# **6 HEALTH AND HYGIENE**

# 6.1 Locations of study

Camps were established at the following places in the three different territories:

Tirur	N11 <sup>o</sup> 42'37 " E92 <sup>o</sup> 35'46"
Puna Nallah	N11 <sup>o</sup> 57'8.2" E92 <sup>o</sup> 40'57.4"
Putatang	N12 <sup>0</sup> 00'54.3" E92 <sup>0</sup> 42'3.9"
B.D. Nallah	N12 <sup>0</sup> 03'37" E92 <sup>0</sup> 42'19.3"
Lakralunkta	N 12 <sup>0</sup> 18'2.9" E92 <sup>0</sup> 43'22.5"
Spike Island	N12 <sup>0</sup> 14'32.9" E92 <sup>0</sup> 42'24.3"

# 6.2 General Examination

The Health team during the three phases of survey could contact 251 Jarawas. On general examination of these 251 Jarawas it was found that three Jarawas were suffering from jaundice. The pulse rate of Jarawas is found to be within the normal range (60-80 / min.). However axillary temperature is found  $2^{0}$ F below normal (97.6<sup>0</sup> F) in most of the Jarawas except for thirteen Jarawas who had high temperature due to fever.

#### **6.2.1 Morbidity Status:**

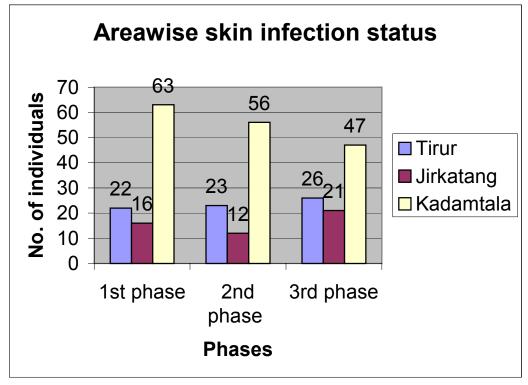
Morbidity	1 <sup>st</sup> phase	2 <sup>nd</sup> phase	3 <sup>rd</sup> phase	Average
ARI/LRI	10	23	28	20 (9)
Pallor	43	16	34	31(13.8)
Skin infection	101	91	94	95(42.4)
Malaria	3	2	3	3 (1.3)
Hepatitis	0	0	3	1 (0.4)
Viral Fever	16	4	13	11(4.9)

# Table 6.1 Distribution of the Jarawas by morbidity status

Numbers in brackets are percentages.

- 1. Out of all the Jarawas clinically examined 42.4% Jarawas had various types of skin diseases, mainly of fungal origin and 9% had respiratory tract infection, 4.9% had viral fever, 1.3% had malaria and 0.4% had hepatitis. No other deficiency signs of vitamins and minerals are detected.
- 2. A small percentage of the Jarawa population has lymphadenopathy in inguinal and cervical region. This may be due to bacterial and fungal infection of skin.
- 3. A large number of the Jarawas had skin infection at Tanmad area whereas in Boiab and Thidong relatively a small number of the Jarawas were found infected. This may be due to more friendly nature of the Tanmad Jarawas towards general population and use of worn clothes.

4. All the 251 Jarawas were examined for skin infection and found that 94(37%) Jarawas of three different areas had skin disease mainly of fungal origin. A few Jarawas had injuries and multiple healed scars on their body.



- 5. Five Jarawas were found having varying degrees of physical disabilities due to accident. One male Jarawa and two female Jarawas were found to have blindness of one eye.
- 6. None of the Jarawas had goiter / iodine deficiency disorder.

