
 NUNICAL MATUN
 of BARANWA

Age
 13 years

No. in Case Book

NOTES
 Patient was seen in October, 1944, andy there was no relapse. The condition was still satisfactory.

Result
 RELIEVED



CASE 29

DATE OF ADMISSION

5th DECEMBER, 1939

DISEASE

FOOT YANS

Name

NINGGU MATUN (M)
of BAROKHA

Age

13 years

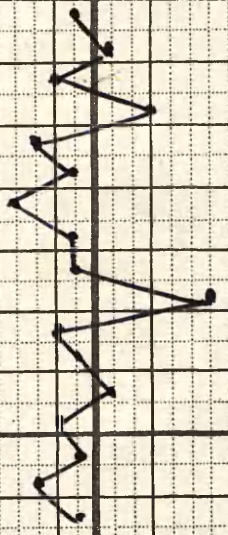
Diet

No. in Case Book

NOTES

Robert was seen in October, 1944, and there was no relapse. The condition was still a - hofa boy.

Day of Disease	Date	Fahr.	Pulse	Respiration	Bowels	Urine	Temperature Centigrade
22	21/12/39		18 72		2		36°
23	27		20 50		1		37°
24	28		16 68		1		38°
25	29		18 70		1		39°
26	30		18 72		•		40°
27	31		16 68		2		41°
28	1/1/40		18 74		1		42°
29	2		18 72		1		
30	3		18 72		•		



Sobita 2cc

M.A.B. 39m

Sobita 2cc

Discharged

Result
RELIEVED

CASE 30

NPAGA of ELUMBA,
MAMFE, CAMEROONS.

27th December, 1939
Male. 59 years.

Occupation:-

Farmer

Complaint:-

The patient complains of sore on the chest wall.

Duration:-

1½ years.

History of Present Condition:-

The patient had been in an indifferent health for some years past. Two years ago he noticed some sore on the right chest wall at a spot where there was an old scar. The sore healed but broke down again in course of six months and spread to the side and front of the chest wall. A native doctor treated him for some period, but it resisted treatment.

Past History:

The patient had chicken pox at the age of 8 years. He suffered from breathlessness with high fever (probably pneumonia) for two weeks at the age of 15 years. His health had not been good for the past seven years. There is no history of ulcer or sore on the penis or lips.

Family History:-

The patient is married and has five children who are alive and well. His wife is not enjoying a good health presently owing to pain in the stomach. There is no obvious tendency to any disease in the family.

Case 30(contd)

General Condition:-

The patient is emaciated. The skin is wrinkled and bony eminences are unduly prominent. The patient suffers from headache and pain in the joints. There is oedema of the hands, ankles and lower portions of the legs; but there is no jaundice or icteric tint of the conjunctivae.

Temperature 97.6°F. Pulse 68. Respiration 16.

Examination:-

The skin of the patient is not in a healthy state.

There are ulcerative ulcers on the anterior fold extending outwards and inwards into the armpit, in the lower part of ^{the} armpit and the right chest wall in the upper mammary area.

The wrists are oedematous, and the ankles and legs pit on pressure. There are pain and tenderness on moving the knee-elbow-and shoulder-joints. The patient has urethral discharge and pain on passing urine.

Heart

Circulatory System

Pulmonary System

Gastro-Intestinal System

Nervous System

Urinary System

Nothing abnormal is detected.

Diagnosis:-

Ulcerative Yaws.

Result:-

Unsatisfactory.

Ulcers are healed leaving Brown unhealthy scars on the spots.

Case 32(contd)

Irregular scars remained on the sites of the ulcerations.



Fig.30 - Ulcerative Yaws Lesions
(Active Stage)
of the upper end of the back of
the leg.
Note Albinos spots. (Case 32)

CASE 30

DATE OF ADMISSION

27th DECEMBER, 1939

DISEASE

ULCERATIVE COLITIS

Name

NEASIA (M)
of ELMBA

Age

59 years

Diet

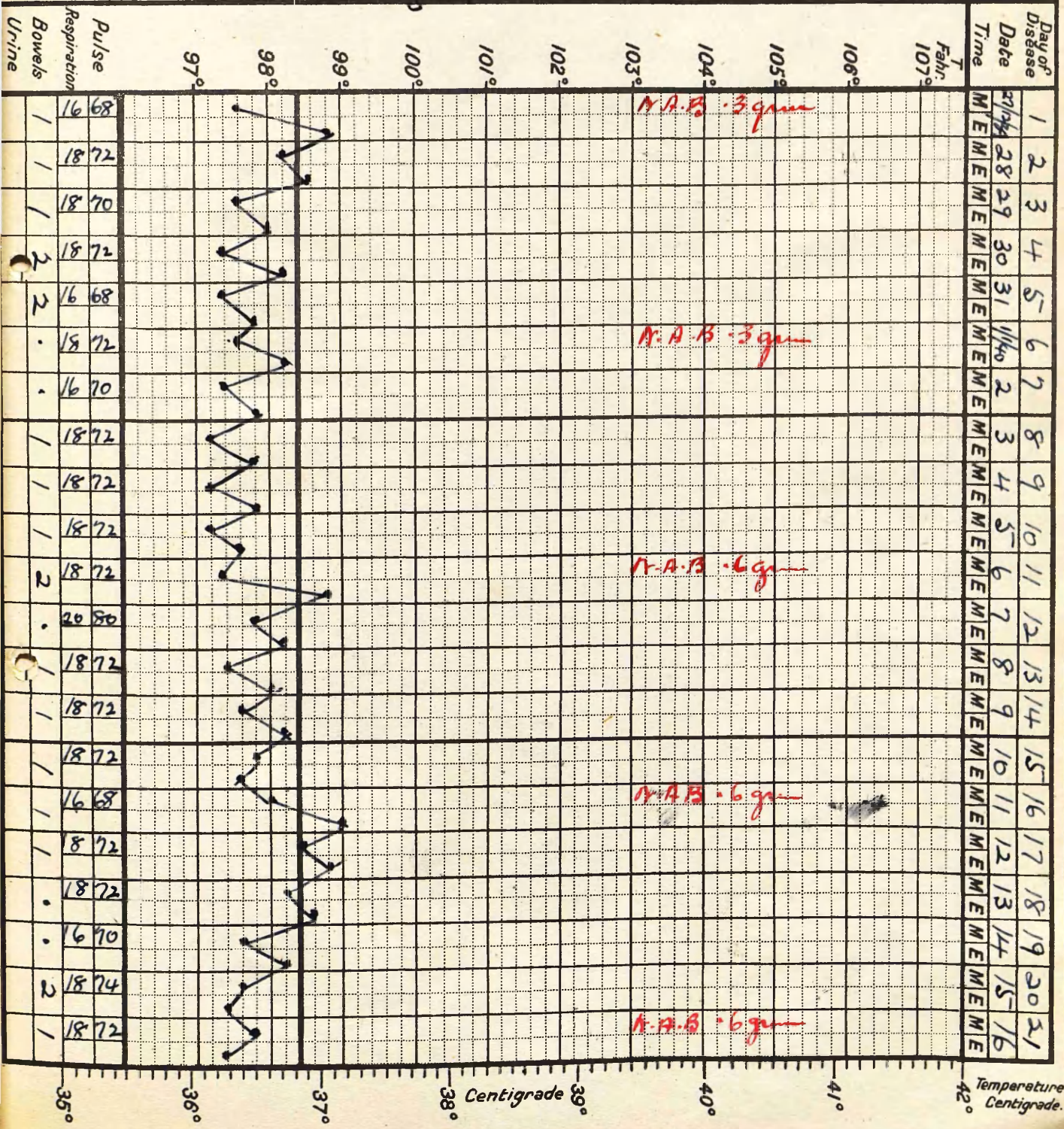
No. in Case Book

NOTES

Wound healed
leaving brown
inflammatory scar
on the scars

Result

UNSATISFACTORY



CASE 30

DATE OF ADMISSION

27th DECEMBER, 1939

DISEASE

ULCERATIVE YAWS

Name

NEARGA (M)
of EUMBARA

Age

59 years

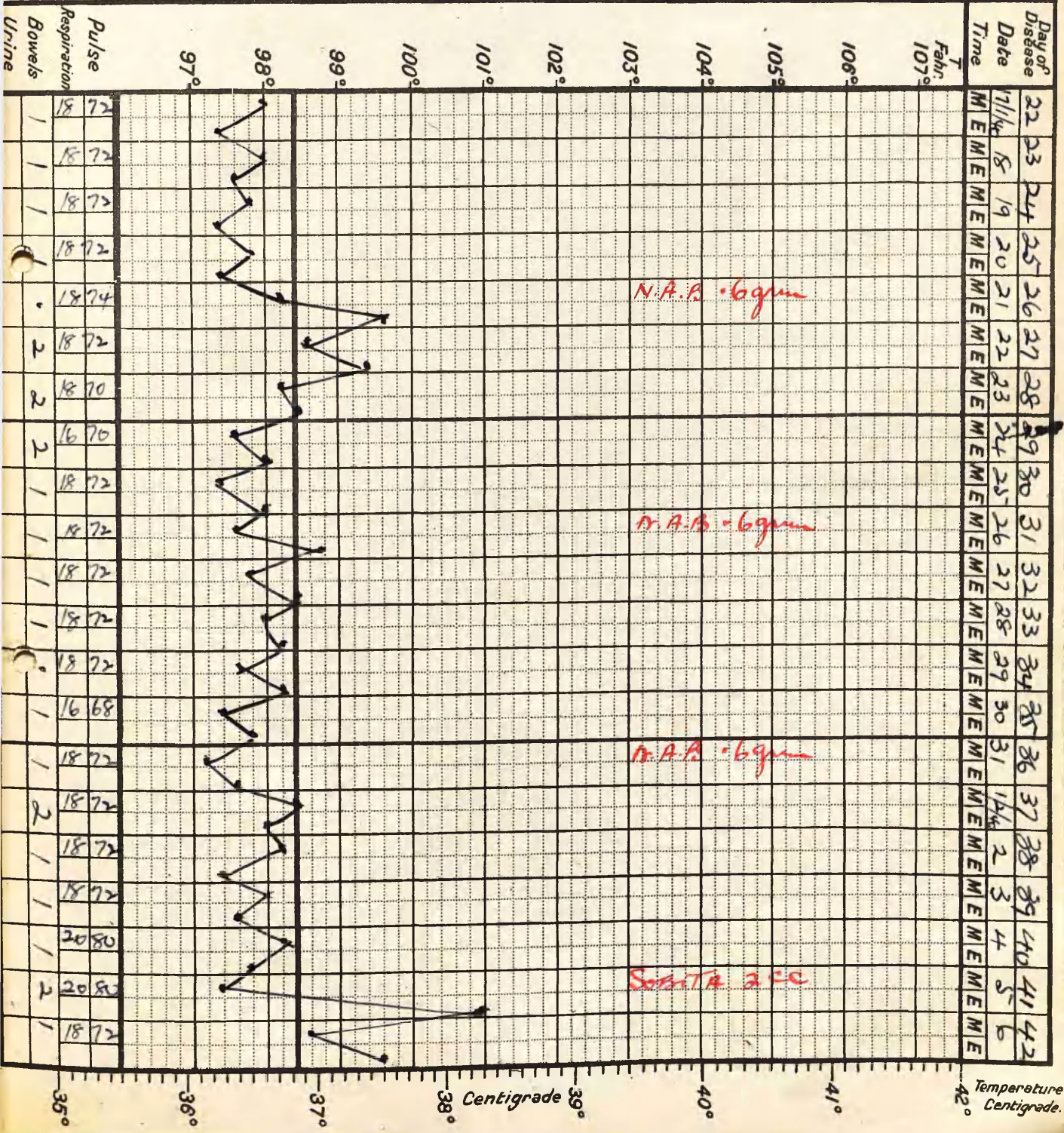
Diet

No. in Case Book

NOTES

Wound healed
leaving lesion
unhealthily scars
on the area

Result
UNSATISFACTORY



CASE 30

DATE OF ADMISSION

29th DECEMBER 1939

DISEASE

ULCERATIVE COLITIS

Name

NEARAA (M)
of ELUMBA

Age

59 years

Diet

No. in Case Book

NOTES

Wears headgear
leaving brown
unhealthy scars
on the forehead

Result

UKSATISFACTORY

Day of Disease	Date	Time	Fahr.	Fahr. 107°
43	7/24			
44	8			
45	9			
46	10			
47	11			
48	12			
49	13			
50	14			
51	15			
52	16			
53	17			
54	18			
55	19			
56	20			
57	21			
58	22			
59	23			
60	24			
61	25			

Pulse	Respiration	Bowels	Urine
72	18	1	
72	18	1	
72	18	1	
72	18	2	
72	18	2	
72	18	1	
72	18	1	
72	18	2	
72	18	2	
72	18	1	
68	16		
70	18	1	
72	18	2	
72	18	2	
72	18	1	
72	18	1	
70	16	1	
70	16	1	
72	18		

Temperature Centigrade
37.2
37.8
38.2
38.5
38.8
39.0
39.2
39.5
39.8
40.0
40.2
40.5
40.8
41.0
41.2
41.5
41.8
42.0

SOBITA 2cc

SOBITA 2cc

SOBITA 2cc

DISCHARGED

CASE 31

MBU TAH of TALI,
MAMFE, CAMEROONS.

11th January, 1944
Male. 11 years.

Occupation:-

Farm hand

Complaint:-

The patient complains of sore on the wrist.

Duration:-

One Year.

History of Present Condition:-

The health of the patient had been fairly good for the past four years. Two years ago he had a small sore on the wrist. The sore healed, broke down and healed again in a few months. One year ago the sore recurred and spread rapidly resisting all kinds of treatment given by the medicine man.

Past History:-

The patient had suffered from malaria and bacillary dysentery. He suffered from rheumatic fever when he was 5 years of age. He contracted yaws when he was 7 years. The yaws lesions were more marked on the forearms, wrists and hands. The wrist eruptions coalesced and formed large sores which healed and formed unhealthy scars that gave way now and again forming sore or sores.

Family History:-

The patient's parents are dead. There are two elder brothers who work on the farm. The family has no obvious tendency to any particular disease.

Case(comtd)

General Condition:-

The patient is very anaemic and sickly. The appetite is poor and he is often constipated. The scalp has eruptions and the body is nothing but crawcraw. There is oedema of both legs. The spleen, inguinal and femoral glands are enlarged.

Temperature 97.8 F. Pulse 80. Respiration 20.

Examination:-

The whole body of the patient is in a bad condition. The glands of the neck are palpable. The teeth are bad and the breath from the mouth is offensive. There is an extensive ulceration of a very irregular outline on the inner aspect of the right wrist. The ulceration is dirty and foul. There are scars and dark marks on several parts of the body.

Heart:

There is no pulsation seen in the cardiac area, but the apex beat is visible in the 5th intercostal space within the mammary line. There is no thrill or friction on palpation. In the mitral area there is a double murmur. The systolic murmur ~~murmur~~ in the area is partially conducted to the axilla. The second pulmonic sound is accentuated.

Circulatory System)	There is nothing abnormal found.
Pulmonary Ssystem)	
Gastro-Intestinal System)	
Nervous System)	
Urinary System)	

Case 31(contd)

Diagnosis:-

Ulcerative Yaws.

Result:-

The condition of healing progressed satisfactorily, but the patient absconded before a complete cure.

CASE 31

DATE OF ADMISSION

11th JANUARY, 1944

DISEASE

ULCERATIVE COLITIS

Name

Mrs TAH (M)
of TALI

Age

11 years

Diet

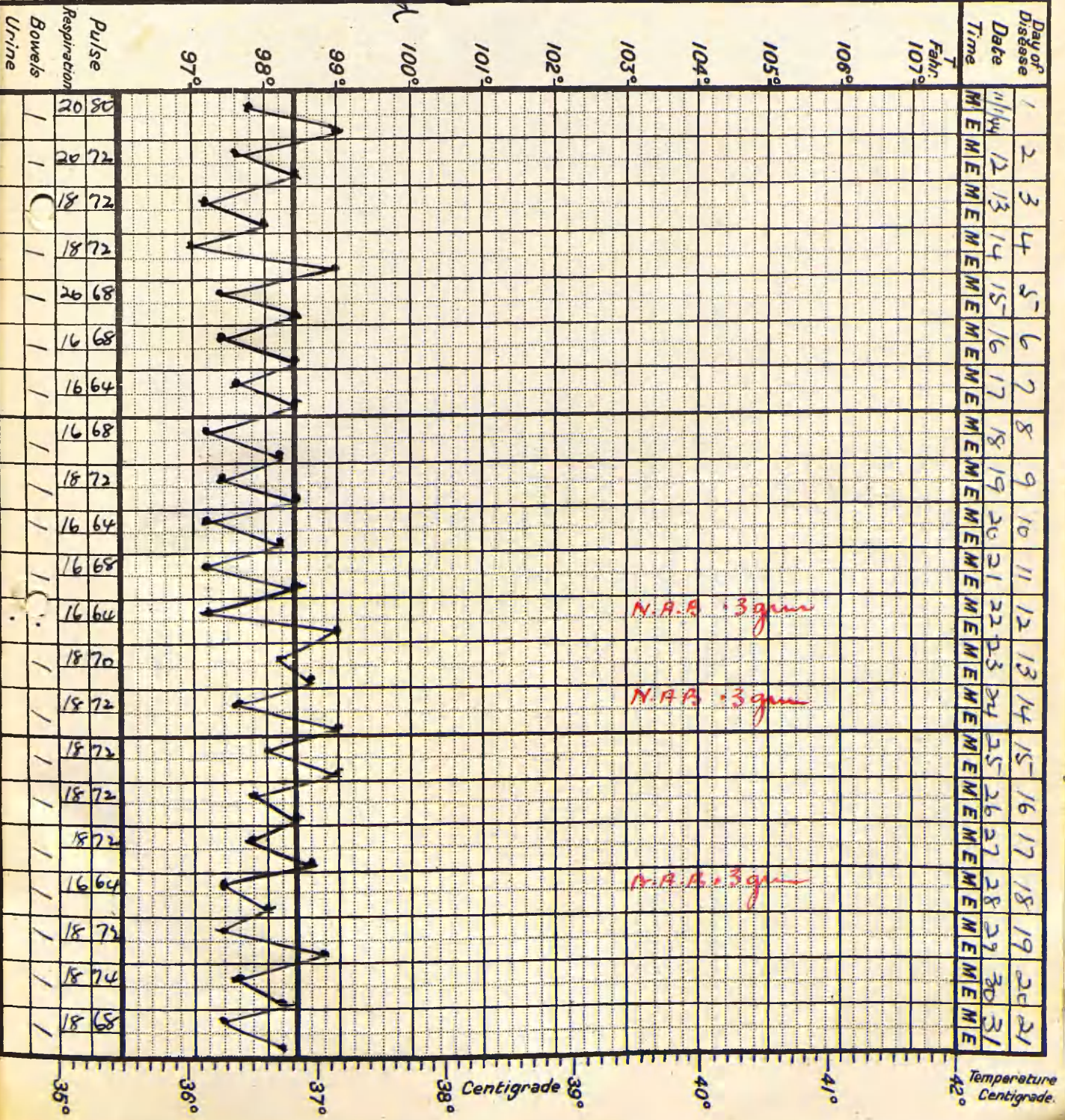
No. in Case Book

NOTES

Condition greatly improved.
Patient absconded

Result

IMPROVED



CASE 31

DATE OF ADMISSION
11th JANUARY 1944

DISEASE

ULCERATIVE COLITIS

Name

M B U T A H (M)
of T A L I

Age

11 years

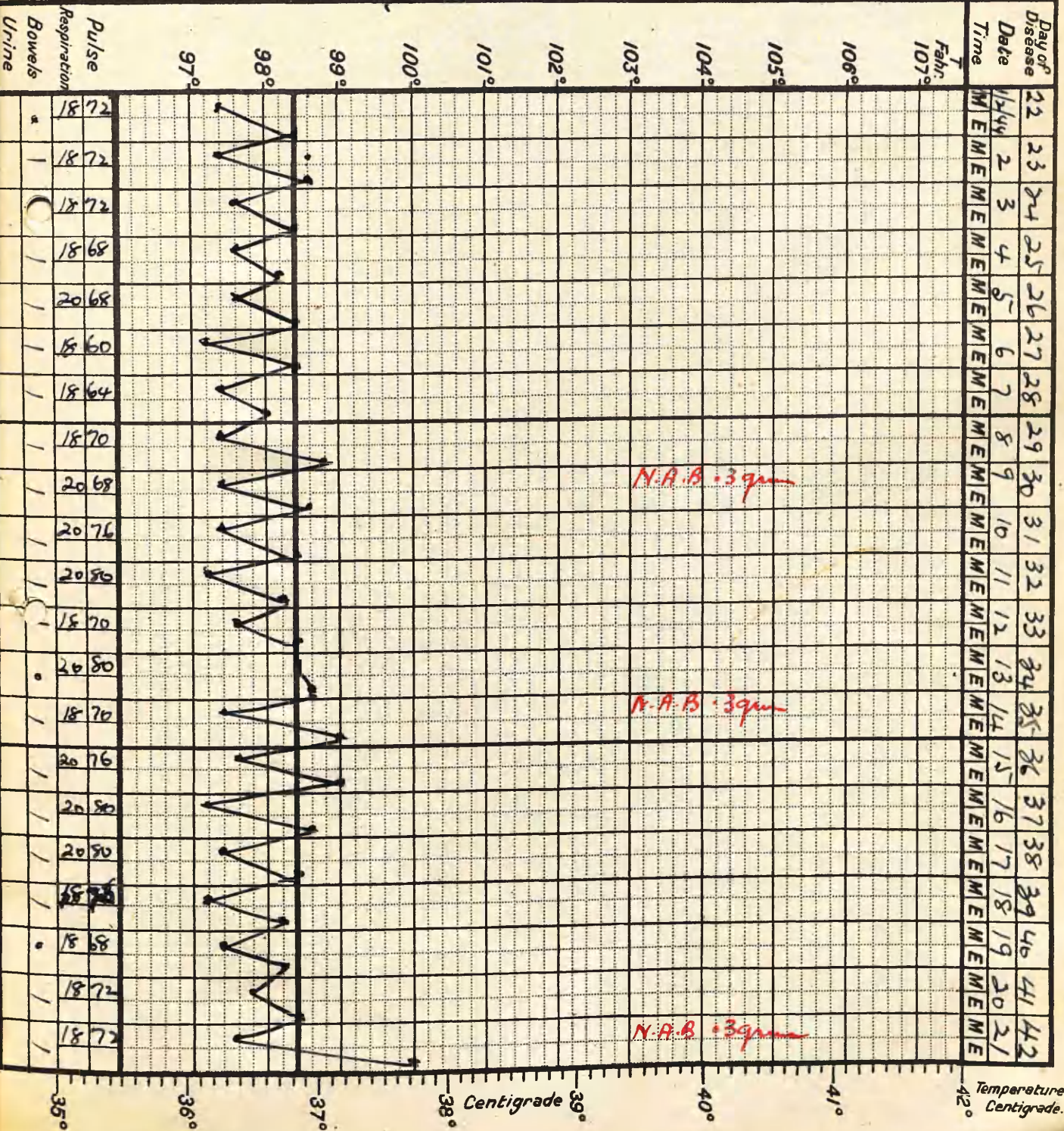
Diet

No. in Case Book

NOTES

Condition greatly improved.
Patient discharged.

Result
IMPROVED



Temperature Centigrade.