# **6.2.2 Mortality Status**

 Table 6.2.2.1 Areawise cause of death of the Jarawas (mortality status) by verbal autopsy

Cause of death	Jarawa Habitat					
	Boiab	Thidong	Tanmad	Total		
Fever with cough	69	52	84	205(62.7)		
Abdominal pain with vomiting	26	9	34	69(21.1)		
Burn injury	0	0	1	1		
Maternal death	1	0	4	5(1.5)		
Animal bite	0	1	3	4(1.2)		
Accidental injuries	0	2	3	5(1.5)		
Pig meat chocking	0	0	1	1		
Diarrhoea	0	1	7	8(2.5)		
Encounter	1	4	2	7 (2.1)		
Still birth	0	0	1	1		
Drowning	0	0	2	2		
Lost in jungle	0	0	1	1		
Blood vomiting	3	0	0	3(1)		
Unknown	3	3	9	15		
Total	103	72	152	327		

Numbers in brackets are percentages

- 7. Mortality status in the Jarawa population in three continuos generations, viz. self, parents and children elicited by verbal autopsy (past history of death in the family for about 50 years) found that approximately 327 Jarawas died in the past many years. This number may be higher as the Jarawas could remember only this many mortality in three generations which could be corroborated and cross checked with other Jarawas for the genuinity of information.
- 8. Mortality due to fever and cough (Respiratory Tract Infection) was reported to be 62.7%. The findings of the epidemic pneumonia in 1998, the respiratory tract complications after measles out break in 1999 and clinical evaluation of the Jarawas of three phases of this survey showed large morbidity due to respiratory tract infection. The respiratory tract infection was a major killer disease among the Jarawas.
- 9. 21% of mortality was due to abdominal pain, 2.5 % due to diarrhoea, 1.5% each due to maternal death and accidental injuries and 1.2% due to animal bites, specially crocodile.

Area	n	New	v born	Inf	ant	Chi	ild	Ad	ult
		Μ	F	Μ	F	Μ	F	Μ	F
Boiab	103	8	6	4	5	4	4	42	30
Thidong	72	1	1	2	9	7	0	29	23
Tanmad	152	1	10	9	8	18	19	45	42
Total	327	10	17	15	22	29	23	116	95
		(3)	(5.1)	(4.5)	(6.7)	(8.8)	(7)	(35.4)	(29)

 Table 6.3.2.3 Areawise sexwise mortality status

Numbers in brackets are the percentage.

10. Age and sex-wise mortality status of the Jarawas elicited by verbal autopsy shows 19% mortality among new born and infant combined, 16% mortality among children and 65% among in adults. Adult males died in large number as compared to females.

#### **6.2.3** Clinical Examination:

Of all the Jarawas subjected to systemic clinical examination during the three phases of study, nothing abnormal could be detected in their central nervous system, cardio-vascular system and genitourinary system. Clinical examination revealed that about 12% of the Jarawas had respiratory tract infection resulting in fever, cough and coarse crepitation and occasional rhonchi on auscultation.

Table 6.3.3.1 Distribu Blood Pressure (mm of Hg)	1 <sup>st</sup> Phase	2 <sup>nd</sup> Phase	3 <sup>rd</sup> Phase	Average %
90 and less	49 (38)	70(46)	48(27)	55 (37)
91 – 120	80(62)	82(54)	133(73)	98(63)
121 and above	0	0	0	0

# 4-12->

Numbers in brackets are percentages

Blood Pressure (mm of Hg)	1 <sup>st</sup> Phase	2 <sup>nd</sup> Phase	3 <sup>rd</sup> Phase	Average %
70 and less	79(61)	99(65)	104 (57)	94 (61)
70 - 90	50(39)	53(35)	77(44)	60 (39)
90 and above	0	0	0	0

Numbers in brackets are percentages

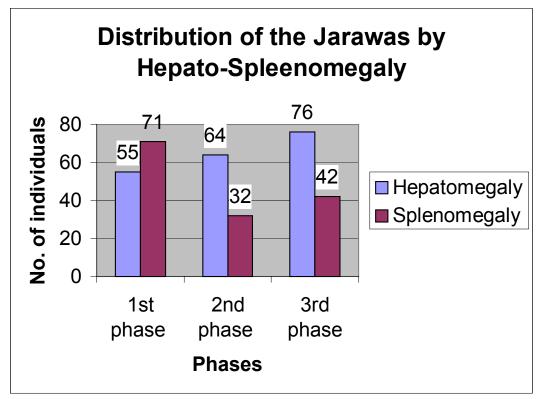
Blood Pressure of 181 Jarawas of different age and sex groups showed that 42.6% had diastolic blood pressure between 70-90 mmHg and 57.4% had diastolic pressure less than 70 mmHg. But none of them showed diastolic blood pressure more than 90 mmHg. Majority of the Jarawas had systolic blood pressure within 120 mmHg. As such, no hypertension case was detected among the Jarawas.