Centigrade

CASE 31

DATE OF ADMISSION

11th JANUARY, 1944

DISEASE

ULCERATIVE COLITIS

Name

MAU TAH (M)
of TALI

Age

11 years

Diet

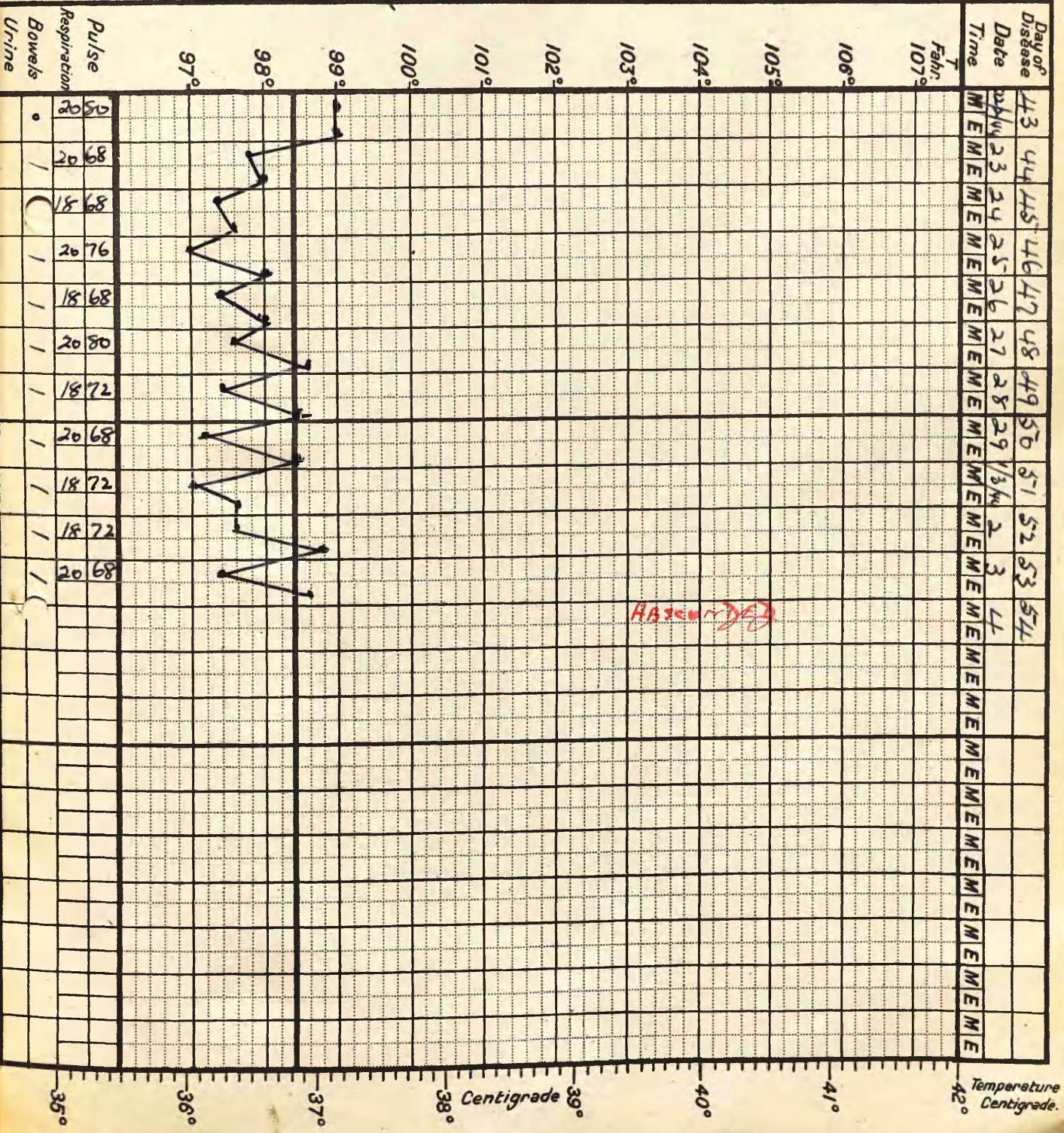
No. in Case Book

NOTES

Condition greatly improved.
Patient absconded.

Result

IMPROVED



RECORDED

Temperature Centigrade.

CASE 32

AJE MBIA of TAKAMANDA,
MAMFE, CAMEROONS.

3rd April, 1944
Female. 38 years.

Occupation:-

Market Woman.

Complaint:-

The patient complain of sores on the leg and arm.

Duration:-

6 months.

History of Present Condition:

The patient has a tendency of developing ulcer on the legs in case of any slight injury or wound. She treats wounds, scratches and injuries by applying fresh leaves heated slowly over an open fire. One year ago she noticed a sore on the upper portion of the leg and it was treated at home, but recurred more than twice. Six months ago the sore recurred and spread rapidly resisting all treatments. The same phenomenon occurred on the arm.

Past History:-

The patient suffered from variola, pertussis and enlarged spleen before the age of 10 years. She suffered from a severe pain in the stomach twelve years ago and was operated on. Bysentery occurred at the age of 30 years. There was a history of yaws during adolescent, but no history of venereal disease.

Family History:-

The patient is unmarried. The mother is alive and well, but the father is dead. There is an obvious tendency to yaws

Case 32 (contd)

affection in the family as there are many affected with yaws in both the paternal and maternal compounds. The patient's two elder brothers and a younger sister had suffered from yaws.

General Condition:-

The patient is well nourished and of a good physique. The hairs, scalp and neck are in a good condition. There are whitish areas on both legs. There is no oedema of the legs, no jaundice or icteric tint of the conjunctivae.

Temperature 98.4 F. Pulse 78. Respiration 20.

Examination:-

At first sight the whole body seems normal, but on systematic examination old and fresh skin affections are seen. There is a spreading ulceration on the back of the upper portion of the left leg with ulcerations around. There are albinos spots on different parts of the leg, and healing scars intermingled. On the right leg spreading ulcerations and scars are scattered irregularly. The arm presents a picture of primitive etching.

Heart) } Nothing abnormal is detected.
Circulatory System	
Pulmonary System	
Gastro-Intestinal System	
Nervous System	
Urinary System)

Diagnosis:-

Ulcerative Yaws.

Result:-

Cured.

Case 32(contd)

Irregular scars remained on the sites of the ulcerations.

CASE 32

DATE OF ADMISSION
3rd APRIL, 1944

DISEASE
ULCERATIVE COLITIS

Name
AJE MAIRA (F)

of TAKAMARU

Age
38 years

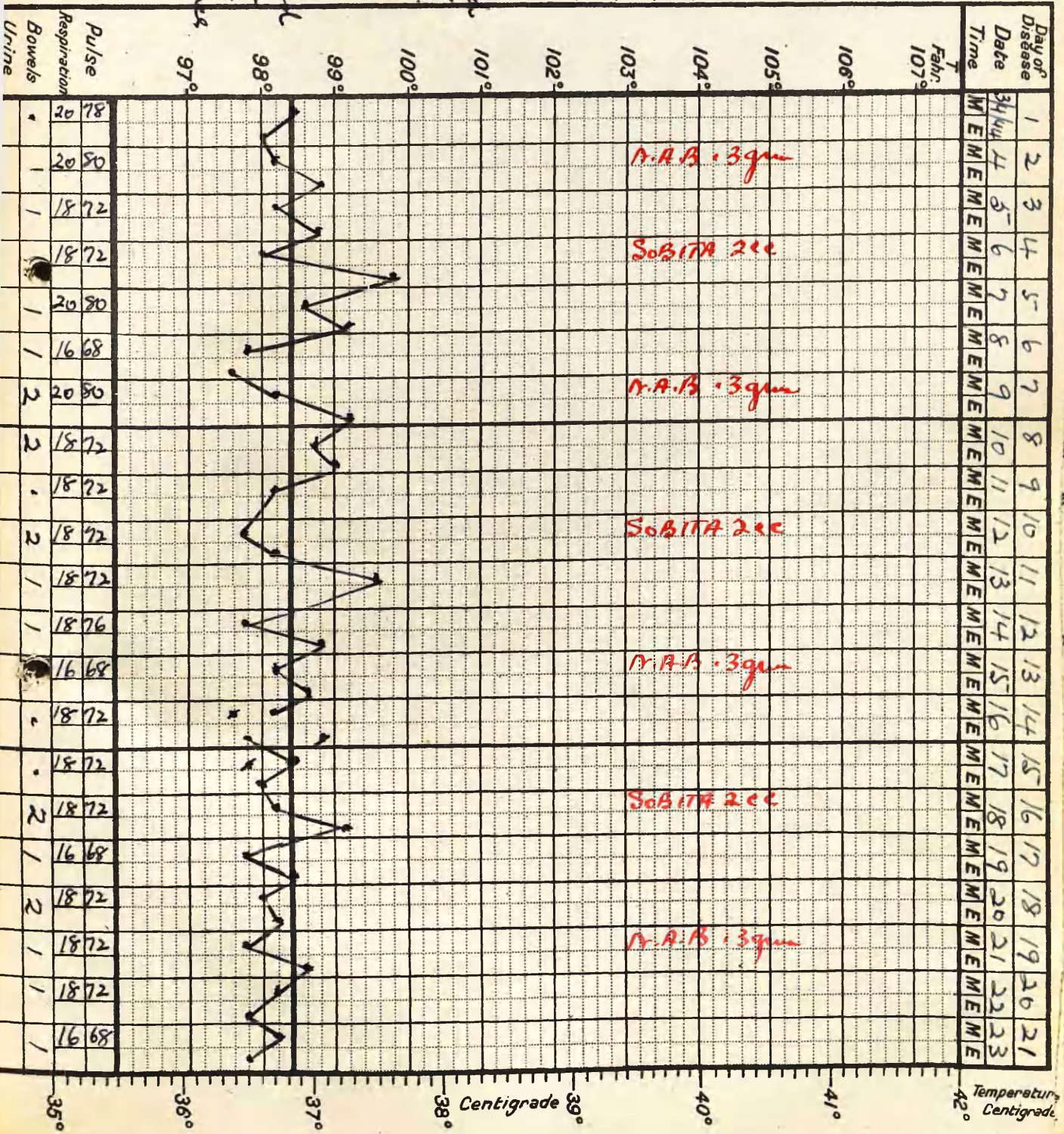
Diet

No. in Case Book

NOTES

Ulcerative colitis
leaving irregular
scars on the sides
Patient reported
in May, 1945, and
the condition
was satisfactory.
The scars reduced
considerably in
size, and had
healthy appearance.

Result
CURED



CASE 32

DATE OF ADMISSION
3rd APRIL, 1944

DISEASE

ULCERATIVE PYLORUS

Name

AJE MISHA (F)
of TAKRAMNDA

Age

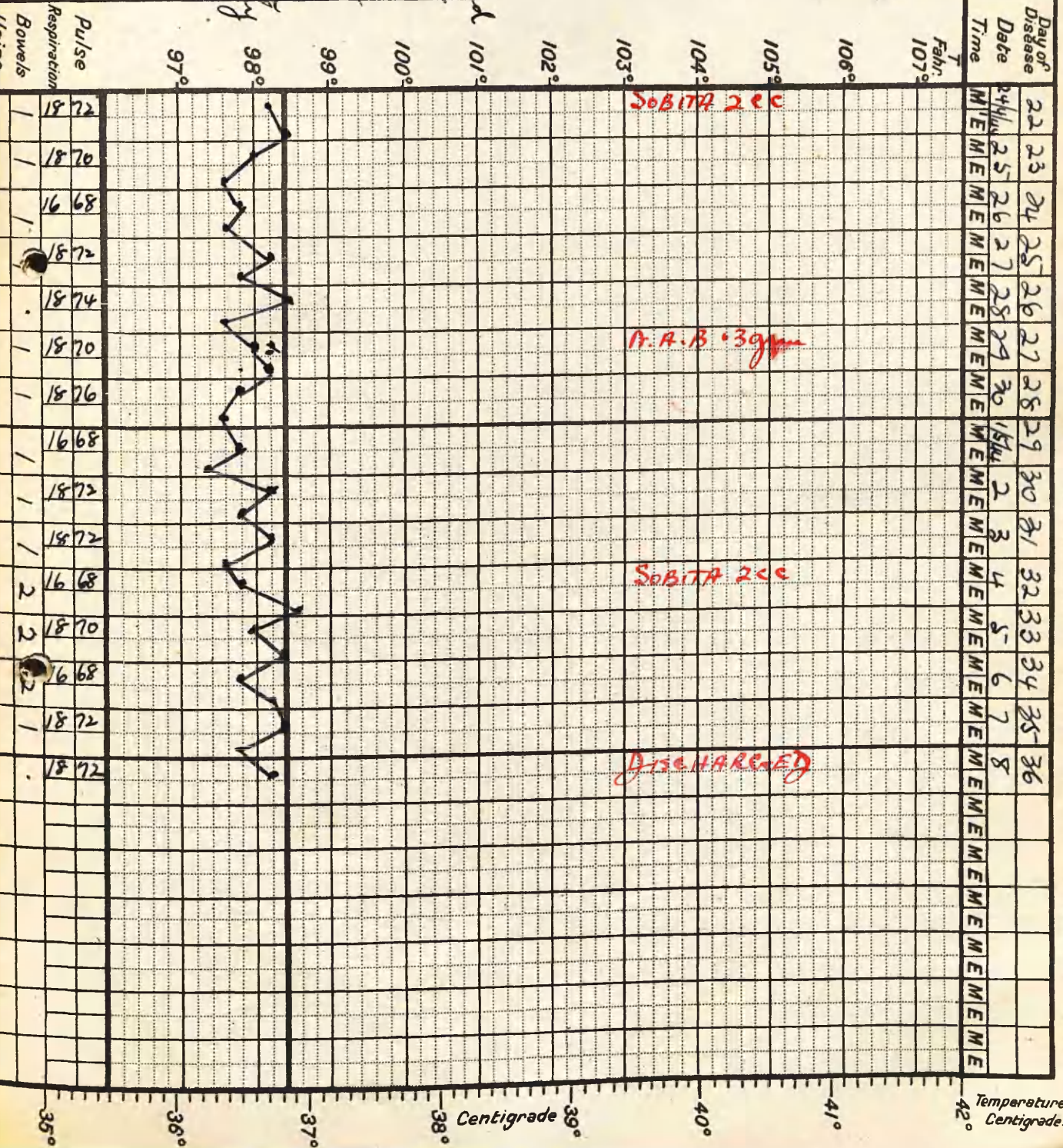
Diet

No. in Case Book

NOTES

Medication heeded
Learning irregular
as on the 4th
Patient reported
in May, 1945, and
the condition
was satisfactory
The scars reduced
in size completely
and had healing
appearance.

Result
CURED



CASE 33

KONDEM KEMKA
of BANGWA,
MAMFE, CAMEROONS.

22nd January, 1945
Male. 19 years.

Occupation:-

FARMER

Complaint:-

The patient complains of ulcers and a "hole" on the left knee.

Duration:-

5 months.

History of Present Condition:-

Prior to one year ago, but for yaws affection when he was 8 years of age, the patient enjoyed a good health. Eight months ago a sore appeared on the side of the knee where there were scars. The condition healed in course of two months leaving unhealthy scars. Five months ago it broke down and became a spreading sore.

Past History:-

The patient had hernia when he was young, and the condition was operated. He had suffered from severe fever and had yaws at the age of 8 years. He was told that six months before the appearance of yaws lesions on the body there was a yaw on the lower jaw for a very short period.

Family History:

The father and mother are alive and in a good condition of health. The father had yaws when he was a child. The younger brother now suffers from yaws and crawcraw. There is no history of venereal or other disease in the family.

Case 33(contd)

General Condition:-

The state of health of the patient is good, being of a good physique with a satisfactory muscle tone and fairly good memory. There is no oedema, jaundice or icteric tint of the conjunctivae.

Temperature 98°F. Pulse 72. Respiration 18.

Examination:-

The hairs are well kept and there are no eruptions on the scalp. The neck, trunk and upper extremities have no lesion. On the outer aspect of the left knee there are ulcerations with the formation of scars. There are two points suggestive of sinuses, but on examination and probing proved negative. The active and passive movement of the knee-joints are satisfactory and no abnormal sound heard during movements. There is no swelling or oedema of both knees.

Heart

Circulatory System

Gastro-Intestinal System

Nervous System

Urinary System

Nothing abnormal is detected.

Diagnosis:-

Ulcerative Yaws.

Result:-

Cured.

CASE 33

DATE OF ADMISSION

22nd January 1945

DISEASE

ULCERATIVE COLITIS

Name

KONDEN KEMKA (P)
of Barsana

Age

19 years

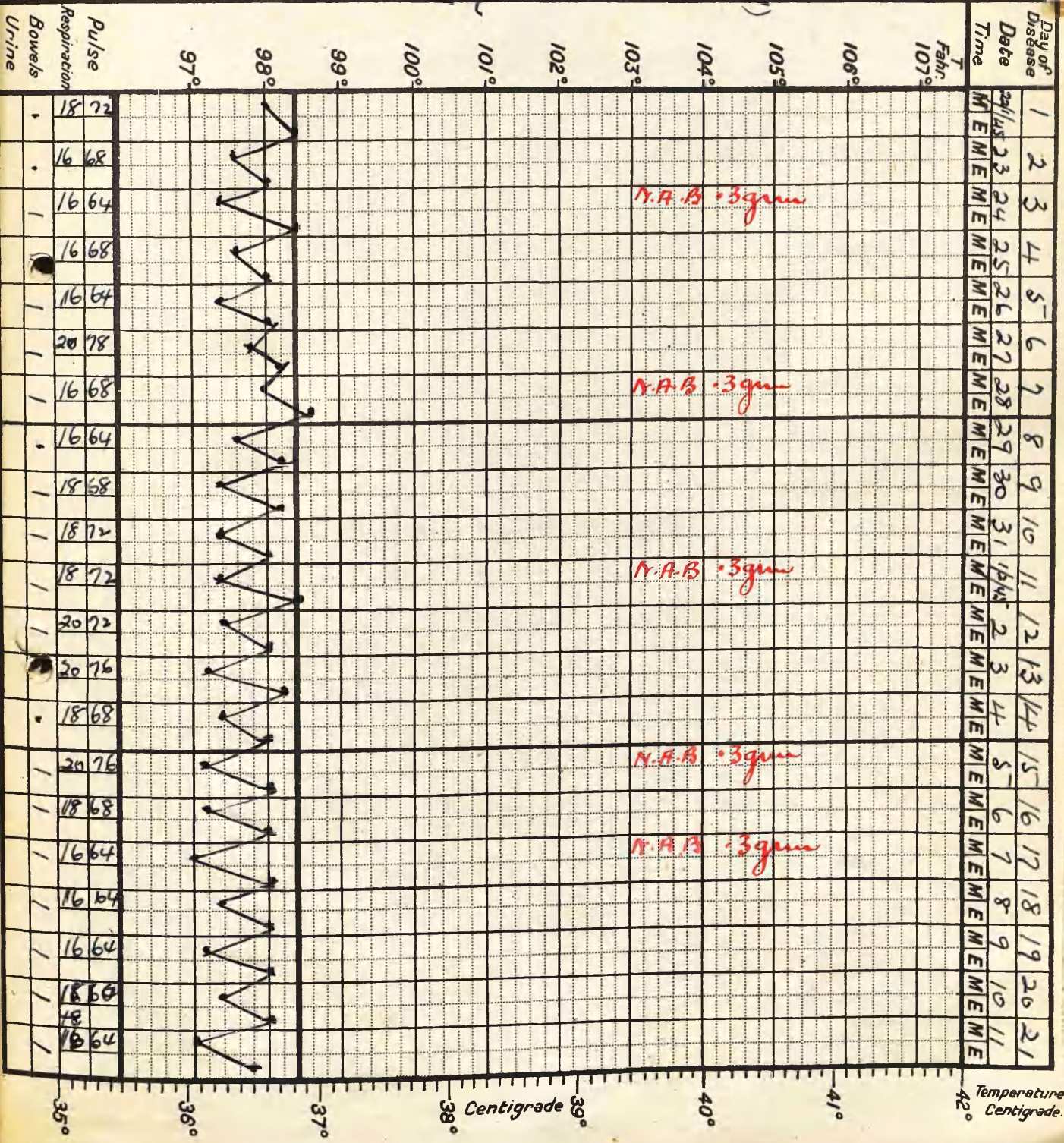
Diet

No. in Case Book

NOTES

Menstruation has been leaving a healthy scar.

Result
CURED



CASE 33

DATE OF ADMISSION
22nd JANUARY, 1945

DISEASE
ULCERATIVE YAWS

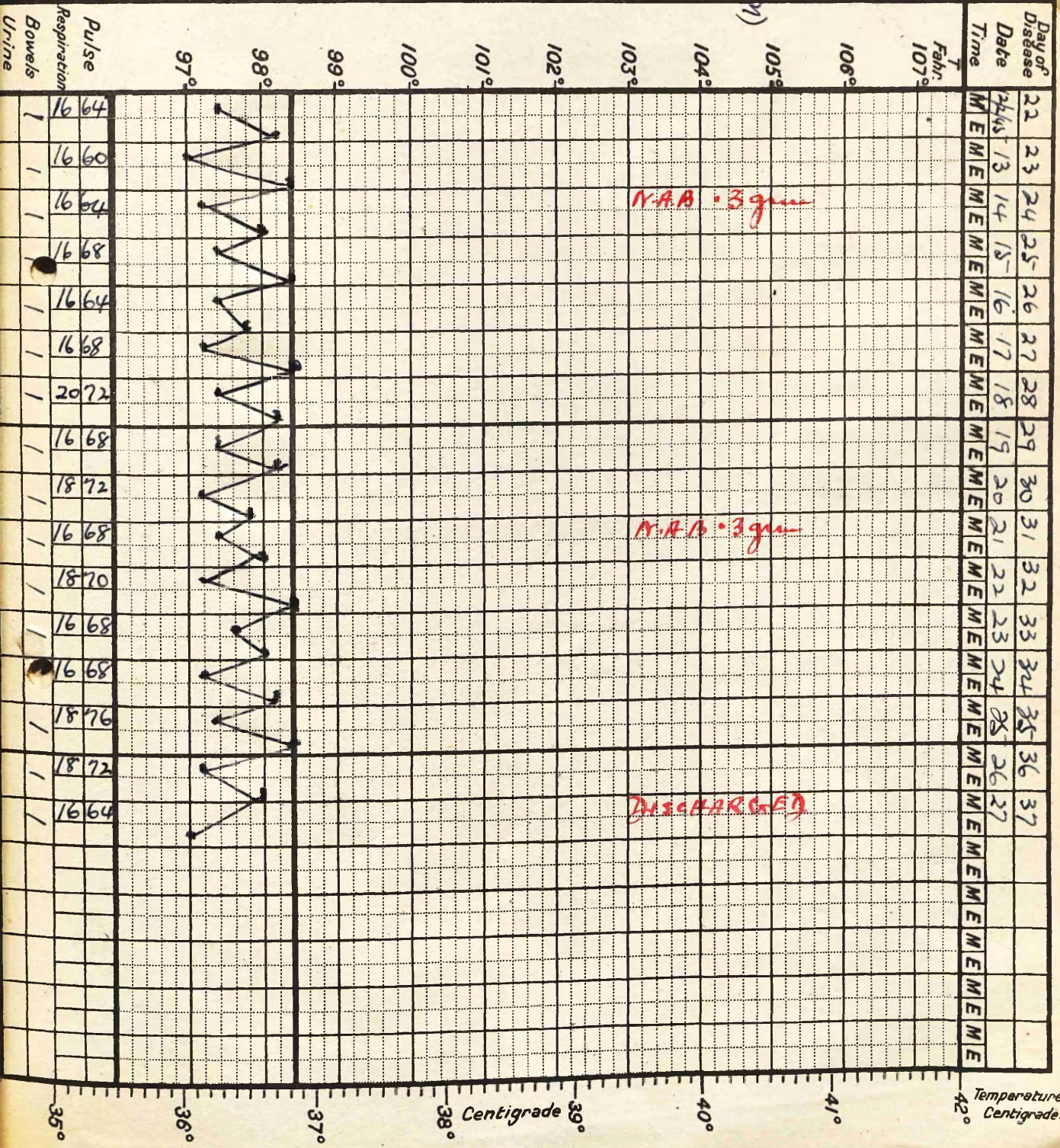
Name
KONDEN KEMPA (M)
of BANGSWA

Age
19 years

Diet
No. in Case Book

NOTES
Ulceration healed
leaving a healthy
scar

Result
CURED



5th June, 1941
P. 101



**Fig.29 - Ulcerative Yaws Lesions
(Late Stage)
(Case 34)**

... probably broncho-pneumonia
... At the age of 5 years
... which appeared actually as
... several disease.
... in a state of good
... in the family, around. There is

CASE 34

EBOB BESONG of BANYANG,
MAMFE, CAMEROONS.

5th June, 1944
Female. 29 years.

Occupation: -

Housewife.

Complaint: -

The patient complains of rashes and ulceration on the body.

Duration: -

7 years.

History of Present Condition: -

A few years ago patient's attention was called to the fact that her legs and forearms (the more exposed parts) had colours of deep black and light brown with some ulcerations. The patient did not attach any importance to the remark or colours. Seven years ago there was crawcraw in many parts of her body with some parts ulcerating and healing. After some months almost all parts of her body were covered by small irregular ulcerations which resisted treatment by healing and recurring. The wet season favoured the increase of the lesions.

Past History: -

The patient had cough and fever (probably broncho-pneumonia) when she was about 5 years of age. At the age of 9 years she suffered from yaws eruptions which appeared scantily on the body. She had had no attack of venereal disease.

Family History: *

The father and mother are alive and in a state of good health. Yaws affection is common in the family, compound. There have

Case 34(contd)

been two cases of leprosy in the family, but there is no history of venereal disease.

General Condition:-

The hairs and scalp are in a good condition and well looked after, and the patient is a well developed individual with a good muscle tone. There is no oedema in any parts of the body, no jaundice or icteric tint of the conjunctivae.

Temperature 98.4°F. Pulse 76. Respiration 18.

Examination:-

There is nothing abnormal about the neck though it is a little full. There are black and brown depigmented spots scattered all over the body. The palms of the hands and soles of the feet have the depigmentation in great number. On the flexures of the extremities are numerous ulcerations, some healing leaving scars behind, others advancing without any sign of healing. White spots(albinos spots) are very numerous on the body, particularly on the extremities.

Crawcraw covers the trunk and buttocks.

- Heart
 - Circulatory System
 - Pulmonary System
 - Gastro-Intestinal System
 - Nervous System
 - Urinary System
-) Nothing abnormal is detected.

Diagnosis:-

Ulcerated Yaws

Result:-

Relieved.

CASE 34
 DATE OF ADMISSION
 5th JUNE, 1944

DISEASE
 ULCERATIVE COLITIS

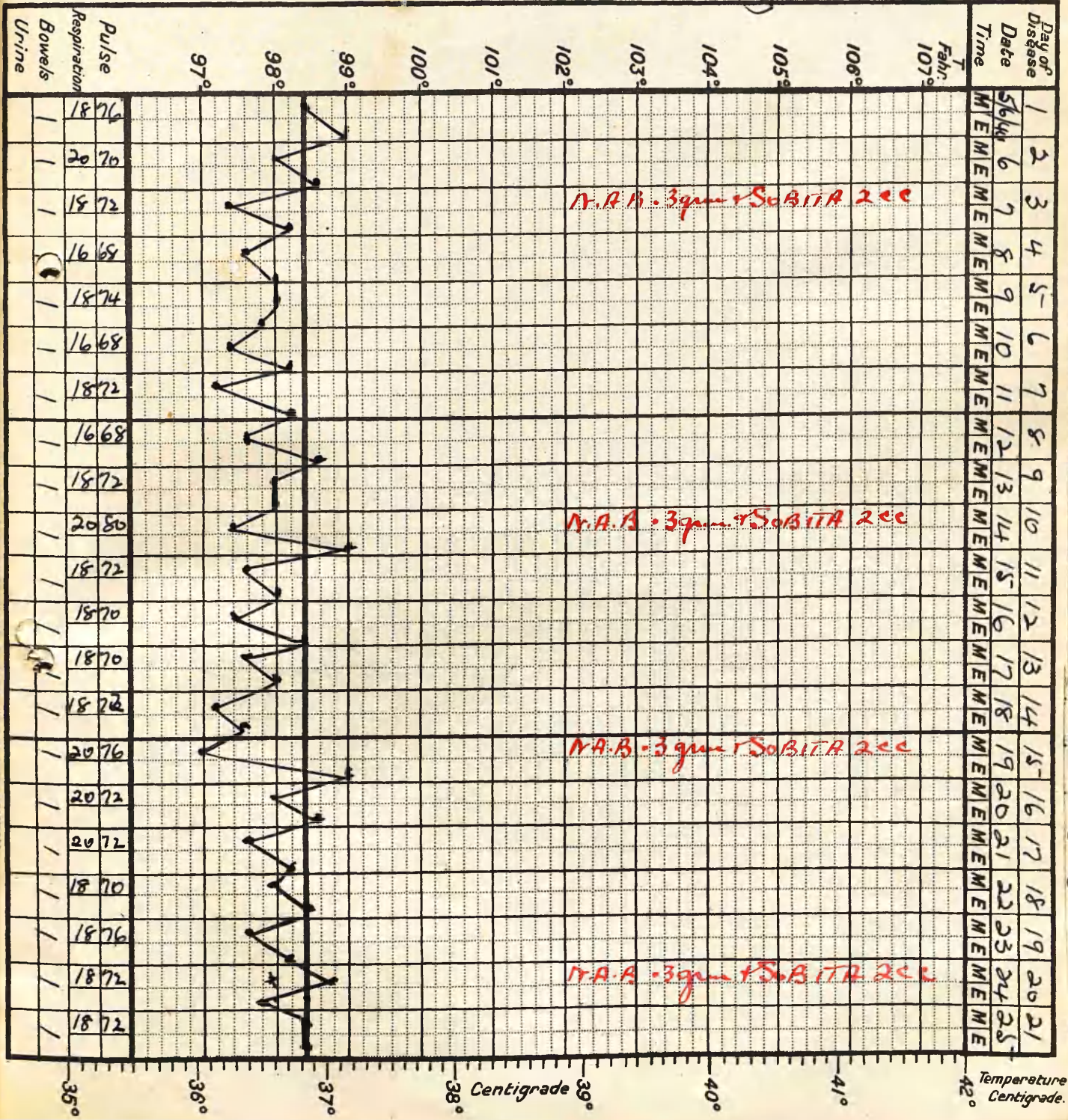
Name
 EGOR BRESOROFF
 of BANYAN

Age
 29 years

Diet
 No. in Case Book

NOTES

Result
 RELIEVED



MADE IN THE UNITED STATES OF AMERICA BY THE BIRCHALL INSTRUMENT MAKERS, LEEDS AND LONDON.

CASE 34

DATE OF ADMISSION
5th JUNE, 1944.

DISEASE
ULCERATIVE COLITIS

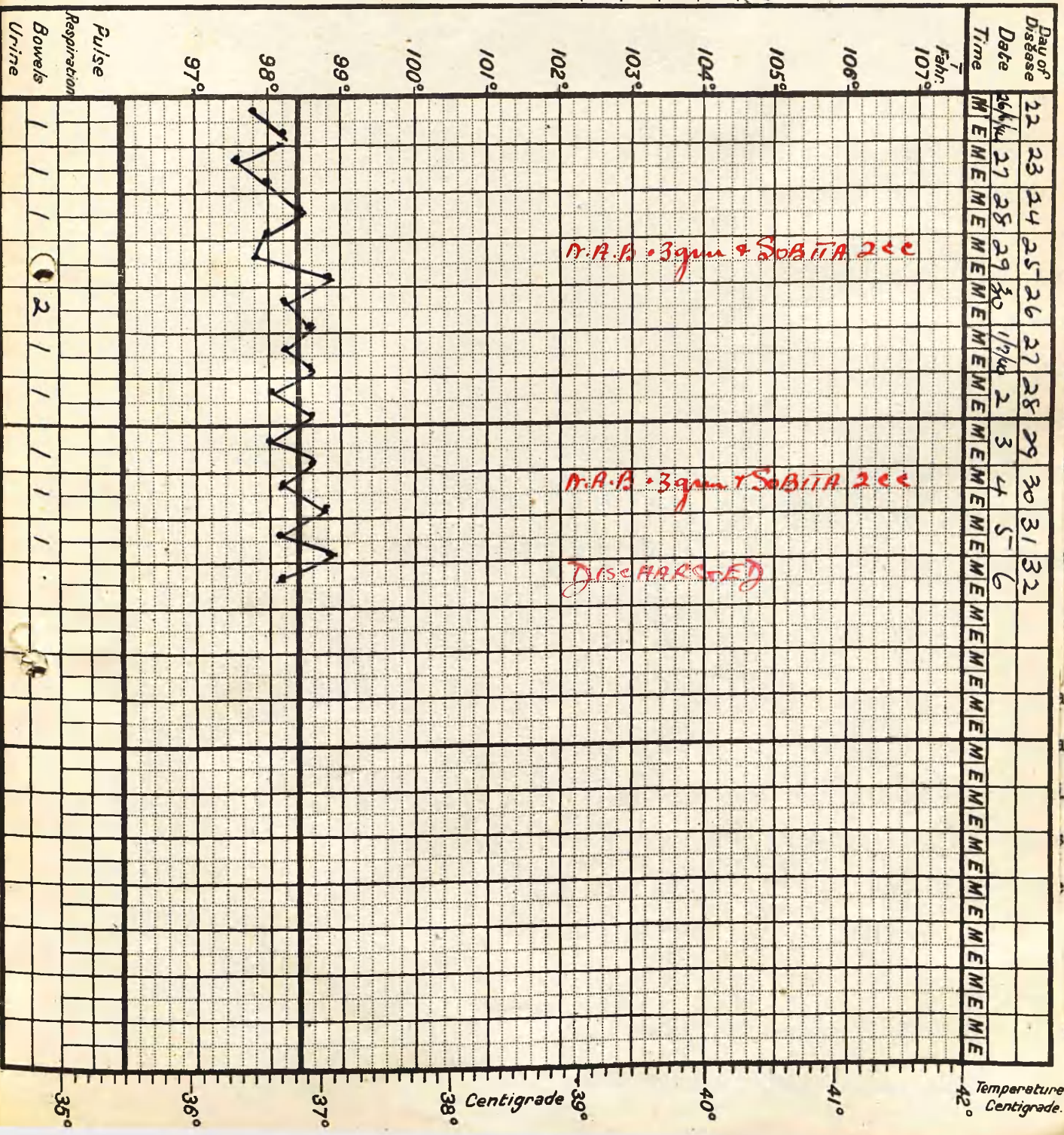
Name
EROB BESON & (F)
of BAN JAYS

Age
29 years

Diet

NOTES

Result
RELIEVED



CASE 35

AGBOR AKO of BANGWA,
MAMFE, CAMEROONS.

27th December, 1939.
Male. 14 years.

Occupation:-

Complaint:-

The patient complains of sores on the right knee and back of the left leg.

Duration:-

1½ years.

History of Present Condition:-

The patient enjoyed a good health until two years ago when he noticed that some old scars on the skin were changing colour. Later some of the scar marks on the lower extremities broke down and spread in different directions. The ulcerations under treatment partially healed but broke down again and healed. The ulcerations near the right knee and back of the left leg did not heal but spread widely producing pain and stiffness of the knee.

Past History:-

The patient had pneumonia at the age of 8 years. Two years earlier he suffered from pertussis. At the age of 11 years he had yaws which was treated by the application of sepi and intake of herb decoction. The yaws disappeared leaving some marks on the body particularly in the vicinity of the knees and legs.

Family History:-

The father and mother are alive and well. The patient's elder brothers had yaws a few years ago. The father had urethral

Case 35(contd)

discharge five years ago; but both parents had never sores or ulcers on the private parts.

General Condition:-

The patient is greatly emaciated. The conjunctivae are white but the pupillary reflexes are normal. There is no abnormality found in the retinae. The teeth are in a bad condition, and the mouth emits a bad odour. The right knee is partially stiffened, and the ribs and bones of the extremities are prominent.

Temperature 98.2 F. Pulse 72. Respiration 18.

Examination:-

The patient is emaciated and anaemic. The tongue is very coated with whitish brownish fur. The fauces show no abnormality and the tonsils are not enlarged. There is no tremor of the lips and tongue, and the condition of the pharynx is normal.

There is a disproportion between the head and body. There are yaws ulcerations on the upper aspect of the right knee-joint extending upwards to the lower portion of the thigh and downwards to the upper portion of the leg. The posterior aspect of the lower portion of the left leg has yaws ulcerations. The ulcerations of the left leg are fixed to the under structures, and affect the Tendon Achilles.

Heart) }) }) }) }) }	Nothing abnormal is detected. ed.
Pulmonary System		
Gastro-Intestinal System		
Nervous System		
Urinary System		
Urinary System)	

Case 35(contd)

Diagnosis:-

Ulcerative Yaws.

Result:-

Improved.

The patient left without being discharged.

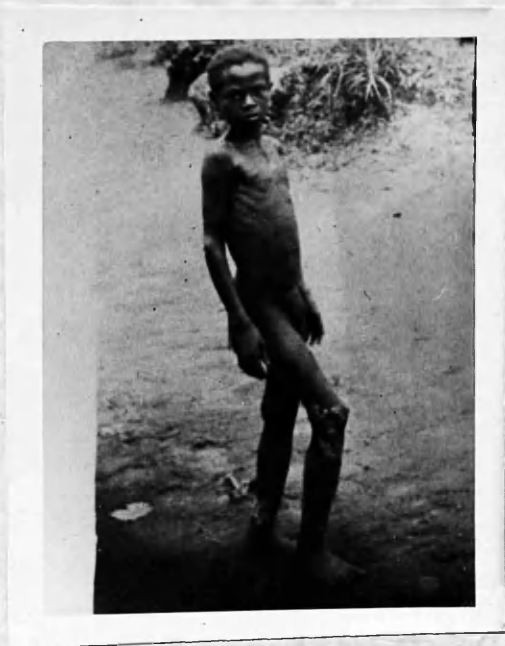


Fig. 36 - Ulcerative Yaws.
Note the emaciation of the
patient. (Case 35).

CASE 35

DATE OF ADMISSION
27th DECEMBER, 1939

DISEASE
ULCERATIVE COLITIS

Name
ASGAR AKOUM
of BARRISMA

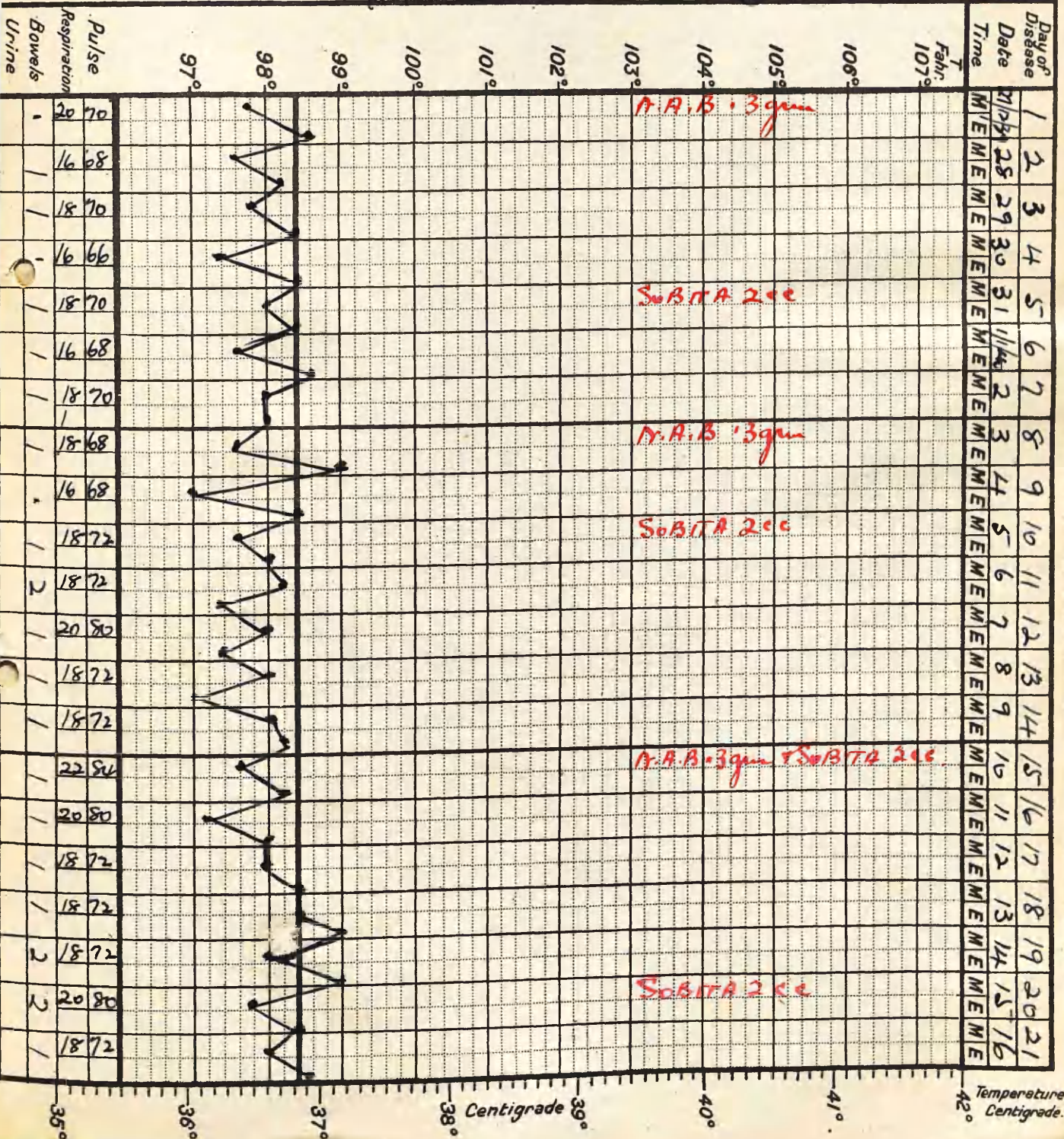
Age
14 years

Diet

No. in Case Book

NOTES
Temperature bars
of the knee & leg.
Patient left with
out a complete
cure.

Result
IMPROVED



CASE 35

DATE OF ADMISSION

27th DECEMBER, 1939

DISEASE

ULCERATIVE COLITIS

Name

ARBOUR AKO (M)
of BARRISMA

Age

44 years

Diet

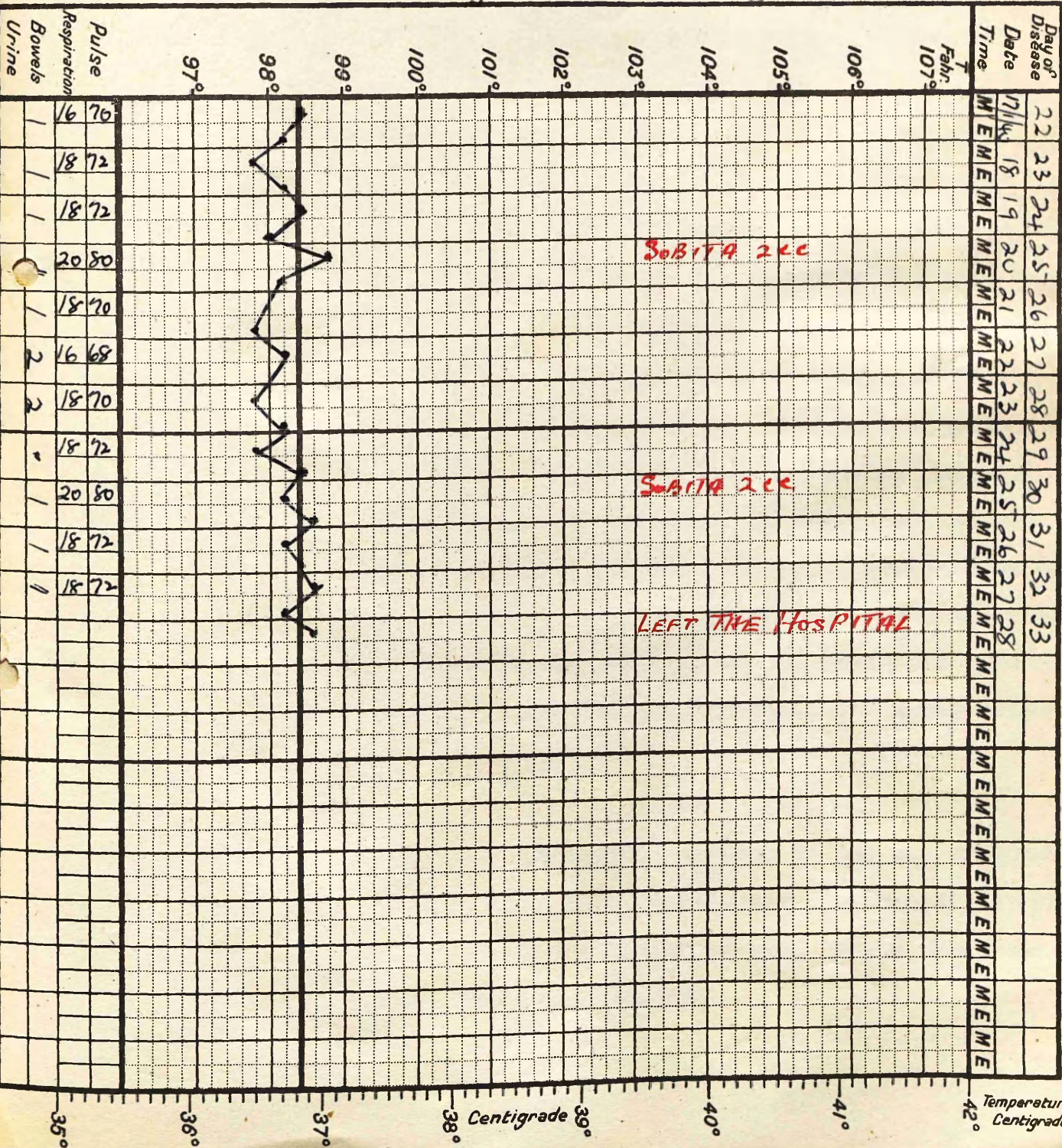
No. in Case Book

NOTES

Ulcerative colitis
of the knee type.
Pain left
without a
complete cure

Result

IMPROVED



CASE 36

MARIA AGBOR of BANYANG,
MAMFE, CAMEROONS.

27th March, 1944
Female. 2½ years

Occupation:-

Complaint:-

The patient has sore on the left foot.

Duration:-

2 weeks.

History of Present Condition:-

One year ago the mother of the patient noticed a little sore on the left clavicle of the child. In course of a month the sore disappeared without leaving any mark behind. Three months after yaws eruptions appeared on the different parts of the body and a successful treatment by the native doctor was undertaken. On the left lower extremity where the yaws lesions were more numerous than any other part of the body, some yaws lesions on the outer aspect of the foot coalesced and did not readily amend to treatment. After a few weeks scars appeared on the part and it was taken for granted that all was well. Two weeks ago, however, the scars broke down and formed an ulcer.

Past History:

The patient had infantile diarrhoea at the age of 4 months old. There was a severe cough (acute bronchialitis) after measles when she was 9 months of age. There were yaws lesions on the body about one year ago.

Case 36(contd)

Family History:-

The parents are alive and well. The elder brother of the patient suffered from yaws eighteen months ago. The parents have never suffered from any infectious disease or a venereal disease.

General Condition:-

The patient is a well nourished child. There is no eruption on the scalp. The mouth is in a healthy state. There are a few dark spots scattered irregularly on the body. Those on the lower extremities, particularly the lower portions of the legs, are more marked. There is no oedema of the legs, no jaundice, or icteric tint of the conjunctivae.

Temperature 98°F. Pulse 80. Respiration 20.

Examination:-

There are no depigmentations or scaly eruptions in any part of the body. On the upper portion of the left foot there is an angry looking sore.

The portions around the sore are dark-brown but not oedematous.

There are dark spots irregularly scattered on the dorsal aspect of the left foot. Powder of the bark of a tree has been applied on the ulcer.