- 1. On an average, the pulse rate of the Jarawas varied between 60 and 70 / minute.
- 2. One female Jarawa of Boiab area had dental carries. No other Jarawa suffered bad oral hygiene or bleeding gums.
- 3. Only three Jarawas had glossitis due to vitamin B complex deficiency.

Fable 6.3.3.3 Distribution of the Jarawas by Hepato-spleenomegali status						
1 <sup>st</sup> phase	2 <sup>nd</sup> phase	3 <sup>rd</sup> phase	Average			
55(29)	64(28)	76(30)	65(29)			
71(38)	32(13.8)	42(16.7)	48(22.8)			
	<b>1<sup>st</sup> phase</b> 55(29)	1 <sup>st</sup> phase         2 <sup>nd</sup> phase           55(29)         64(28)	1 <sup>st</sup> phase         2 <sup>nd</sup> phase         3 <sup>rd</sup> phase           55(29)         64(28)         76(30)			

Numbers in brackets are percentages

4. Per abdominal examination of the Jarawas revealed that an average 29% had mild to moderate palpable liver (hepatomegaly) and 22.8% had palpable spleen (spleenomegaly). This hepato-spleenomegaly among the Jarawas may be due to chronic infective disease like malaria, and was found increased during the third phase of study in comparison to the second phase. However, spleenomegaly decreased in comparison to the first phase of study.



- 5. Per abdominal examination of the Jarawas during all the three phases showed the following:
  - a. One Jarawa woman had an appendicular lump.
  - b. One Jarawa woman had acute cholecystitis.
  - c. One male Jarawa had abdominal interstitial hernia.

All the above cases were referred to for specialized treatment to the G.B. Pant Hospital and they recovered.

- 6. Per vaginal examination of two Jarawa women of the Tanmad area showed normal shape and size of uterus and adenaxae, and one had foul smelling vaginal discharge.
- 7. Examination of male genitalia of adult Jarawas revealed that the glans penis and under surface of prepuce was neat and clean in comparison to those of the non-tribals.
- 8. No congenital abnormalities were noticed among the Jarawas except vitiligo of lips, which was found among the members of one Jarawa family at Tanmad.

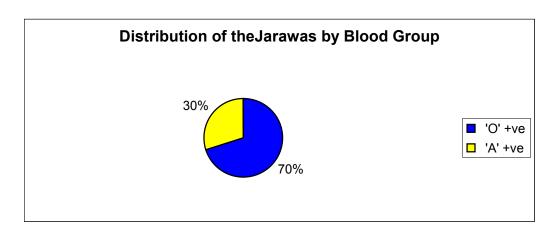
### 6.2.4 Laboratory Investigation

138 blood samples were collected from the three different territories for various laboratory investigations which indicate the following:

	stribut	1 <sup>st</sup> Phase		J.	by blood groups 2 <sup>nd</sup> Phase			3 <sup>rd</sup> Phase		Average %
Blood groups	Μ	F	Т	Μ	F	Т	Μ	F	Т	(M + F)
'O' Positive	53	34	87(76)	39	41	80(67)	53	39	92(67)	86 (70)
'A' Positive	14	13	27(24)	22	18	40(33)	17	39	46(33)	38 (30)

Numbers in bracket are percentages

1. In ABO and Rh (D) blood group systems, 70% Jarawas were "O" Rh-positive and 30% were "A" Rh-positive. None of the Jarawas were found to be Rh-negative.



# Table 6.3.4.2 Distribution of HBsAg positivity – phase and sexwise

Sex	1 <sup>st</sup> phase	2 <sup>nd</sup> phase	3 <sup>rd</sup> phase	Average
Male	35	35	39	36(60)
Female	20	24	28	24(40)
Total	55	59	67	60(100)
NI 1				

Numbers in brackets are percentages.

- 2 Of all the blood samples collected during the three phases of study and analyzed by the ELISA method for HbsAg, 48.5% individuals were found to be HbsAg (Australian surface antigen) positive. Out of this 58.2% were males and 41.8% were females.
- 3. Of all the blood samples tested for anti-Hbs, 70% of them showed positivity which means 70% of the Jarawas had hepatitis B infection in their life time. But HbsAg positivity was only 48.5% which means rest of the population became negative for hepatitis B virus. On the whole 3/4th of the Jarawa population had the chance of hepatitis B infection in their lifetime.

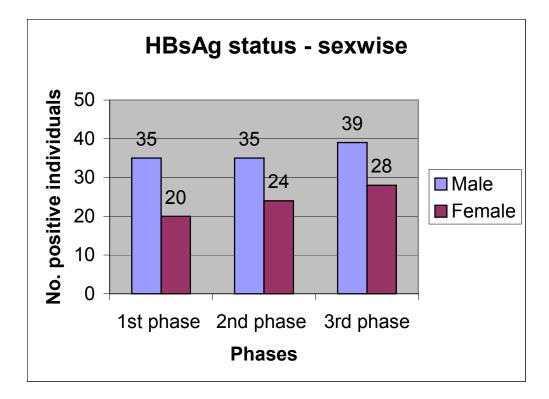


 Table 6.3.4.3 Prevalence of HbsAg positivity by area and agewise

Area	1 <sup>st</sup> phase	2 <sup>nd</sup> phase	3 <sup>rd</sup> phase	Average
Boiab	3	15	14	
Thidong	15	16	22	60(48.5)
Tanmad	37	28	31	
Total	55 (48.2)	59(49.1)	67(48.5)	
Numbers in brackets	are nercent	2020		

Numbers in brackets are percentages

4. Even though 48.5% Jarawas were HBsAg positive during three phases of study, the serum bilirubin of most of the Jarawas were within normal limits except three whose serum bilirubin was found to be high. This shows that all HBsAg positive Jarawas are healthy carriers. However, the incidence of HbsAg among the Jarawas is endemic in nature.

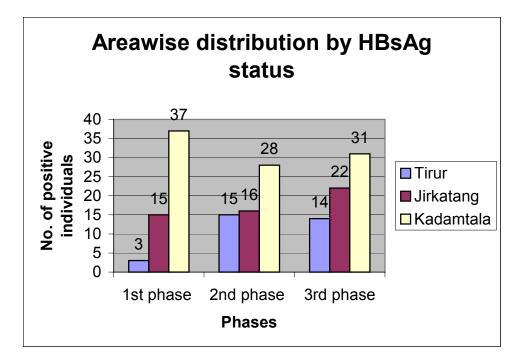


Table 6.3.4.4 Age groupwise distribution of the Jarawas by HBsAg positivity

Age group	1 <sup>st</sup> phase	2 <sup>nd</sup> phase	3 <sup>rd</sup> phase	Average
1-5 years	3	3	2	2.5 (4)
6-14 years	21	26	25	24(40)
>15 years	31	30	40	33.5(56)
Total	55	59	67	60(100)
Number in the state of				

Numbers in brackets are percentages

- 5. Out of 67 HBsAg positive Jarawas of the third phase, 59% were in the age group of more than 15 years, 37% 6 to 15 years and 4% 1-5 years' age groups. Blood samples were mostly collected from young and adults only, not from infants and children below 5 years of age due to refusal by the parents.
- 6. Blood samples analysed for SGPT/SGOT (liver function test) showed 93.5% within normal limits and 6.5% had high levels. This shows that liver function in 93.5% is normal in spite of high prevalence of hepatitis B.
- 8. None of the blood samples tested for VDRL, HCV and HIV was found reactive.