Heart	} Nothing abnormal is detected.
Circulatory System	
Pulmonary System	
Gastro-Intestinal System	
Nervous System	
Urinary System	

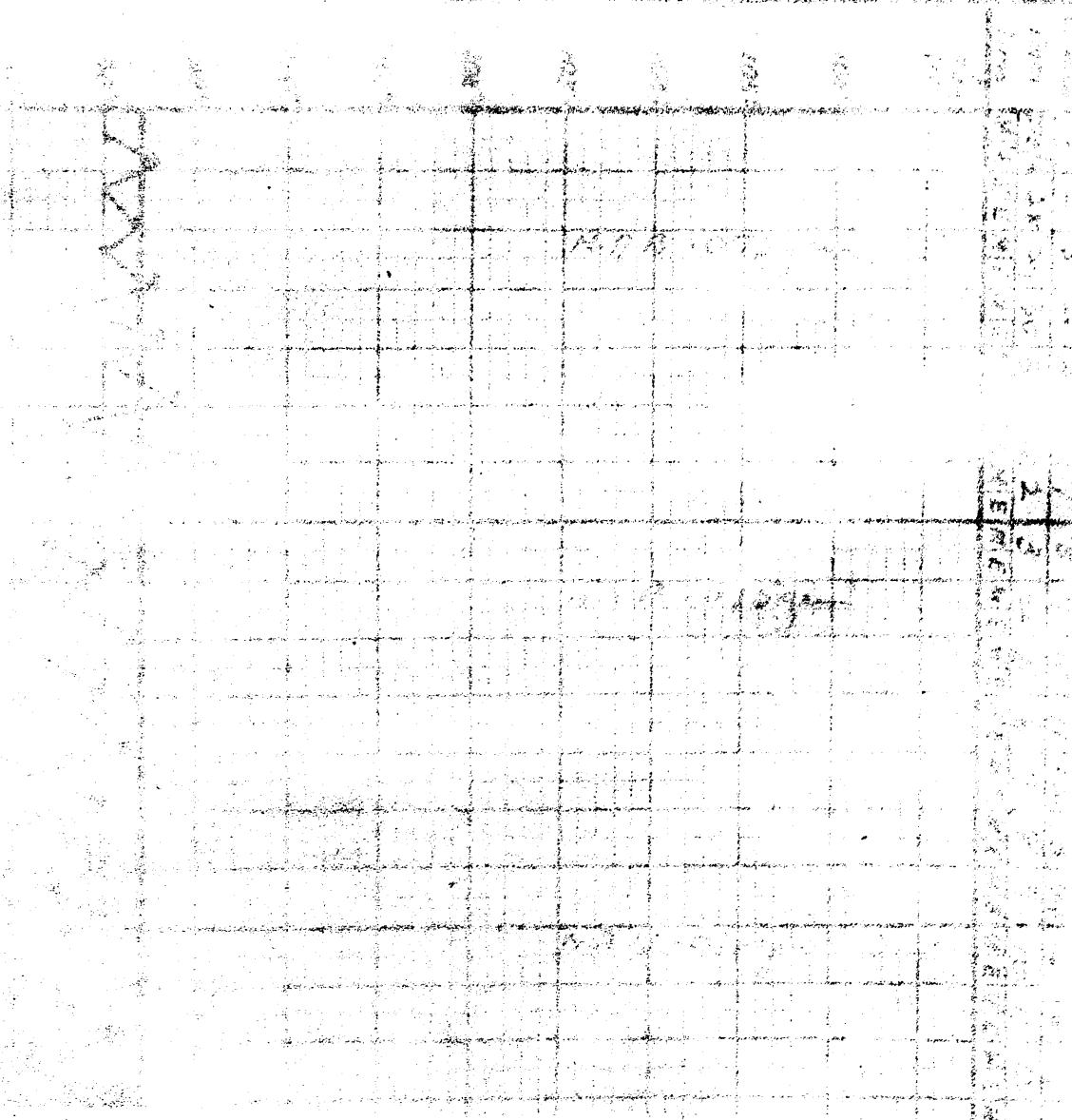
Diagnosis:-

Yaws Ulcer.

Case 36(contd)

Result: -

Cured.



CASE 36
DATE OF ADMISSION

DISEASE
Maws Ulcer

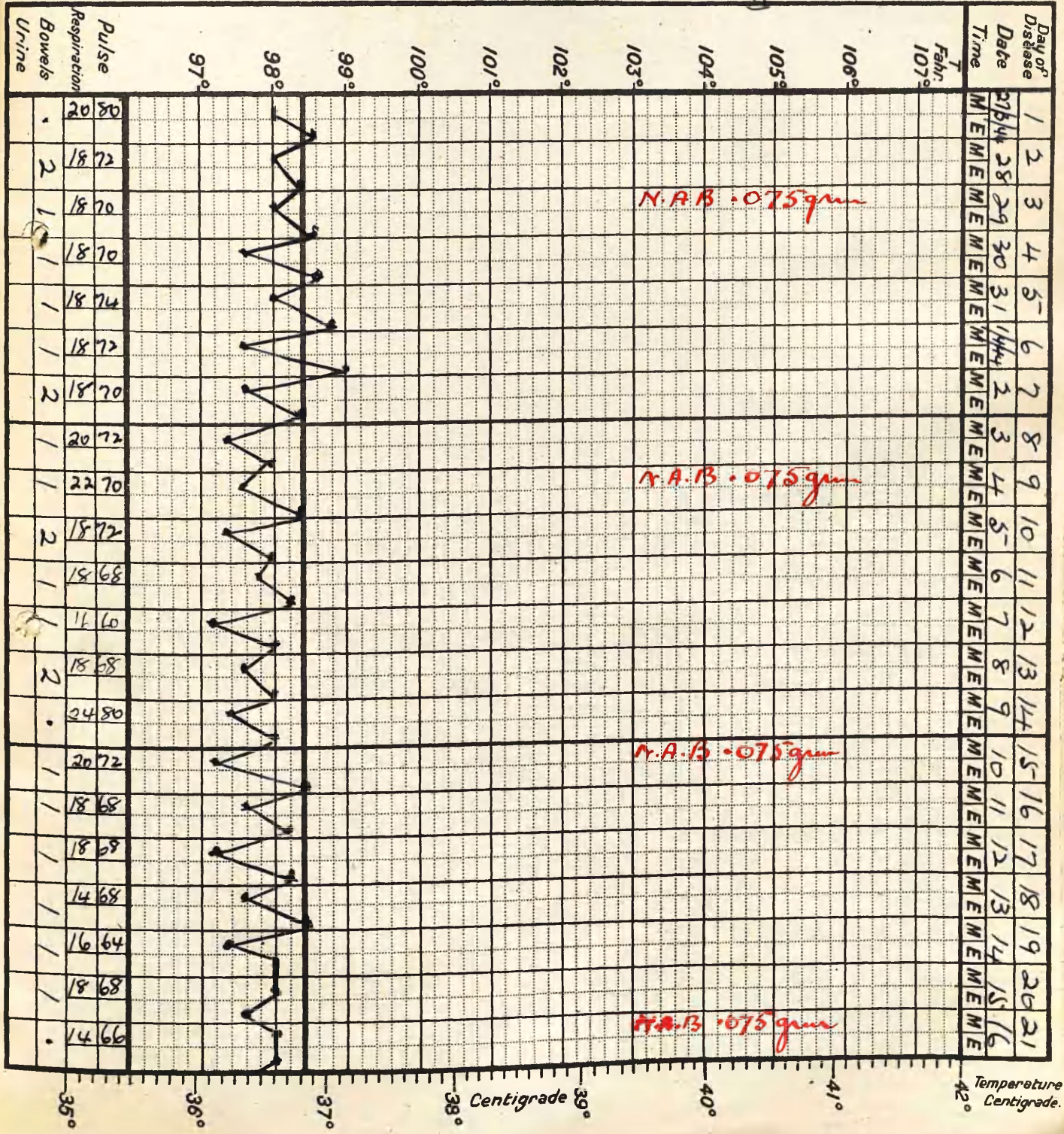
Name
MARIA ANTONIA
of BARRYANS

Age
2 1/2 years

Diet

NOTES

Result
CURED



Case 37

JAMES C. BARNETT,
M.D., CHICAGO

12 December, 1911
Chicago, Ill.
Chicago, Ill.

Decorative

1911

1911

The patient complains of some of the same periods of the

back of the right leg.



Fig. 33 - Yaws Ulcers
 on the external malleolus of
 the left foot and on the
 Tendon Achilles of the right
 foot.
 Note Talipes equinus produced
 by the ulcer on the tendon.
 Note also CawCraw and Albinos
 spots on the legs (Case 37).

CASE 37

DAMANU of BANYANG,
MAMFE, CAMEROONS.

27th December, 1939
Female. 30 years.
Married. Children 2.

Occupation:-

Trader

Complaint:-

The patient complains of sores on the side portion of the lower part of the left leg and back of the right leg.

Duration:-

2 years.

History of Present Condition:-

The patient had been enjoying a fairly good health until three years ago when she had yaws lesions on the trunk, buttocks, and lower extremities. She was treated by a medicine man and the sores died off except those on the lower extremities. The sores situated on the back of the right leg and the lower part of the left leg gradually enlarged until they became large ulcers. All treatment applied proved abortive.

Past History:

The patient had malarial fever and measles before she was 10 years of age. At the age of 23 years she had swollen glands of the neck (trypanosomiasis). Four years ago a yaw appeared on her right breast, but it cleared away in less than a month. The patient had also suffered from crawcraw. There is no history of venereal disease. The patient's brother's son had yaws lesions five years ago and she attended him. She had some difficulty with the second child at birth, and some decoction was prepared by the medicine man for bathing. After

Case 37(contd)

using the decoction for two months she developed crawcraw and scabies on her trunk and extremities.

Family History:-

The patient is married and the husband is alive and healthy. There are two children of 12 years and 9 years respectively. The mother of the patient had yaws when she was a girl, but she now enjoys a good health. The father had suffered from gun shot wounds, and her brother had yaws at the age of 15 years. There is no history of venereal disease or neoplasm in the family.

General Condition:-

The appearance of the head, neck and trunk is normal. The patient is fairly nourished and there is no jaundice or icteric tint of the conjunctivae, but the left lower extremity is elephantoid. There is pain in the left knee with tenderness of the tibiae. There is no oedema of the face.

Temperature 99.4°F. Pulse 80. Respiration 20.

Examination:-

The scalp has no lesions. There is an oedema of the solid type of the left lower extremity. On the external malleolus of the left foot there is a large ulcer of irregular contour, and the edges are thick, raised and folded inwards. The ulcer is deep exhibiting muscles and tendons. The skin of the foot is hard to the touch. On the Tendon Achilles of the right foot is an ulcer with edges irregular and adhering to the skin. The patient walks on the ball of the toes,

Case 37 and has developed Atropis equinus. There are crawcraws on and has developed Atropis equinus. There are crawcraws on the trunk and extremities with albinos spots. The glands of the groins are enlarged.

Heart:-

The apex beat is in the 7th intercostal space and its pulsation is visible. The external border of the heart is outside the mammary line. In the mitral area there is a systolic murmur which is well conducted to the axilla.

Urine:-

Acid in Reaction.

Specific Gravity 1030.

Albumen, Trace.

There are no other abnormalities present.

Circulatory System	} Nothing abnormal is detected.
Pulmonary System	
Gastro-Intestinal System	
Urinary System	
Nervous System	

Diagnosis:-

Chronic Yaws Ulcers.

Result:-

- i Ulcer of the left foot healed.
- ii Ulcer on Tendon Achilles healed with irregular raised scars

Follow up:

Irregular raised scars broke down, and ulcer on Tendon Achilles recurred in August, 1943.

CASE 37

DATE OF ADMISSION

27th DECEMBER 1939

DISEASE

CHRONIC TYPHS

ULCERS

Name of BANYANG

Age 30 years

Diet

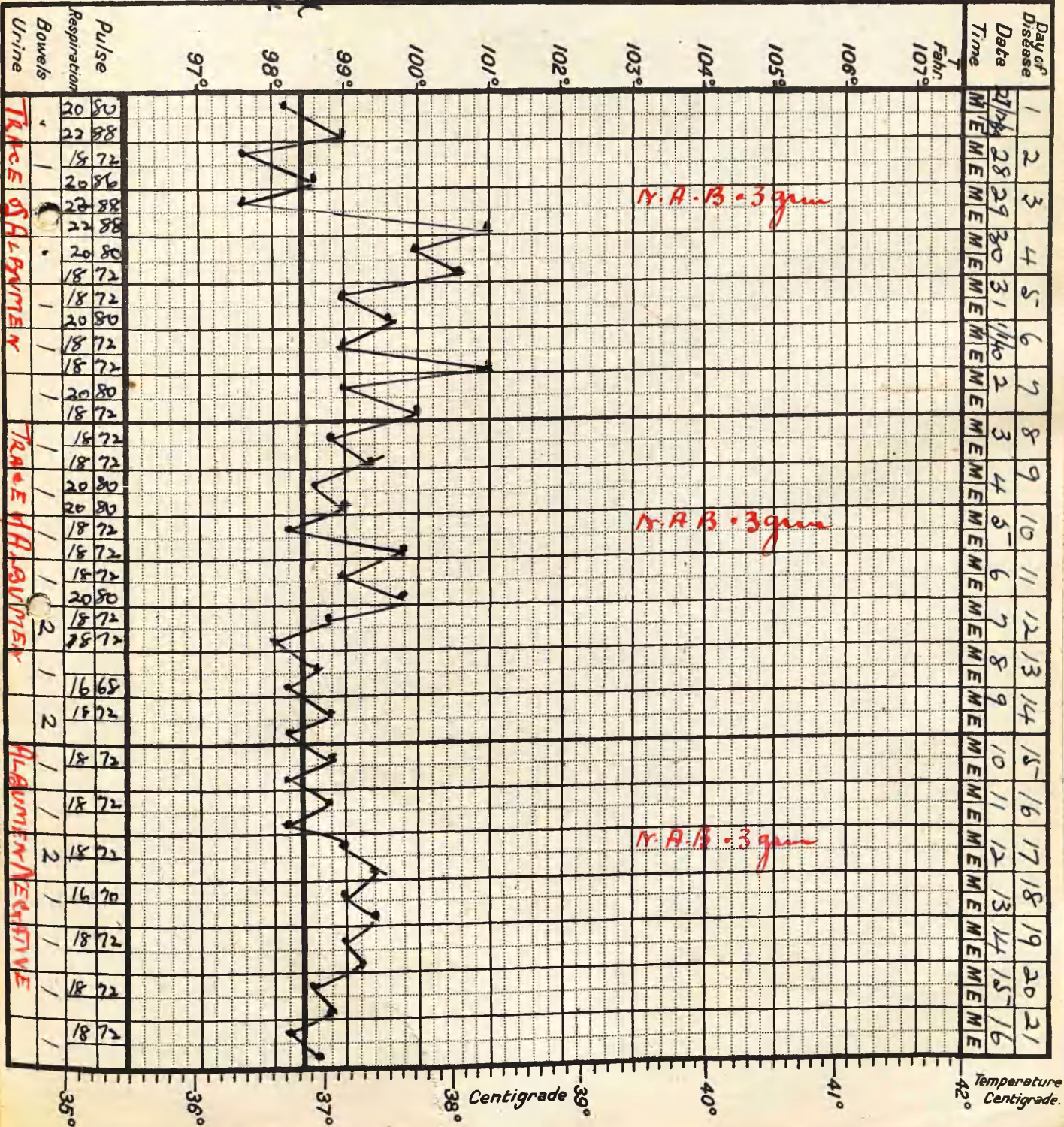
No. in Case Book

NOTES

Your Wears on the general part of the left foot and on the London shies of the right foot. All the symptoms have been produced by the ulcers on the Tarsal tubercles. Towards now and always reports all on the legs.

Result

CURED



CASE 37

DATE OF ADMISSION
27th DECEMBER, 1939

DISEASE
CHRONIC Yaws
ULCERS

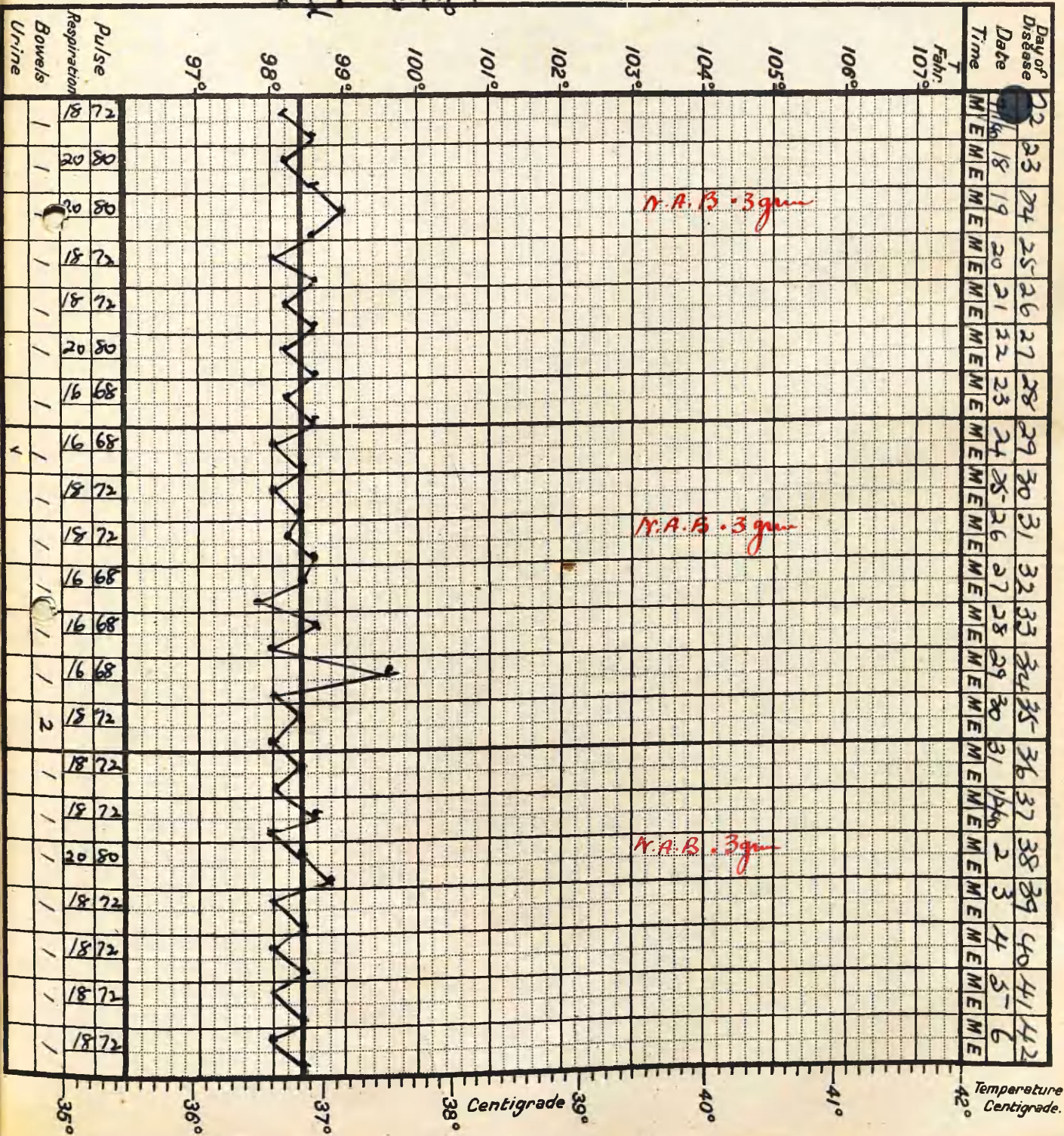
Name
DAMANU (F)
of BANYANS
Age
30 years

Diet
No. in Case Book

NOTES

burns where on the
upper part of the
of the left foot and
on the tendon Achille
of the right foot.
Palmer's ointment
has been produced
by the ulcer on the
Tendon Achille.
Lumps brown and
albuminous are
on the legs

Result
CURED



N.A.B. 3 gm

N.A.B. 3 gm

N.A.B. 3 gm

Temperature Centigrade

Centigrade

CASE 37

DATE OF ADMISSION
 27th DECEMBER, 1934

DISEASE
 CHRONIC PYRIS
 ULCERS

Name
 DAMANU (F)
 of BANYAS

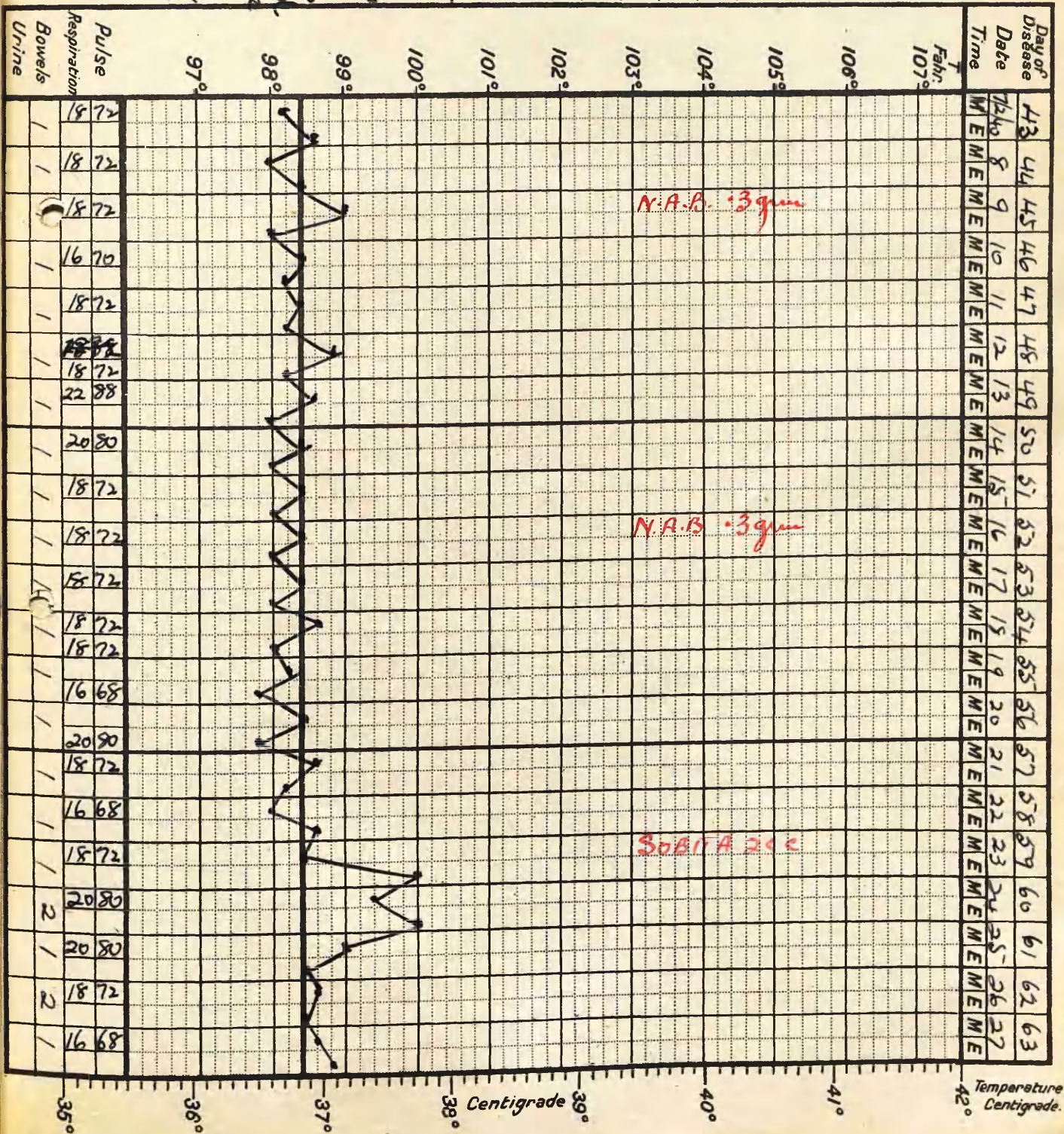
Age
 30 years

Diet

No. in Case Book

NOTES
 There were on the external mal-positions of the left foot, and on the tendons of the right foot. The tendons of the right foot has been produced by the ulcer of the tendons of the right foot. The tendons of the right foot has been produced by the ulcer of the tendons of the right foot. The tendons of the right foot has been produced by the ulcer of the tendons of the right foot.