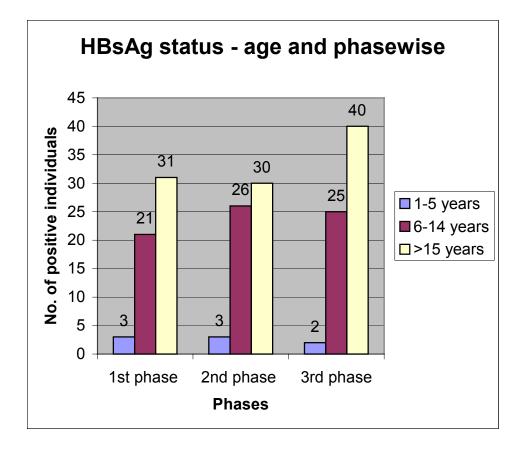


Table 6.3.4.5 Serum Protein status- phasewise

Serum Protein	1 <sup>st</sup> Phase	2 <sup>nd</sup> Phase	3 <sup>rd</sup> Phase	Average %
Level (gm./dl)				
Low < 6.5	11 (10)	42(35)	14(10)	22 (18.4)
Normal 6.6 – 8.4	51(48)	75(63)	106(77)	77(62.6)
High > 8-4	44(42)	3(2)	18(13)	21.6(19)

Numbers in brackets are percentages.

- 9. Serum iron was found to be normal in 81 %, low in 9 % and high in 10 %. This indicates that there was no deficiency of iron in their diet.
- 10. Routine blood examination of all the blood samples collected in three phases and tested for TLC and DLC revealed the values found within the normal limits.
- 11. During three phases of study, the Blood smear for malarial parasites was found positive in eight samples out of which six were plasmodium felciparum and two were *Plasmodium vivax*.
- 12. Blood platelet counts found to be normal in 98 % of the Jarawas while 2 % having low count.
- 13. During the first phase of study only a few samples of urine and stools could be collected from the Thidong area with great difficulty and on examination nothing was found abnormal. The examination of stool and urine was not possible during the subsequent phases of study due to non-cooperation of the Jarawas.

### 6.3 Some observations

- 1. A Jarawa woman remained in the hut most of the time during her advance stage of pregnancy. She avoided any hard work and physical activity. Her food intake was sometimes reduced quantity-wise, she also became choosy about food items.
- 2. During the menstrual period, as a custom among the Jarawas, the husband is not allowed to sleep with the wife till the bleeding stops.
- 3. At the time of delivery, the pregnant woman is secluded from the rest and confined to a corner in the hut where there is a continuous fire.

#### 6.4 Some changes in behaviour of the Jarawas

- 1. Doctors, pharmacists and para-medical workers who treat the Jarawas are accepted with affection.
- 2. In September 1999 there was an outbreak of measles among the Jarawas. 95 Jarawas were admitted to the G.B. Pant Hospital for measles and its complications between 21<sup>st</sup> September, 99 and 23<sup>rd</sup> October, 99. Most of them were treated at the PHC, Kadamtala and the PHC, Tushnabad. This epidemic of measles affected more than 50% of the Jarawa population. But there was no mortality due to timely medical intervention by the Health Department.
- 3. Incidence of malaria was also reported in December 2000 and May 2001 and all of them were treated at Government Health Centres successfully.
- 4. The Jarawa patients are accompanied by a large number of their attendants to the hospitals. They consumed the normal food supplied in the hospital during their stay.
- 5. Due to medical treatment, the hostile behaviour of the Thidong and Tanmad Jarawas was completely changed. They have became friendly and seek medical help whenever needed.

#### 6.5 Effects of contact on health and nutrition

Coming in close contact with the non-Jarawas has caused the Jarawas more ill effects than benefits.

- 1. The analysis of the morbidity data of the Jarawas since 1996 shows various outbreaks of communicable diseases like community acquired pneumonia (1998), measles (1999) and malaria (2000-2001) which were probably absent among the Jarawas before their contact with outsiders.
- 2. Skin infection was observed among the Jarawas as reported earlier by the Doctors of the Contact Team. But the incidence seemed to have increased due to the acceptance of dirty / used clothes from the non-Jarawas and further without adapting the practice of washing clothes.
- 3. The Jarawas were not consuming alien food items earlier, After coming in close contact with others they started taking food containing salt and spices. Intake of such salt resulted in the increase of their blood pressure, particularly among those who frequently visited hospitals, jetties and villages and consumed the alien food.