Result
 CURED



N.A.B. 3gm

N.A.B. 3gm

SOBITA 2cc

CASE 37

DATE OF ADMISSION

~~27th DECEMBER 1937~~

DISEASE

CHRONIC YAWS

ULCERS

Name

DAMAY (E)
of BANJARAS

Age

30 years

Diet

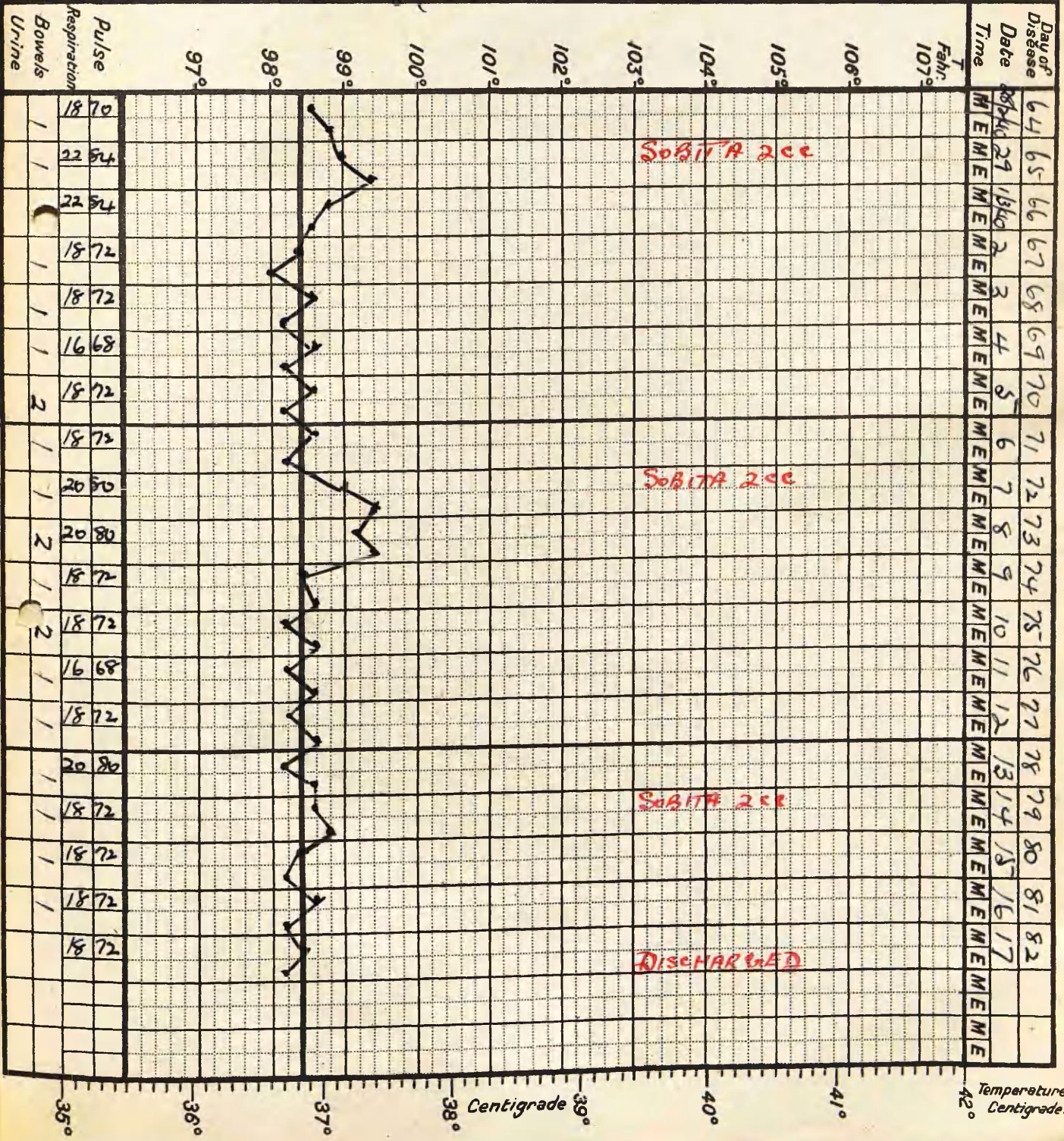
No. in Case Book

NOTES

Yaws lesions on the extremities, including of the left foot and on the hand on the right side. Follicles eruptions has been produced by the infection the secondary lesions. Erythematous and ulcers spots are on the legs.

Result

CURED



CASE 38

SUSANNAH AKO
of MBINYONG,
MAMFE, CAMEROONS.

22nd February, 1945
Female. 29 years.
Married.

Occupation:-

Housewife.

Complaint:-

The patient complains of ulcers at the sites of old yaws lesions.

Duration:-

5 years.

History of Present Condition:-

Prior to eight years ago the patient had enjoyed a good health. Seven years ago she ~~she~~ declared that sores followed followed yaws lesions in the lower portion of the right leg. The sores healed leaving scars which broke down and formed ulcers five years ago.

Past History:-

The patient had trypanosomiasis when she was 15 years old and was staying with her aunt in Fossungo area. At the age of 18 years she suffered from bacillary disease. She had been operated for lipoma, womb trouble and hernia on different occasions. There is no history of venereal disease.

Family History:-

The patient is married and her husband is alive and well, but there is no issue. Her parents are dead, but the cause of death is unknown. There is history of yaws, leprosy and trypanosomiasis in the family.

Case 38(contd)

General Condition:-

The patient is well nourished and obese. There is no pain or tenderness in any part of the body though there is an accumulation of fat in the lower abdomen. There is no jaundice or icteric tint of the conjunctivae.

Temperature 98.6^oF. Pulse 72. Respiration 18.

Examination:-

The hairs and scalp are clean and the mouth cavity including the teeth is in a healthy state. There are a few dark spots on the body. There are two ulcers with healing scars within and around on the inner aspect of the right leg. The outlines of the ulcers are very irregular and the edges raised with dry crusts on the outer borders. The scars are in an unhealthy condition with tendency to break down.

Heart	}	There is nothing abnormal detected.
Circulatory System		
Pulmonary System		
Gastro-Intestinal System		
Nervous System		
Urinary System		

Diagnosis:-

Yaws Ulcers.

Result:-

Cured.

Ulcers healed leaving healthy scars.

CASE 38

DATE OF ADMISSION

25th FEBRUARY, 1945

DISEASE

WOUNDS ULCERS

~~and Feeding~~

Name

SUSANNAH AKOLF
of BRAYTONS

Age

29 years

Diet

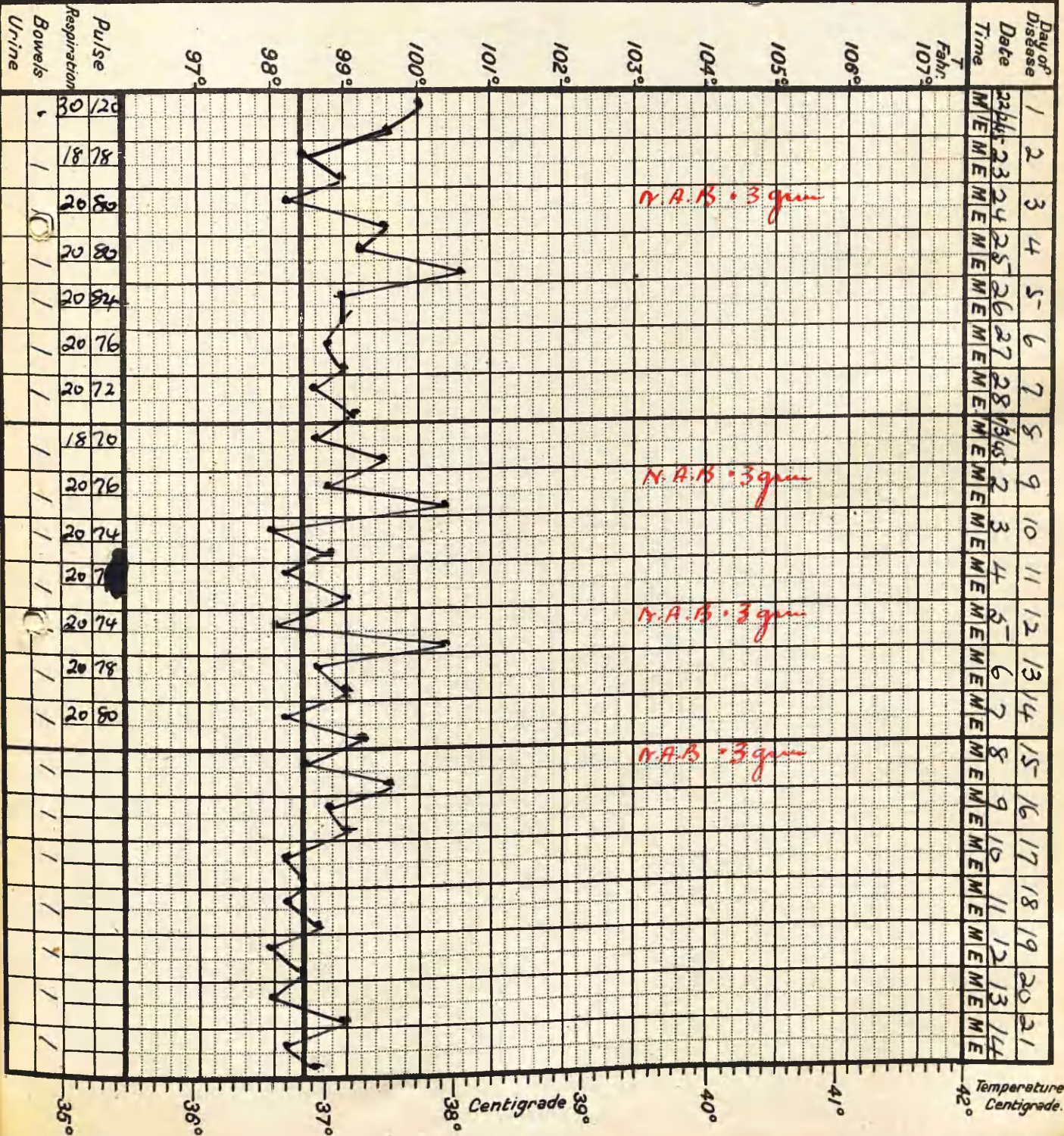
No. in Case Book

NOTES

Wounds Ulcers
healed leaving
healthy scars

Result

CURED



CASE 38

DATE OF ADMISSION

22nd FEBRUARY, 1945

DISEASE

YAW'S ULCERS

Name

SUSANNAH ALICE
of Marysville

Age

29 years

Diet

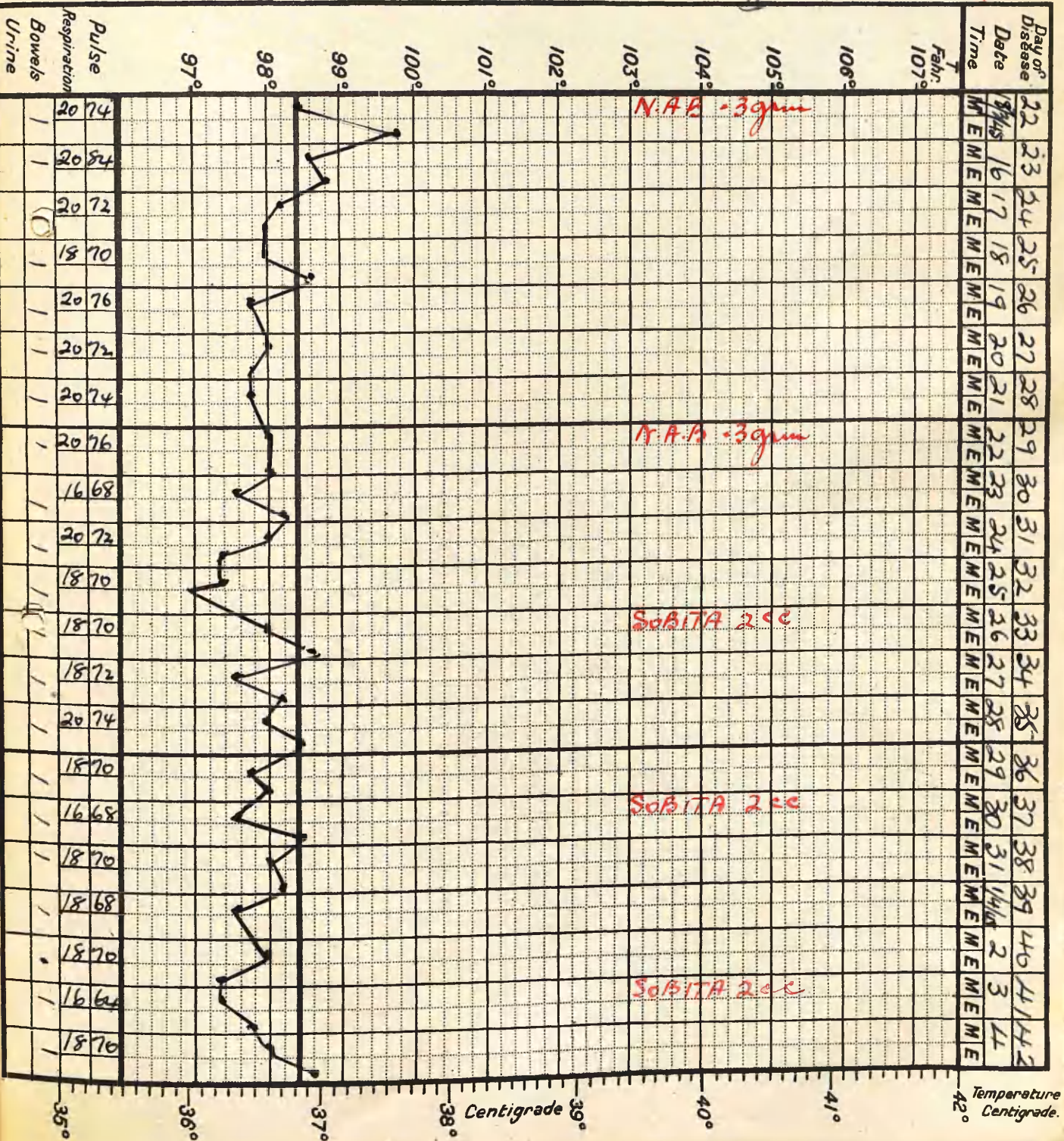
No. in Case Book

NOTES

YAW'S ULCERS
healed leaving
healthy scars

Result

CURED



CASE 39

AJUA BAYO of MBULU
MAMFE, CAMEROONS.

18th February, 1945
Female. 38 years.
Married. Children 4.

Occupation:-

Petty Trader.

Complaint:-

The patient complains of ulcer on the upper portion of the left leg.

Duration:-

One month.

History of Present Condition:-

The health of the patient had been good prior to two months ago when she began to feel some of the old scars on her skin irritating and itchy. A month later a small sore developed on the upper portion of the left leg. At the spot where the sore broke out was an old scar of some years standing.

In a few days the sore spread upwards, downwards and to the posterior aspect of the leg encroaching on other scars in its vicinity.

Past History:-

Patient had pertussis at the age of 12 years and later developed pleurisy. At the age of 15 years she had a severe variola which left some marks on her face. She had been treated for the passing of blood in the urine (bilharzia). There was an attack of yaws six years ago. The yaws lesions were on the trunk and upper extremities but more numerous on the lower extremities. The scalp, face and neck were not affected. There is no history of any venereal disease.

Case 39(contd)

Family History:-

The father and the mother of the patient are dead. She is married, her husband alive and well, and there are four children who enjoy a good state of health. There is no tendency to any particular disease in the family.

General Condition:-

The patient is well nourished with a good muscle tone. There is no eruption in the scalp. The neck is short and thick but there are no veins visible and the thyroid gland is not enlarged. The patient is not anaemic and there is no oedema of the legs, jaundice or icteric tint of the conjunctivae. There are smallpox marks on the face.

Temperature 98.4°F. Pulse 72. Respiration 18.

Examination:-

There are a few dark spots on the right arm, left forearm, and the trunk. On the lower portions of the thighs and upper half of the legs, particularly the left leg, are marks and scars scattered irregularly. There is a large fungating ulcer on the upper portion of the left leg laterally. The ulcer is foul, its edges irregular and raised, and its surface of a dirty gray. The ulcer extends in all directions of the leg. The calf area is oedematous and pits on pressure. Old large scar marks are seen on the right thigh, trunk, both elbows and back of the right hand.

Case 39(comtd)

Heart

Circulatory System

Pulmonary System

Gastro-Intestinal System

Nervous System

Urinary System

) There is nothing abnormal detected.

Diagnosis:-

Yaws Ulcer.

Result:-

Relieved.

Ulcer healed leaving ugly scars which may break down at any time.

CASE 39

DATE OF ADMISSION:
18th FEBRUARY 1945

DISEASE

YAWS ULCER

Name of M.B.V.L.V. (F)

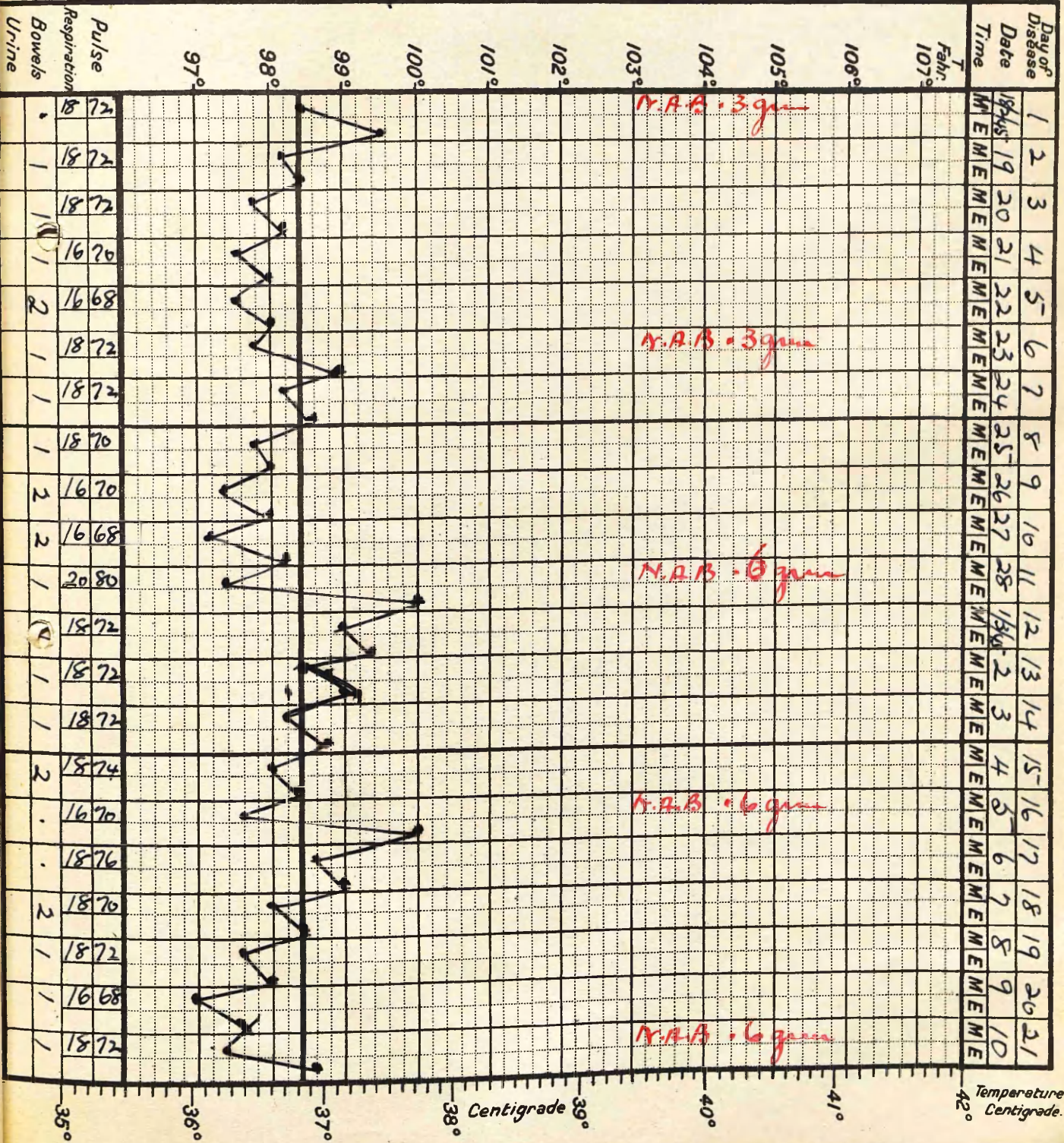
Age 38 years

Diet _____
No. in Case Book _____

NOTES

When treated
bleeding night
sears, with
many break down
at day time

Result
RELIEVED



CASE 39

DATE OF ADMISSION

18th FEBRUARY, 1945

DISEASE

Yaws Ulcer

Name

AJUA Bayo (F)
of MABLU

Age

38 years

Diet

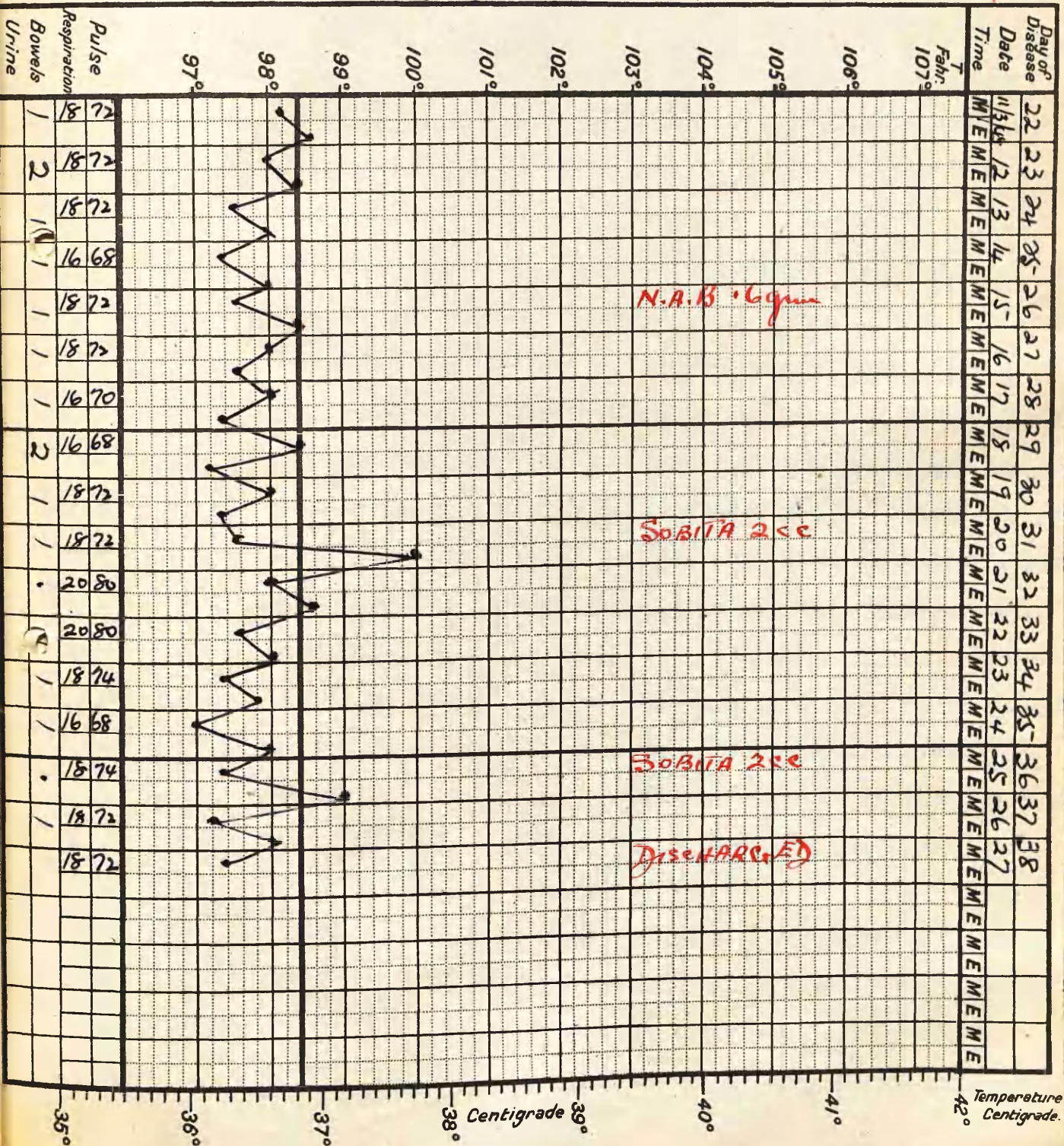
No. in Case Book

NOTES

Wear headband
leaving only
ears exposed
break down
at any time

Result

RELIEVED



CASE 40

EBOT ASHU
of AGBO KUM
MAMFE, CAMEROONS.

28th January, 1944
Female. 14 years

Occupation:-

Farm-hand.

Complaint:-

The patient complains of ulcers on the right and left legs, arm and shoulder.

Duration:-

2 months.

History of Present Condition:-

The patient has not been enjoying a good health since nine years ago. One malady after another is attributed to the cause of the ill-health. Three months ago a sore appeared on the right leg without a cause, treated, healed but broke down again. A month after sores occurred on the left leg, and two weeks after sores appeared on the arm and shoulder.

Past History:

The patient had a very severe fever (malarial fever) followed by enormously enlarged spleen at the age of 3 years. Pertussis for 2 months occurred at the age of 5 years. When she was 6 years of age she was attacked by yaws.

Family History:-

The father and mother of the patient are alive and well. Both parents had yaws during childhood. Her two elder brothers suffered from yaws at the age of 2 years and 4 years respectively. Her three sisters had attacks of yaws also.

Case 40 (comtd)

Yaws affection is said to be common in the family.

General Condition:-

The patient is very slender and underfed, but there is no crawler or scabies on the skin. There is no oedema of the legs, no jaundice or icteric tint of the conjunctivae.

The spleen is enlarged.

Temperature 98 F. Pulse 76. Respiration 18.

Examination:-

The patient is sick and appears not to be properly cared for. The hairs and scalp, however, have no lesions. There are healed yaws marks and scars scattered all over the body. Some scars are black while others are of light brown in colour. There are sores which are the coalesce of healed yaws spots on the right and left legs (lower portions), the arm (middle portion), and the left shoulder. The small joints are tender and the eminences of the palms of the hands are atrophied. The anterior aspects of the tibiae are very tender.

Heart	} There is nothing abnormal found.
Circulatory System	
Pulmonary System	
Gastro-Intestinal System	
Nervous System	
Urinary System	

Diagnosis:-

Yaws Ulcers.

Result:-

Cured.

CASE 410

DATE OF ADMISSION
28th JANUARY, 1944

DISEASE
Yaws Ulcers

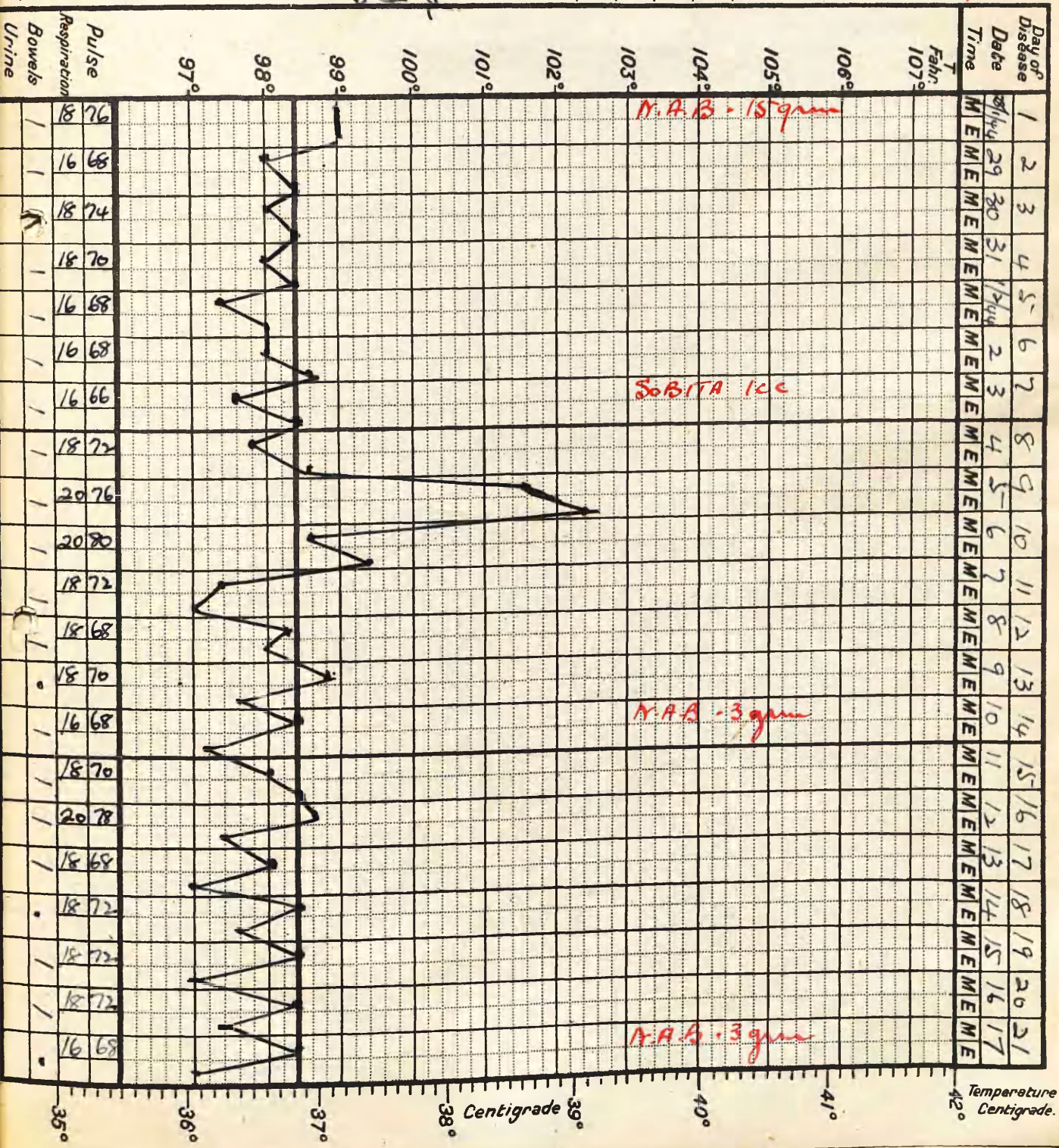
Name
EBOI ASHU (F)
of Assam Kum

Age
14 years

Diet
No. in Case Book

NOTES
Yaws Ulcers completely healed leaving healthy scars on the spots

Result
CURED



CASE 440

DATE OF ADMISSION
28th JANUARY 1944

DISEASE
Yaws Ulcers

Name
E. Bot Ashu (F)
of Asabor Kum

Age
14 years

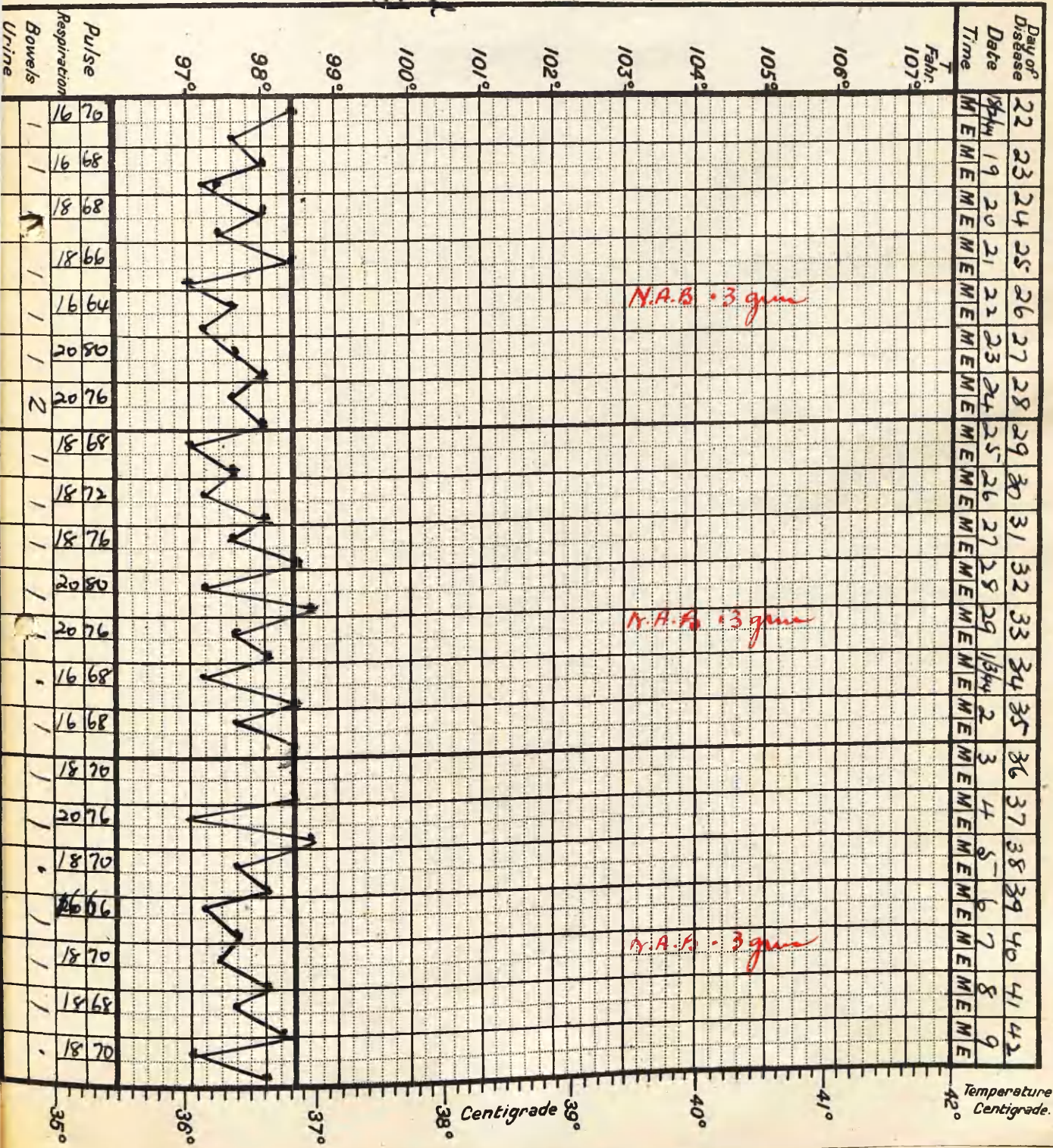
Diet

No. in Case Book

NOTES

Yaws ulcers completely healed leaving healthy scars on the spots

Result
CURED



1944 September 15
Date 65 years



Fig. 27 - Gangosa (Subacute Stage)
(Case 41)

CASE 41

IKANG NTUI of BANYANG,
MAMFE, CAMEROONS.

20th September, 1943
Male. 66 years.

Occupation:-

Farmer.

Complaint:-

The patient complains of speaking through the nose and difficulty in breathing. Liquid food and water often run out of the nose during eating or drinking. Of late there is pain in the nose and throat.

Duration:-

10 years.

History of Present Condition:-

The patient had enjoyed a fairly good health up to the age of 45 years when the nose affection started. There was no pain or any inconvenience. The septum of the nose became eroded and the floor of the nostrils with the hard palate was gradually eaten away. After a few years the erosion was arrested spontaneously without any treatment and healing took place. There was no reform, however, of the tissues eroded. About ten year ago the patient felt some irritation and pain in the hard palate when taking a solid food. The condition disappeared after a few weeks. One month ago there was pain in the throat and nose, and speaking was through the nose with difficulty in breathing. A few days after he noticed some of his food coming out through the nose during meals, and water flowed out through the nose during the act of drinking.

Case 41(contd)

Past History:-

The patient had varicella when he was 15 years of age. There was a bad cough with pain in the side(pleuro-bronchitis) when he was 18 years of age. At the age of 22 years old he suffered from yaws. He has never suffered from any form of "woman sickness"(venereal disease).

Family History:-

The patient is married and his wife is alive and well. There are eight children who are alive and well, and have never had an attack of yaws which is common in the family.

General Condition:-

The patient is emaciated and is anaemic with slight jaundice and icteric tint of the conjunctivae. The muscles are flabby and progress is slow, but there is no swelling of the joints, tenderness or oedema.

Temperature 98.2°F. Pulse 76. Respiration 20.

Examination:-

The skin of the patient is slack and his grip is weak. He gets tired quickly and feels it a great bother to be questioned. There are marks and scars on the body. He speaks through the nose, the septum of the nose has been destroyed, and the nose cavity is eroded. In the antra of the nostrils there is a hole which communicates the oral cavity. The hard and soft palate are partially destroyed. Some parts of the skin of the patient feel leathery and the legs are deeply pigmented. The lower portions of the legs

Case 41(contd)

and upper portions of the feet present the appearance of the albinos.

The anterior portions of the tibiae are thickened and the skin is fixed to the bones. The glands of the neck and groins are enlarged.

Heart:-

There is no visible impulse in the cardiac area. The apex beat is just visible in the 6th intercostal space within the mammary line. A systolic murmur which is well conducted to the axilla is heard in the mitral area. There is a blowing diastolic sound in the aortic area. The sound is localised.

There is no abnormal sound heard in the pulmonic area.

Circulatory System	} Nothing abnormal is found.
Pulmonary System	
Gastro-Intestinal System	
Nervous System	
Urinary System	

Diagnosis:

Gangosa(Subacute Stage)

Result:-

The ulceration healed, but the septum of the nose and soft palate remained partially raw.

CASE 41

DATE OF ADMISSION
25th SEPTEMBER 1943

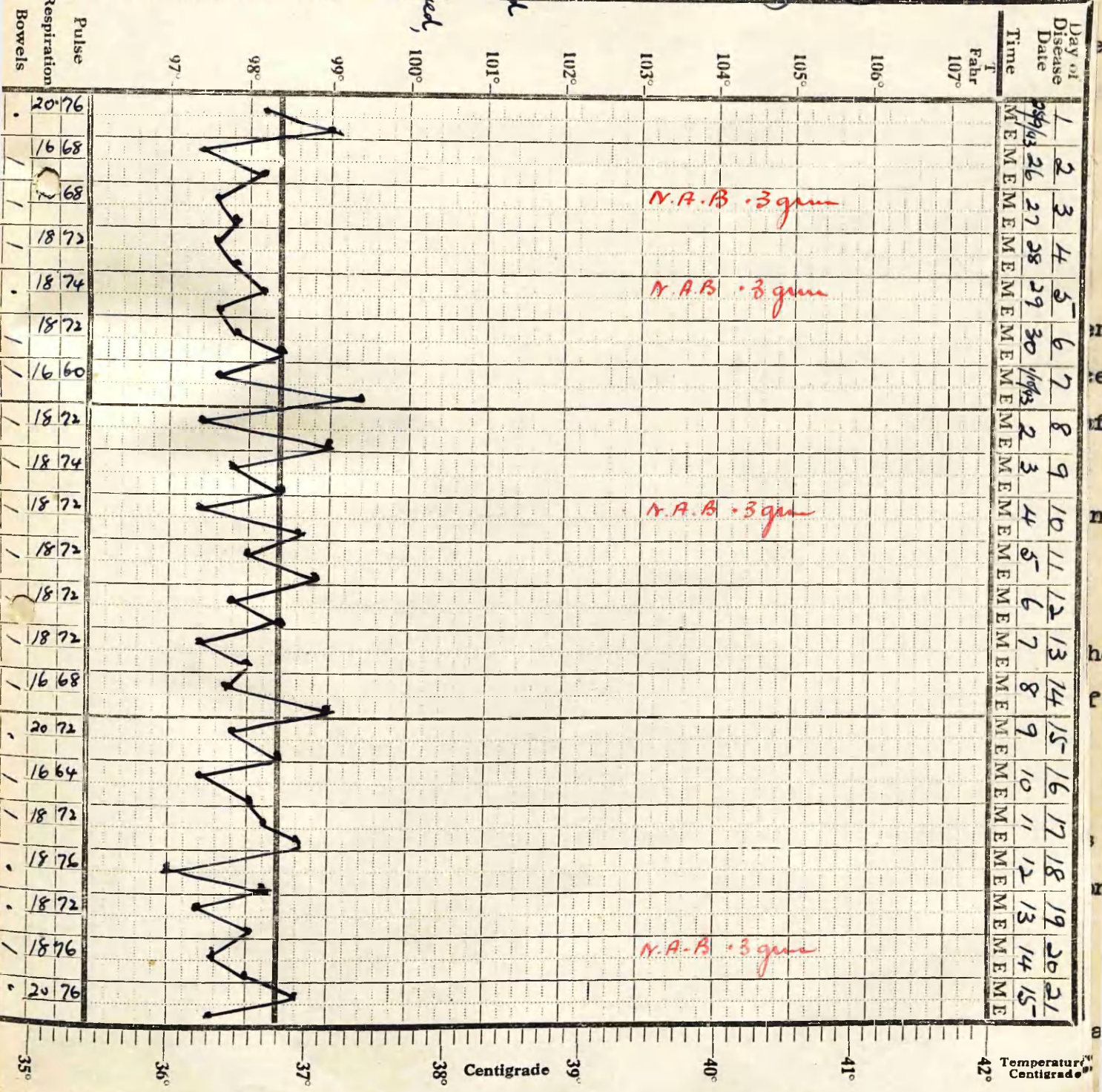
DISEASE
GRANULOSA
(SUBACUTE STAGE)

Name { KRANS NUI (M)
of BAN YANTS
 Age 6 1/2 years

Diet _____
 No. in Case Book _____

NOTES
 Ulceration healed
 but the optimum
 of the nose and
 soft palate destroyed,
 remounted for
 healthy nose.

Result: IMPROVED



CASE 41

DATE OF ADMISSION

25th SEPTEMBER, 1943

DISEASE

KRANGGOSA

(SURABAYE STRAITS)

Name

KRANG NTU, (M)

of BANYANG

Age

66 years

Diet

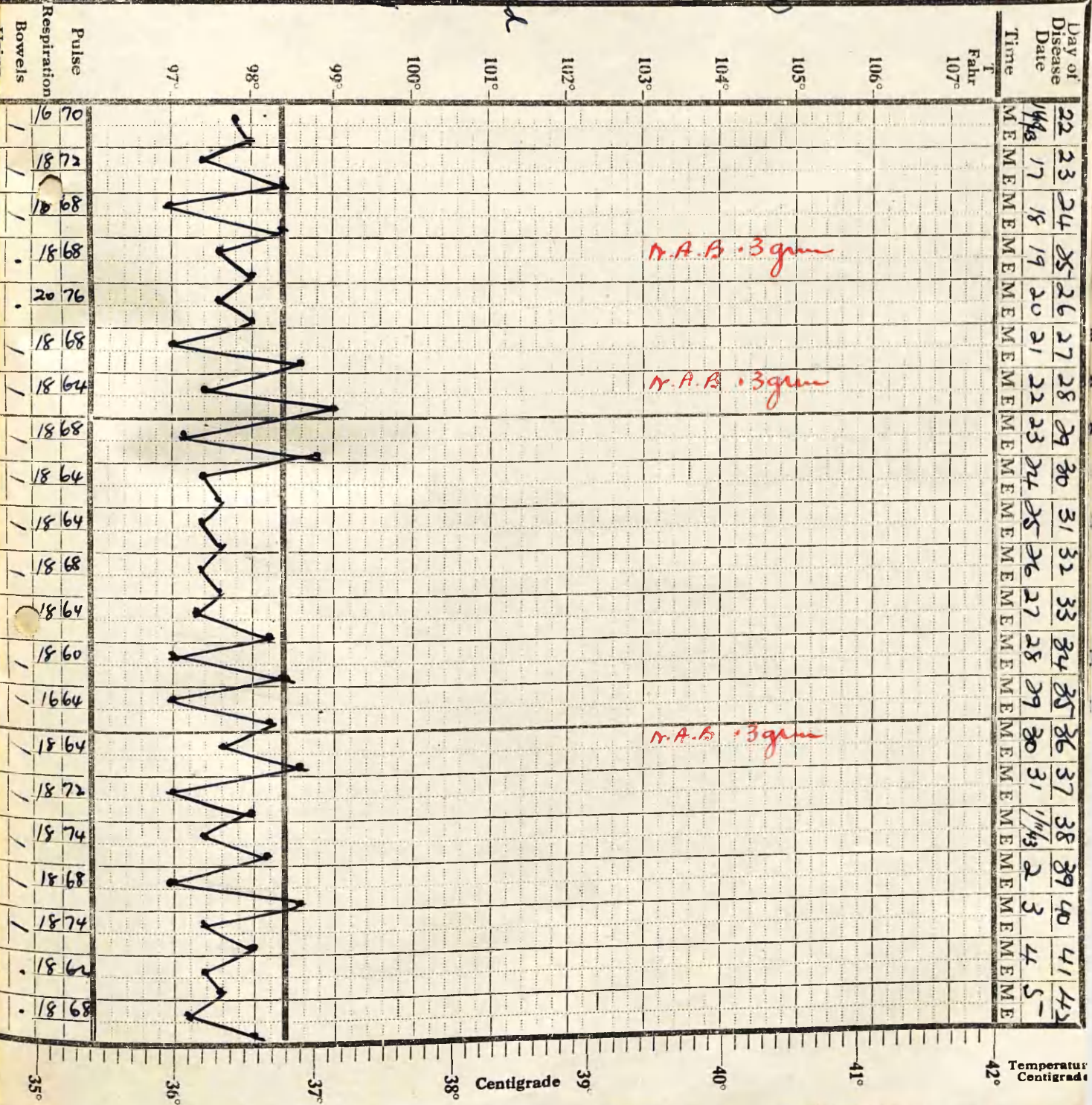
No. in Case Book

NOTES

Metastatic head
but the septum of
the nose and soft
palate destroyed,
remained partial
now.

Result

IMPROVED



CASE 41

DATE OF ADMISSION

25th SEPTEMBER, 1943

DISEASE

GRANULOSA

SUBACUTE STAGE

Name

KANG NUI (17)

Age

66 years

Diet

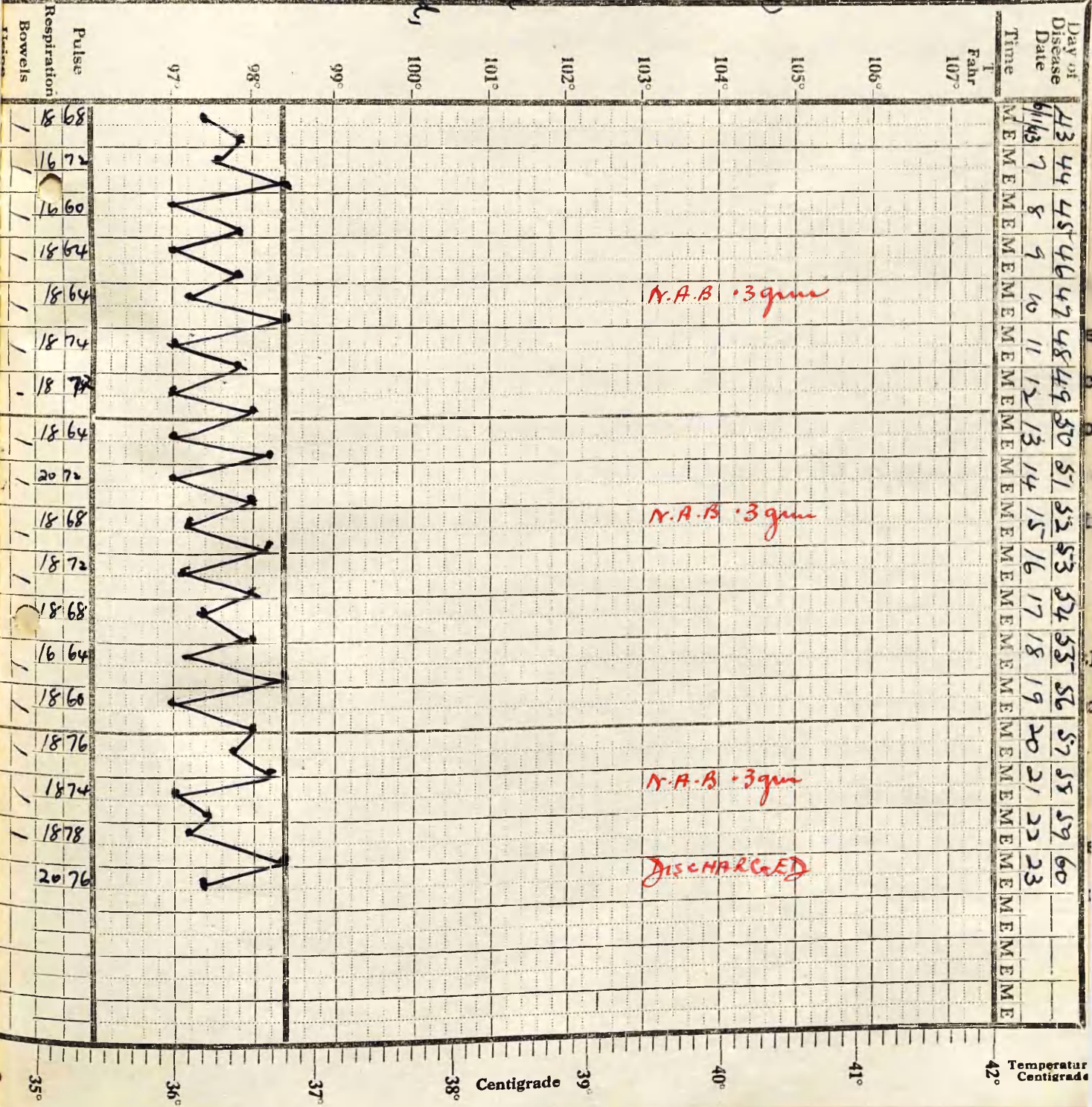
No. in Case Book

NOTES

Meratikon heales but the sebum of the nose and soft palate desqued, remained for a while more.

Result

IMPROVED



Temperature Centigrade

Centigrade

CASE 42

SAM SUKUA of BANGWA,
MAMFE, CAMEROONS.

25th September, 1943
Male. 24 years

Occupation:-

Goods Retailer.

Complaint:-

The patient complains of sore on the soft part of the nose. The sore has been destroying the nose gradually and extending into the front part of the throat.

Duration:-

6 months.

History of Present Condition:-

The patient enjoyed a good health until six months ago when he noticed a sore on the tip of the nose. The sore advanced inwards and destroyed the septum of the nose. In course of three months all the soft portion of the nose had been destroyed. The sore continued its destruction extending into the mouth and hard portion of the nose.

Past History:-

The patient was born in the French Mandated Territory of the Cameroons and was brought to Bangwa when he was 10 years of age. He had "big crawcraw" (yaws) when he was very young - about 5 years of age. He had suffered from measles, pneumonia and malaria. For three days when he was 18 years of age, he passed blood in the urine. He has never had sore on the penis or lips, and has never contracted gonorrhoea.

Family History:-

The patient is unmarried. The father and mother are dead, and

Case 42(contd)

the cause of death is unknown.

General Condition:-

The patient is healthy and well developed, and he is not anaemic. There is no jaundice or icteric tint of the conjunctivae. The legs which are painful are tender, but there is no swelling of the legs or joints. The bone of the forehead is thickened.

Temperature 99°F. Pulse 88. Respiration 20.

Examination:-

The hairs are badly kept and the condition of the mouth is bad. The anterior portion of the nose with the septum has been eaten away. The nasal bone is partially destroyed, but the alae of the nose are partly reserved. The anterior roof of the mouth, uvula and fauces are still intact. There is an opening on the soft portion of the palate through which the pharynx is partly visible from the exterior. Deep pigmentation is on the trunk of the patient.

Heart)

Circulatory System)

Pulmonary System)

Gastro-Intestinal System) Nothing abnormal is detected.

Nervous System)

Urinary System)

Case 42(contd)

Diagnosis:-

Gangosa(Acute Stage)

Result:-

Ulceration of the nose and palate ceased with definite healing.



Fig.26- Gangosa(Ulcerating Stage)
(Case 42)

CASE 42

DATE OF ADMISSION

25th SEPTEMBER, 1943

DISEASE

GRANULOSA

(ULCERATIVE STAGE)

Name

SAM SUKVA (M)

of BANGLA

Age

24 years

Sex

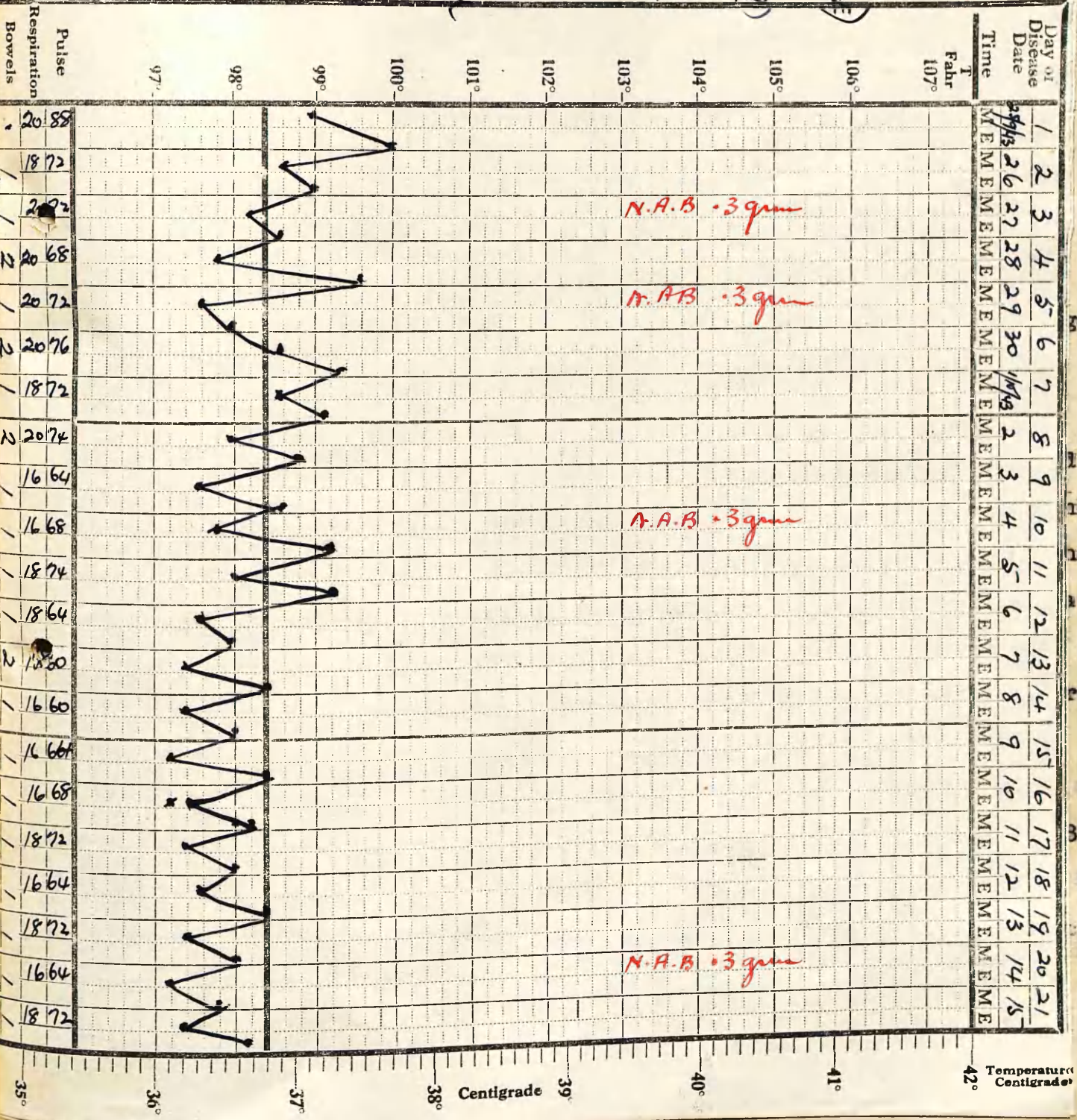
No. in Case Book

NOTES

Mention of
the more severe
with definite
healing.

Result

CURED



CASE 42

DATE OF ADMISSION

25th SEPTEMBER, 1943

DISEASE

BRANCO SA

(ULCERATING STAGE)

Name

SAM SUKVA (M)
of BANARMA

Age

24 years

Diet

No. in Case Book

NOTES

Mucation of the
nose ceased
with definite
healing

Result

CURED

Day of Disease Date	Time	Fahr	Pulse	Respiration	Bowels	Notes
22	MEM	104	1872	2	2	
23	MEM	104	1670	2	2	
24	MEM	104	2500	1	1	
25	MEM	104	1864	2	2	N.A.B. 3gm
26	MEM	104	1868	1	1	
27	MEM	104	1864	2	2	
28	MEM	104	1664	2	2	N.A.B. 3gm
29	MEM	104	1868	2	2	
30	MEM	104	1868	1	1	
31	MEM	104	2068	1	1	
32	MEM	104	2080	1	1	
33	MEM	104	1680	1	1	
34	MEM	104	1872	1	1	
35	MEM	104	1860	1	1	DISCHARGED



Day of Disease Date

Time

Fahr

Pulse

Respiration

Bowels

106°

105°

104°

103°

102°

101°

100°

99°

98°

97°

42°

41°

40°

39°

38°

37°

36°

35°

Temperature Centigrade

CASE 43

19th September, 1939
Female. 41 years
Married. Children 4.

AWA TABI of MBO,
MAMFE, CAMEROONS.

Occupation:-

Housewife.

Complaint:-

The patient complains of food and water passing out of the nose during eating and drinking.

Duration:-

8 years.

History of Present Condition:-

The patient had a fairly good health until twelve years ago when she had a bad sore on the soft part of the nose. The sore destroyed that portion of the nose extending inwards. Since the destruction of the parts she often had a "funny feeling" in the mouth whenever she took food or drank water. Three years after the sore healed but not until the nose and its inner parts had been destroyed. Eight years ago patient observed that the soft part of the palate was becoming thinner and thinner, and eventually a hole appeared as an entrance from the nose to the mouth cavity.

Past History:-

The patient suffered from yaws when she was young (about 18 years of age). She had been sick of bacillary dysentery, a long standing cough with sever pain on the right side on coughing. There is no history of venereal disease.

Case 43(contd)

Family History:-

The patient is married and her husband is alive and well. There are four issues who enjoy a good health. The patient's mother who had an attack of yaws during her early days, had a badly destroyed nose and fissures on the soles of the feet. She died a few years ago. The father is alive and enjoys a good health.

General Condition:-

The patient is lean but sound in health and mind. The conjunctivæ are very white and the inner aspects of the lower eyelids show deficiency of blood. There is no jaundice, oedema of the legs, or icteric tint of the conjunctivæ.

Temperature 97.8^oF. Pulse 68. Respiration 16.

Examination:-

The patient is small in stature with a fairly long neck which has no visible pulsating veins. There are no marks on the face, but dark and white spots are scattered all over the body. There are scars on the lower extremities including the buttocks. The anterior portion of the nose has been destroyed together with the septum. The soft palate has a big opening which communicates the nostrils, but the tissues around have healed leaving scars. The soles of the feet have irregular cracks.

Case 43(contd)

Pulmonary System:-

The ribs are unduly prominent and the supra-clavicular fossae are depressed, but no cavity is detected on percussion. The chest wall is resonant on percussion, and the vocal fremitus is easily conducted to the hands placed on the chest wall. On auscultation there are adventitious sounds heard scattered irregularly all over the chest. The sounds are mostly râles and rhonchi.

Heart

Circulatory System

Gastro-Intestinal System

Nervous System

Urinary System

Nothing abnormal is detected.

Diagnosis:-

Chronic Gangosa

Result:-

Unsatisfactory.

CASE 43

DATE OF ADMISSION

19th SEPTEMBER, 1939

DISEASE

CHRONIC STANSTONIA

Name

Anna Trabi (F)
of M30

Age

41 years

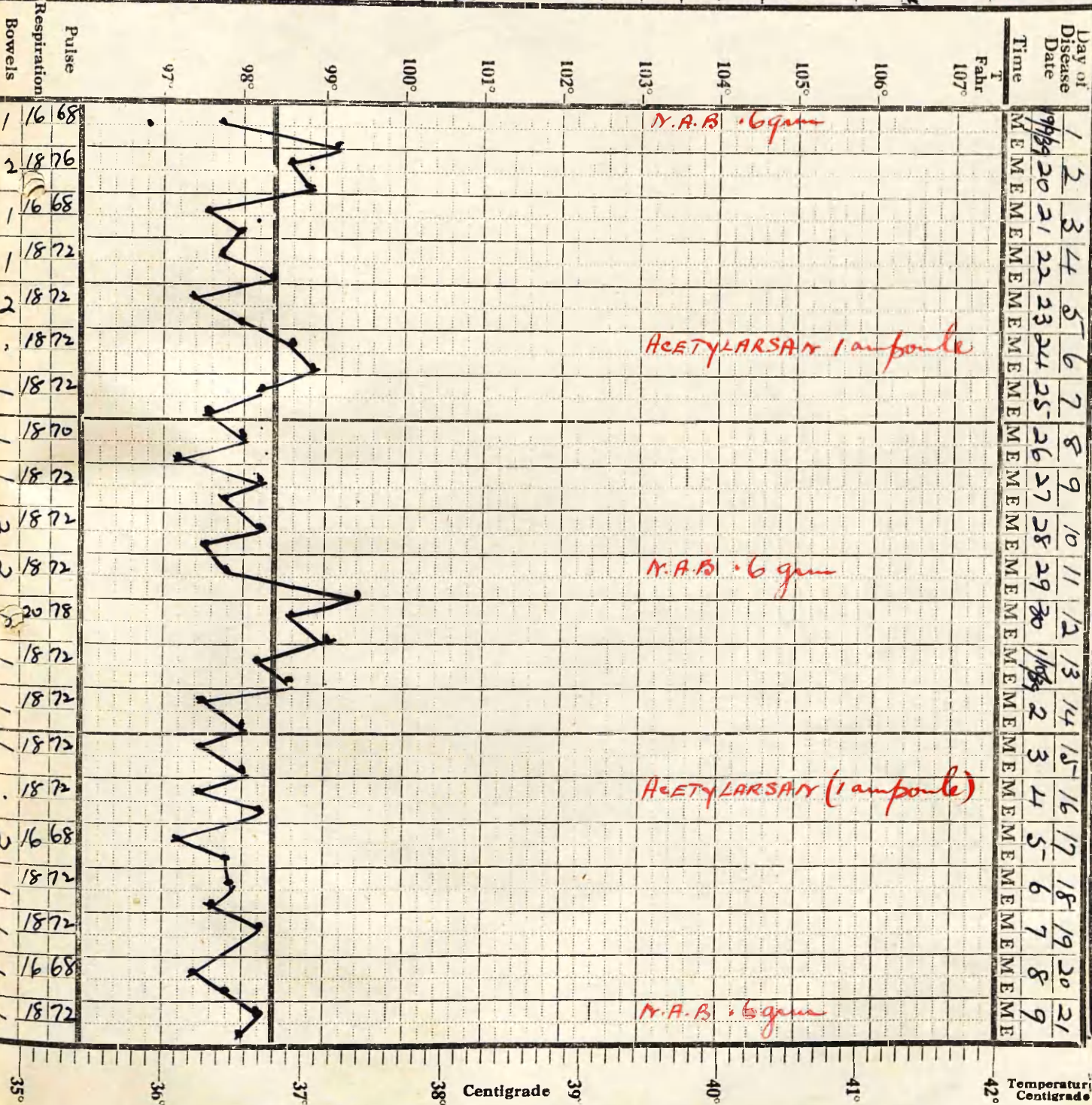
Diet

No. in Case Book

NOTES
No feebing
or extra seay
formation, but
the patient said
"I am better".

Result

UNSATISFACTORY



CASE 43

DATE OF ADMISSION

1945 SEPTEMBER 1939

DISEASE

CHRONIC KANGOSH

Name

Arataki (F)
of M130

Age

41 years

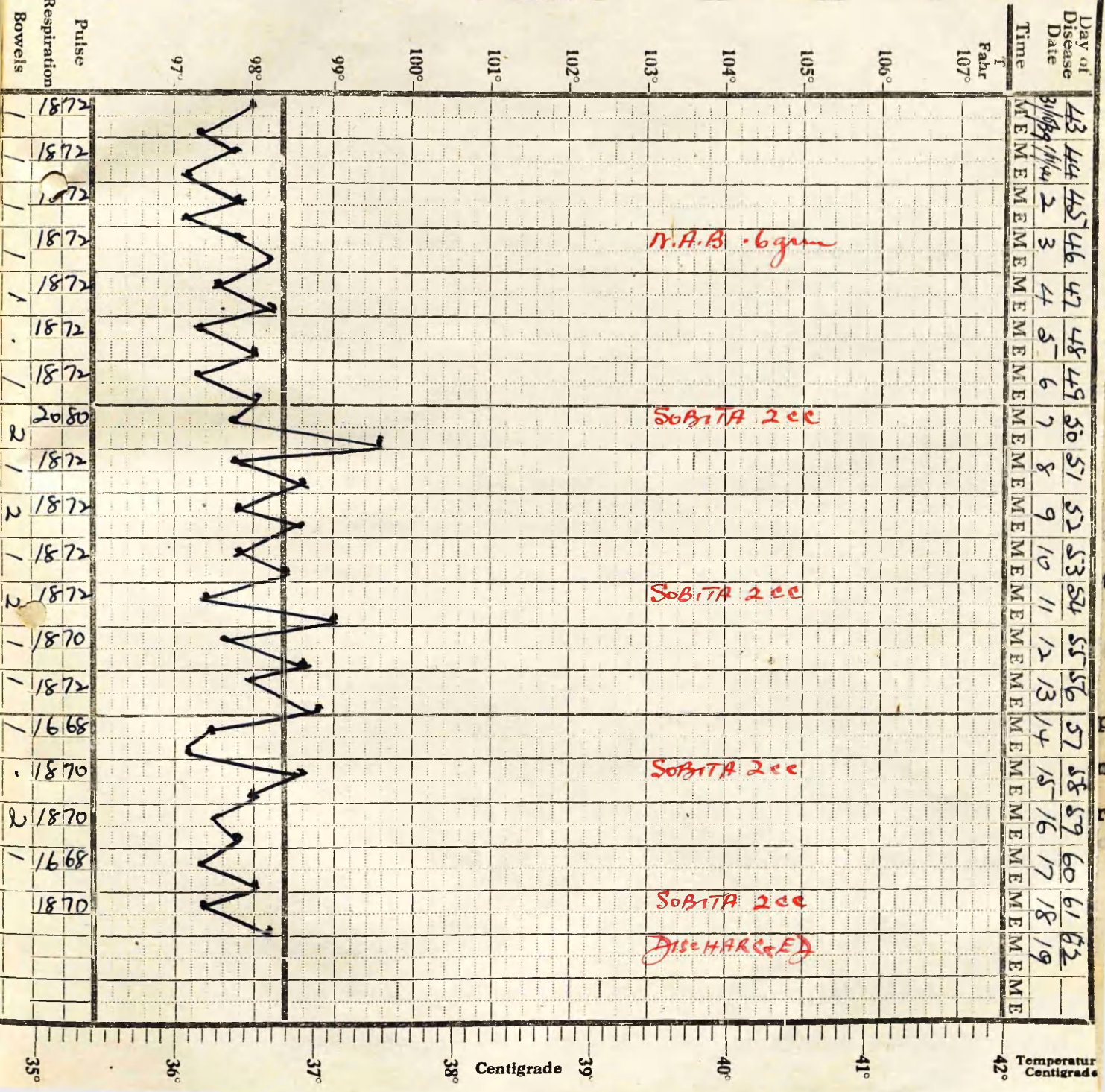
Diet

No. in Case Book

NOTES
No healing
on extra sear
formation, but
the patient's acid
is a better.

Result

UNSATISFACTORY



CASE 44

MBA FOCHATI
of MUNDANI,
MAMFE, CAMEROONS.

12th May, 1943
Female. 40 years
Married. Children 5.

Occupation:-

Market Woman

Complaint:-

The patient complains of sore inside the nose.

Duration:-

7 years.

History of Present Condition:-

Prior to her 31st year patient had enjoyed a good health. About nine years ago she observed that discharges from her nostrils had bad odour occasionally. Much importance was not attached to the symptoms as there was no other abnormality and the smell was at long intervals. Eight years ago foul discharges began to escape frequently from the nose and so therefore she consulted a medicine man. One year after despite the treatment there was a perforation into the mouth cavity.

Past History:-

The patient had suffered from malaria, arthritis and dyspepsia. Fifteen years ago she had yaws lesions, first a solitary one on the forehead and a few months after yaws lesions scattered irregularly on the body. There is no history of abortion, miscarriage or venereal disease.

Family History:-

The patient is married and the husband is alive and enjoys a good health. The children but one who is suffering from

Case 44 (contd)

pertussis, are quite well, happy and hearty.

There is no tendency to any particular disease in the family.

General Condition:-

The patient is emaciated and of a very rough skin which is well marked on the palms of the hands. There is a slight icteric tint of the conjunctivae, but no oedema of the legs or feet.

Temperature 98.2 F. Pulse 72. Respiration 18.

Examination:-

At first sight the nose presents simply the appearance of an extreme flatness; but on a close examination the anterior portion of the nose is found to have collapsed, and when raised the septum is found wanting. There is a hole on the floor of the nose cavity. The outline of the nose is irregular and the edges are raw. The odour from the nostrils and mouth is unpleasant.

Heart:-

There is no bulging over the praecordia or over the aortic region. The apex beat which is felt on palpation but not visible, is in the 5th intercostal space within the mammary line. The heart is not enlarged outwards or inwards. There are no adventitious sounds in the mitral or aortic area, but the second sound in the pulmonic area is accentuated.

Case 44(contd)

Circulatory System)

Pulmonary System)

Gastro-Intestinal System) Nothing abnormal is detected.

Nervous System)

Urinary System)

Diagnosis:-

Gangosa.

Result:-

Ulceration ceased with the formation of scars.



Fig.28 - Gangosa
showing the destruction of
the septum and the roof of
the mouth (Case 44)

CASE 44

DATE OF ADMISSION

12th May, 1943

DISEASE

GRANDIOSA

Name

MBA FOCHATI (A)
of MUMBAI

Age

110 years

Diet

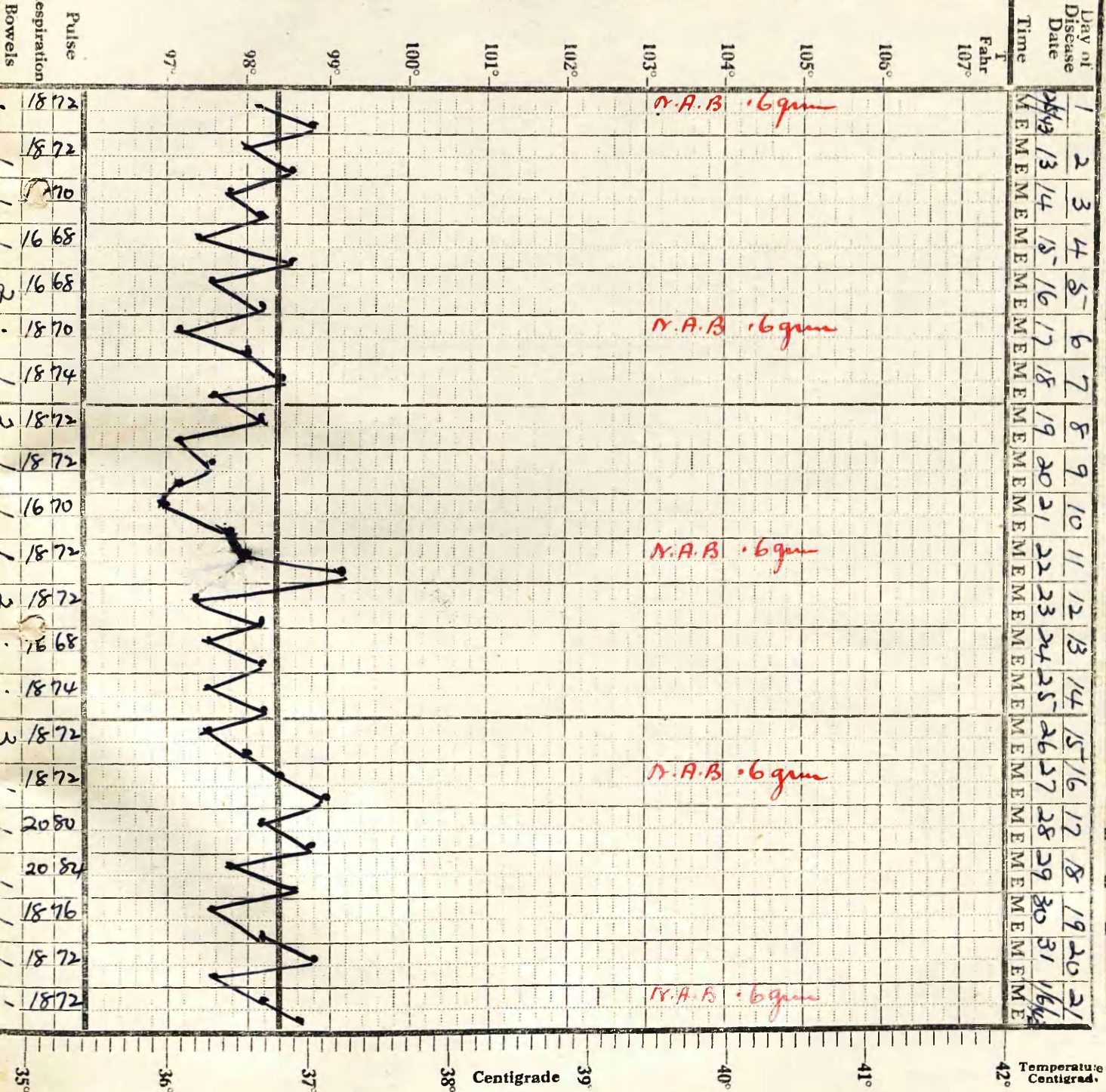
No. in Case Book

NOTES

When you cease with the formation of organs round the opening

Result

RELIEVED



CASE 44

DATE OF ADMISSION

12th May, 1943

DISEASE

GRANULOSA

Name

MBA FOZHATI

of MURRAY

Age

46 years

Diet

No. in Case Book

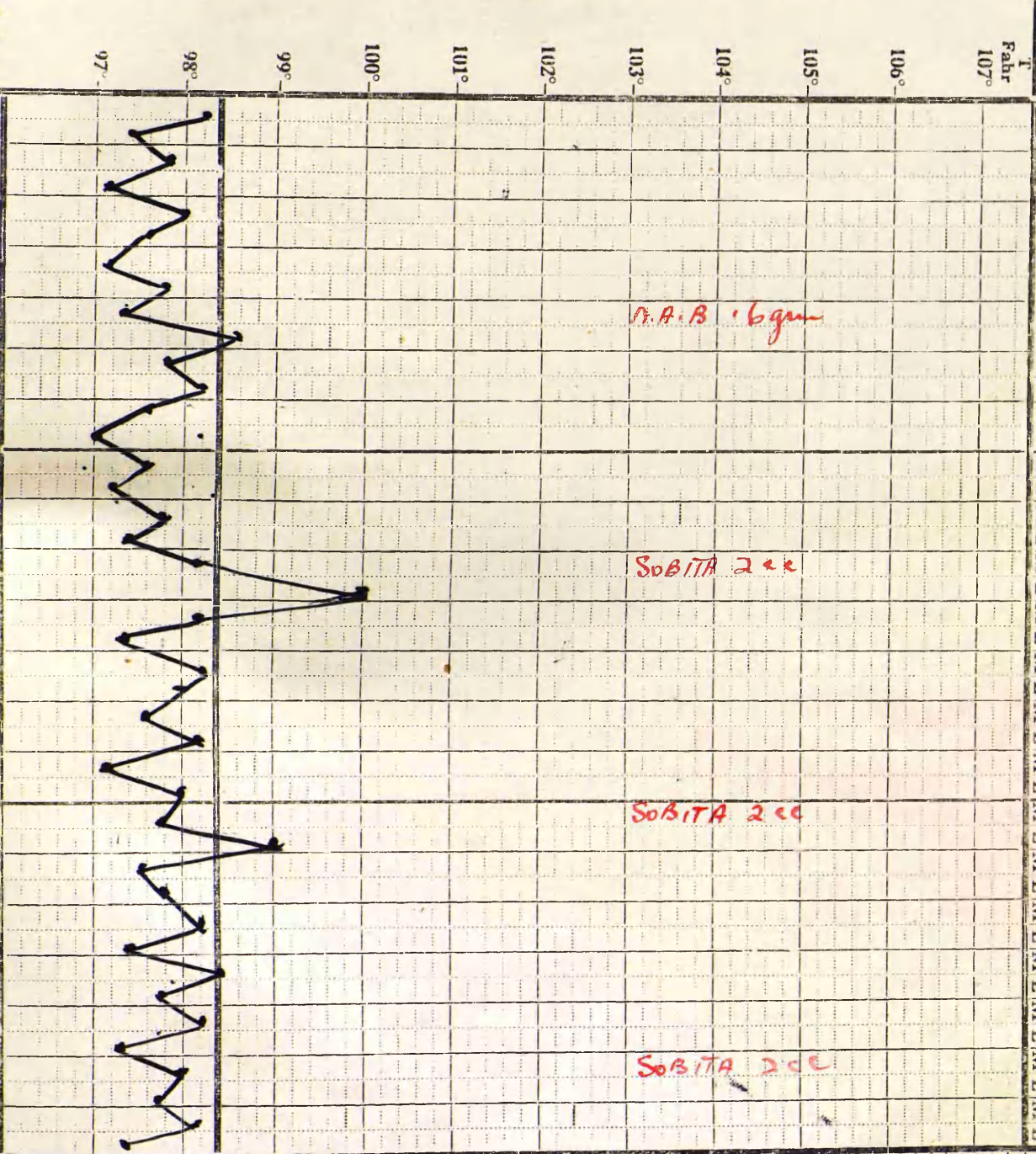
NOTES

Mercurion ceases with the formation of second round the opening.

Result

RELIEVED

Day of Disease Date	Time	Fahr
22	MEM	106°
23	MEM	106°
24	MEM	106°
25	MEM	106°
26	MEM	106°
27	MEM	106°
28	MEM	106°
29	MEM	106°
30	MEM	106°
31	MEM	106°
32	MEM	106°
33	MEM	106°
34	MEM	106°
35	MEM	106°
36	MEM	106°
37	MEM	106°
38	MEM	106°
39	MEM	106°
40	MEM	106°
41	MEM	106°
42	MEM	106°



Pulse	Respiration	Bowels
1872	/	/
1872	/	/
1872	/	/
1670	/	/
1874	/	/
1872	2	/
1668	2	/
1872	/	/
1872	/	/
1872	/	/
1874	/	/
1872	/	/
1872	/	/
1668	/	/
1872	2	/
1872	/	/
1870	/	/
1872	/	/
1872	/	/
1670	/	/

Temperature Centigrade

Centigrade

CASE 444

DATE OF ADMISSION

12th May, 1943

DISEASE

GRANULOSA

Name

Mrs A FUCHATI (F)
of Murdhar 1

Age

40 years

Sex

No. in Case Book

NOTES

Microphobic reaction with the formation of siderin in the opening

Result:

RELIEVED

Day of Discharge	Time	Fahr	107°	106°	105°	104°	103°	102°	101°	100°	99°	98°	97°
43													
44													
45													
46													
47													
48													
49													
50													
51													
52													
53													
54													
55													
56													
57													

Sorbita 2 cc

Sorbita 2 cc

Sorbita 2 cc

DISCHARGED



Pulse	Respiration	Bowels
80		
72		
70		
72		
72		
68		
70		
72		
74		
72		
72		
72		
74		
72		
72		

Temperature Centigrade 42° 41° 40° 39° 38° Centigrade 37° 36° 35°

CASE 45

ASU EKON
of OKURIKONG,
MAMFE, CAMEROONS.

15th August, 1943
Female. 56 years.

Occupation:-

Petty Trader.

Complaint:-

The patient complains of an inability to speak properly.

Duration:-

6 years.

History of Present Condition:-

Ten years ago the patient felt pain in the palate when she took food. The pain gradually increased until one day she felt by means of her tongue an eroded area with an opening which communicated the nose, the septum of which had been destroyed. Later the soft portion of the nose was destroyed. Later the soft portion of the nose was destroyed and there was a free communication of the nasal and oral cavities. The taking of food and water became a problem and speech was not clear. The external nasal erosion was healed but that of the palate persisted.

Past History:-

The patient had chicken pox at the age of 15 years. She suffered from pneumonia at the age of 18 years. There was an attack of yaws during childhood. The yaws lesions were said to be few and only on the extremities and neck. There is no history of a venereal disease.

Family History:-

The patient is unmarried and the parents are dead.

Case 45(contd)

There is no tendency to any particular disease in the family.

General Condition:-

The patient is greatly emaciated and anaemic. She is dirty in her habits. There is no jaundice, icteric tint of the conjunctivae, but there is oedema of the legs and ankles. Temperature 97.8^oF. Pulse 70. Respiration 16.

Examination:-

The patient's complexion is black and mixed with brown, and there are skin lesions on the different parts of the body. Old yaws marks and scars are found on the face, trunk and the extremities. There are lice in the hairs of the head and of the pubic region, and the scalp has eruptions and bleeding points. The glands of the neck and groins are enlarged. The soft part of the nose has been destroyed with some portions of the inner parts of the cheeks. The upper lip has been entirely destroyed, and the soft palate has followed the same fate. There is a free communication between the nasal and oral cavities and the tongue is visible through the opening.

Heart	} Nothing abnormal is detected.
Circulatory System	
Pulmonary System	
Gastro-Intestinal System	
Nervous System	
Urinary System	

Case 45(contd)

Diagnosis:-

Gangosa.

Result:-

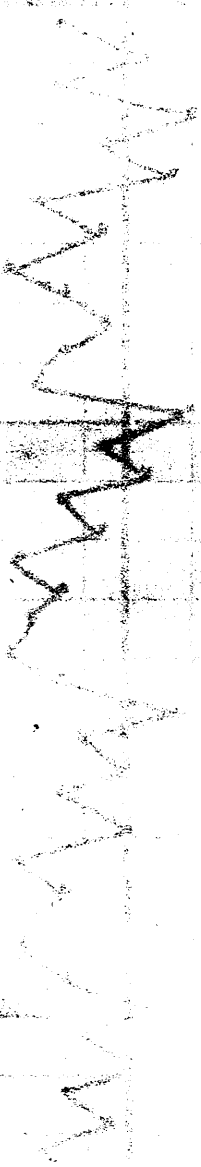
There is a great relief and comfort for the destruction of the palate ceased.

D

H

662

572



CASE 45

DATE OF ADMISSION

15th AUGUST, 1943

DISEASE

SUBACUTE SPANIOSA

Name

ASU EKON (F)

of OKIRIKANG

Age

56 years

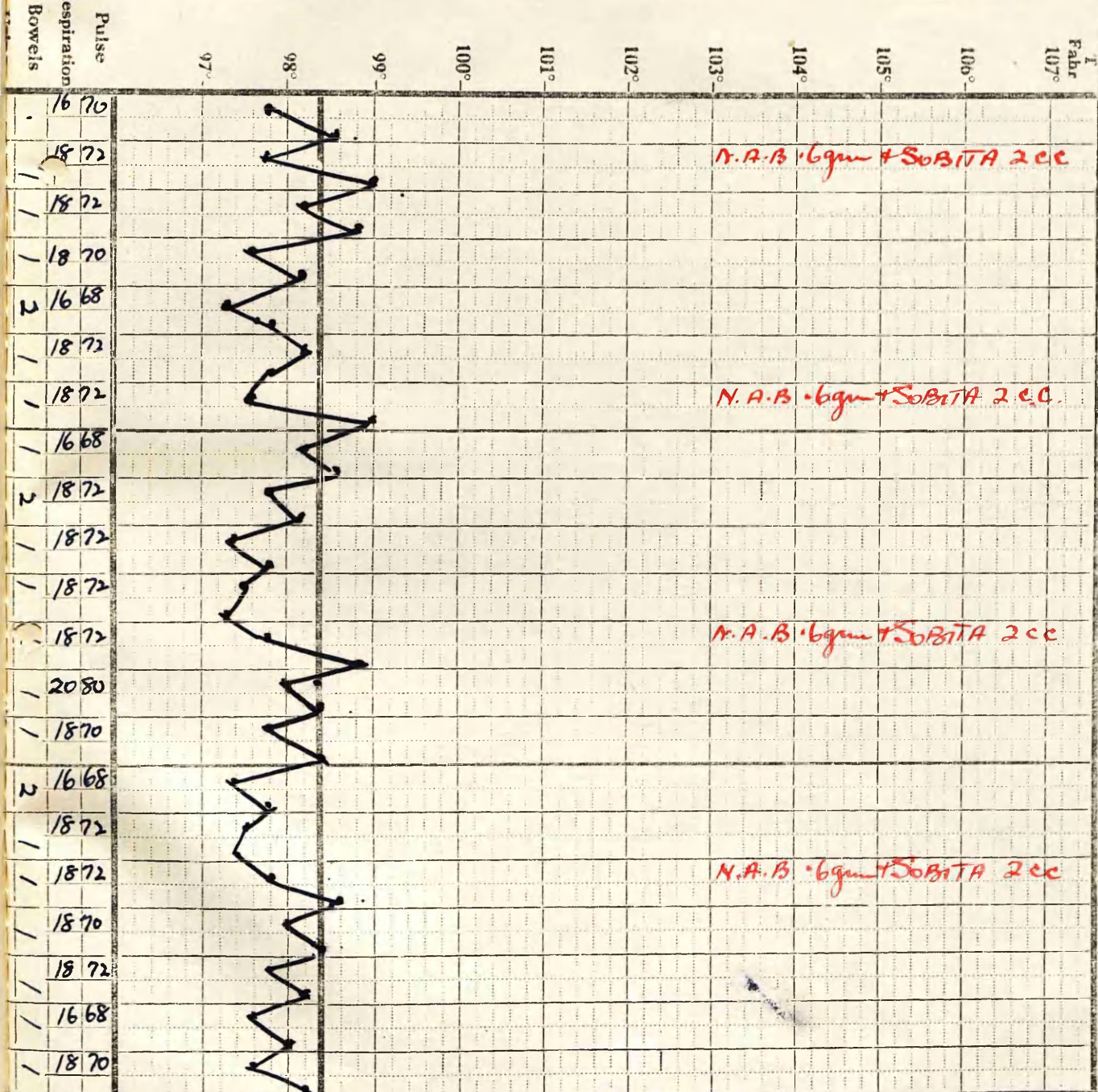
Diet

No. in Case Book

NOTES

Abolishment of the palate ceased

Day of Disease Date	Time	Fahr	Pulse	Respiration	Bowels
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
1/9/43					
2					
3					
4					



Result RELIEVED

Temperature Centigrade

Centigrade

CASE 415

DATE OF ADMISSION

15th AUGUST 1943

DISEASE

Subacute Typhoid

Name

Asu EKON (F)
of OKURIKANG

Age

56 years

Diet

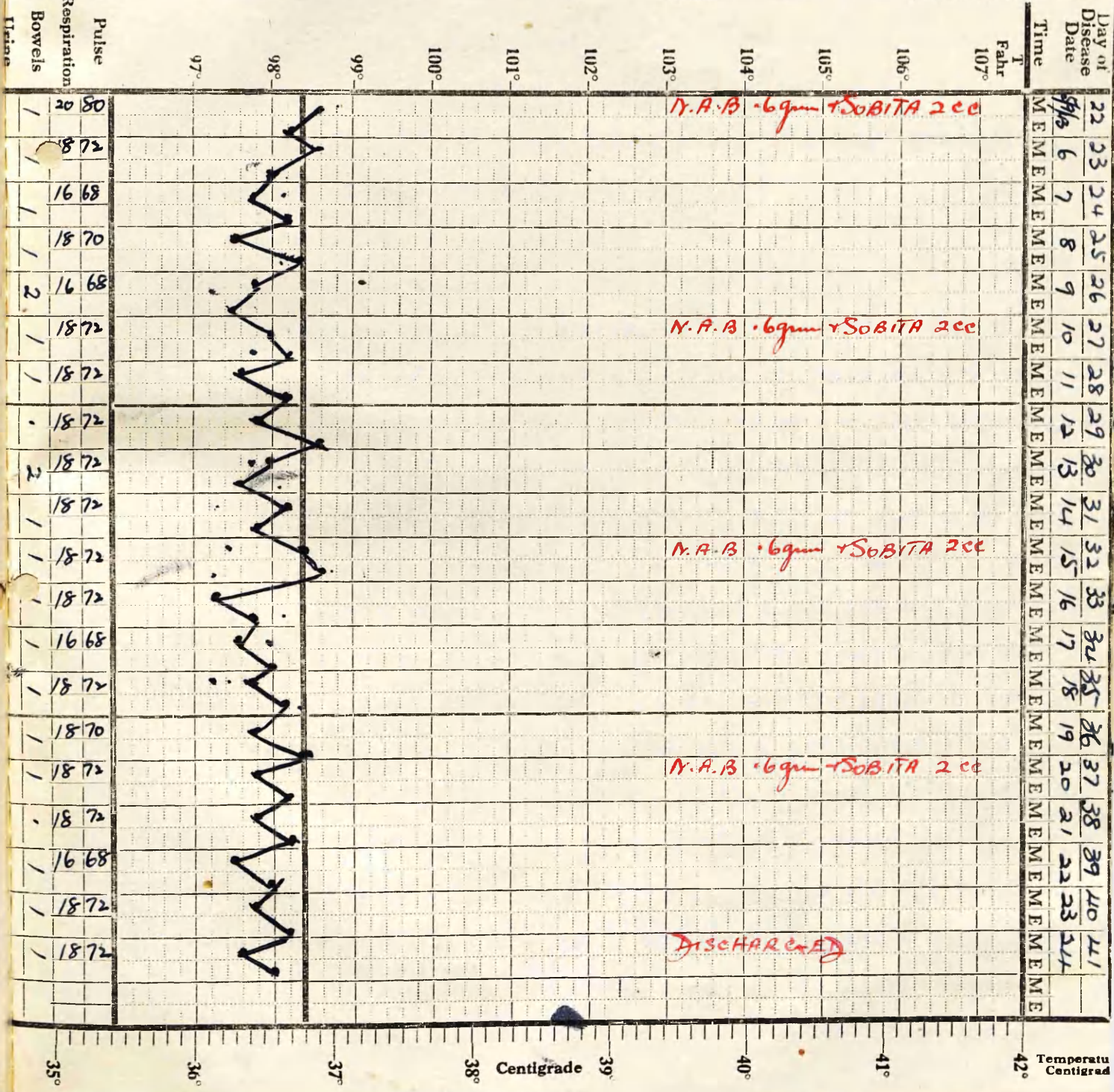
No. in Case Book

NOTES

Restoration of
the palate received.

Result

RELIEVED



YAWS in a EUROPEAN MISSIONARY

CASE 46. (SPECIAL)

15th February, 1946
Male. 41 years.

FATHER ANTHONY VAN DER VLUGT,
CATHOLIC MISSION,
OKOYONG, MAMEE, CAMEROONS.

Occupation:-

Roman Catholic Priest.

Complaint:-

The patient complains of scaly eruptions and peeling of the fingers and toes.

Duration:-

8 years.

History of Present Condition:-

The patient enjoyed a good health prior to 1934 when he had "a big tropical wound" in front of the left leg which did not heal until a few injections of N.A.B were given.

"In 1933 I had a few wounds on my legs, and on my long treks through the jungle I have been wading knee-deep through marshy muddy pools for hours at a stretch and through these marshes, natives with yaws, may have passed, and that was the most likely time when the yaws organisms entered my blood, and developed later into a kind of tropical sore in 1934 and 1935" writes the Rev. Father van der Vlugt. In 1936 there were rheumatic-like pains in the joints, especially in the knee-joints, and in the middle of the year (1936) there was a pimple on the Adam's apple with crust superimposed. Later the cover of the pimple became yellow presenting the appearance of "a yellow collar-button". In

Case 46(contd)

course of a few months without the disappearance of the "throat-stud" with yellow cover "three other small pimples with yellow heads" appeared on the forehead.

In 1938 the fingers and toes became scaly, and the scales disappeared and recurred, until the patient went home to Netherlands and had a medical examination in Rotterdam.

"Everything was all right, only the blood test for Wasserman, Sachs Georgi and Meinecke were strongly positive".

The doctor who examined the patient in Rotterdam said "that the result of the blood test and the scales may be in connection with yaws which I had in the Cameroons", and so the doctor "sent me to Doctor Hermans who has been for a long time in the Dutch Indies, and who is a specialist in Tropical and Skin Diseases. He was very interested in my Framboesia and took a photo of the palms of my hand on which the scales can be seen." The patient was treated with a series of injections of Nearsphenamine and Bismuth by the specialist, but the blood test was still positive when he left.

Past History:

The patient was born in Lisse(near Amsterdam) in the Netherlands. He arrived in the British Cameroons in November, 1930, stationed for three years in Baseng in Kumba Division, Cameroons, trekking at intervals to the Mamfe Division. In October, 1933, he was stationed at Okoyong, 4 miles east of Mamfe Station and Township.

Case 46(contd)

Except for one year(1938) which was spent in the Netherlands, he has been in Okoyong from 1933 - 1945.

The patient enjoyed a fairly good health until he arrived in the Camerouns where he had suffered from malaria, dysentery and syno-arthritis. He was treated for yaws in 1936, 1938, 1943 and 1945. There is no history of venereal disease.

Family History:

The patient belongs to the Roman Catholic Holy Order, and is therefore unmarried. There is no tendency to any particular disease in the family.

General Condition:-

The patient is a well nourished individual and has a good muscle tone. There is no jaundice, icteric tint of the conjunctivae or oedema of the legs or ankles.

Temperature 98.4^oF. Pulse 72. Respiration 18.

Examination:-

On the left of the chin of the lower jaw there is a patch of desquamation. There are no lesions on the face, trunk and extremities. In the middle of the left leg there is a scar which is irregular in outline and about the size of a shilling piece. The scar is fixed to the bone.

The fingers have scaly eruptions which are more marked between the fingers and the bases of the phalanges. The toes have the same phenomena being more evident on the plantar aspects. The soles of the feet anteriorly are partially peeling little by little. The condition is not so evident in the palms of the hands.

Case 46(contd)

Heart

Circulatory System

Gastro-Intestinal System

Pulmonary System

Nervous System

Urinary System

Nothing abnormal is detected.

Diagnosis:-

Tertiary Yaws.

Result:-

Improved(Unsatisfactory)

COMMENTS:-

1. The source of infection is not definite, but it must have been during one of the Reverend Father's missionary tours prior to 1934(in all probability 1933).
2. The yaws organism must have entered the system through one of the wounds in the legs.
3. The primary stage, the secondary stage, and the tertiary stage of the disease, are definitely marked.
4. The disease did not respond to the treatment in the primary stage. This is due to
 - (a) The delay in seeking advice.
 - (b) The patient had a doubt about my diagnosis at the primary stage of the disease but resigned to his fate when the secondary lesions appeared.

Case 46(contd)

".....I started thinking that it might be yaws. I went to Doctor Sagoe at Mamfe and he told me that it was definitely yaws."

- (c) The treatment when begun was partial owing to the nature of the duty of the Reverend Father who was irregular in attendance.
 - (d) In an endemic area foreigners who contract yaws do not readily respond to treatment. This has been noted even in Africans from other provinces in Nigeria, or other colonies or states in West or East Africa.
5. The greatest handicap to the radical cure of the yaws in the patient is the fact that he goes on tour regularly to visit the churches and schools under his jurisdiction, and has to cross rocky mountains, rough roads, and wade through streams without a pair of boots or shoes.