4. At present the Jarawas understand the importance of taking timely medical care from the nearby health institutions / health personnel specially after outbreak of diseases, which finally resulted in the reduction of their morbidity and mortality. A few young Jarawas, who often meet the *Eenens*, have learnt about the *Eenen* concept of personal hygiene such as regular bathing, cleaning of mouth after taking food and even cleaning clothes.

# **6.6 Etiology of Diseases**

Phases	Z	Anaemia	CED	RTI	Malaria	Skin infection	Viral fever	Hepato megaly	Spleeno Megaly	HbsAg positivity	Disability
1 <sup>st</sup> Phase	189	65	6	16	3	101	16	55	71	55	5
2 <sup>nd</sup> Phase	231	33	15	46	2	91	26	64	32	59	5
3 <sup>rd</sup> Phase	251	40	18	58	3	94	0	76	42	67	5
Total	671	138	39	120	8	286	42	195	145	181	15
Avg.	224	46	13	40	2.5	95	14	65	48	60	5
Etiology		Nutritional	Nutritional	Infective	p. falciparum vivax	Fungal & bacterial	Viral	Chronic infection	Chronic infection	Viral	Accidental

# Table 6.9.1 Etiology of Diseases

# Table 6.9.2 Prevalence of Disease due to contact with general population

Year	Name of the Disease	Male	Female	Total	Death
ble	Com. Acquired Pneumonia.	27	22	49	0
02 as per available	Measles with its complications	45	50	95	0
0	Mumps	18	9	27	0
1998-20 records	Malaria	45	28	73	0

The morbidity pattern observed during the three rounds of the Health and Nutrition Survey is as under :-

- i. Infectious diseases: Malaria, Respiratory tract infection and fungal infection of skin, etc.
- ii. Accidental: Amputation and various physical deformities.

**Endemic diseases:** The high prevalence of Hepatitis B healthy carriers is noticed among the Jarawas. Out of the total samples collected and analyzed by the ELISA

method for HBsAg, 48.5% were found to be positive without any morbidity and mortality. However, 3 Jarawas were found suffering from jaundice with altered liver function test during the third phase of the survey, but nonetheless they recovered completely.

**6.7 <u>Ethno-medicine</u>; its extent of use and efficacy** Ethno-medicine is practised by the Jarawas. They consume leaves of the wild plant, creepers, bark of the trees and different types of clay against aliments like cough, cold, headache, body ache and abdominal pain. The adult female Jarawas sit on large leaves during their menstrual period, assuming that it will stop excessive bleeding.

During the three phases of the study, the health team did not find oral ingestion of any ethono-medicine by the Jarawas. The Jarawas believe in two states of body; *tomo* (normal) and *ulleda* (sick). When a person feels incapable of performing his or her normal activities, the person considers himself / herself as afflicted with *ulleda*. They have a symptom oriented treatment pattern. In this community there is no medicine-man, often the knowledgeable elderly persons suggest the treatment. Apart from dietary restrictions, they use various herbal medicines.

### 6.8 Homoeopathic System of Medicine

Homoeo means 'similar' and pathos means 'suffering' or disease. Homoeopathy is a system of medicine founded on a definite law 'Similia Similibus Curantur' which means like cures like, i.e. treating disease by medicine producing similar symptoms to that of the disease. The therapeutic law is as follows "A weaker dynamic affection is permanently extinguished in the living organism by a stronger one, if the latter (while differing in kind) is very similar to the former in its manifestation".

## 6.8.1 Evaluation of symptoms

The patient gives us a list of symptoms all of which are not equal in importance, so the physician has to learn to distinguish the symptoms which are most important and which must be covered by the remedy as against those, which may be conveniently ignored. Out of Kentian, Hahnemanian, Boerick, Boenning Hausen's method and considering the limitations of the source of symptoms only Hahnemanian method is observed, i.e. general symptoms and common symptoms.

# 6.8.2 Posology

Only one single simple medicine was chosen for administration, in 30<sup>th</sup> centicimal scale in acute and 200-centicimal scale potency in chronic disease.

#### 6.8.3 Case study

During the study altogether 204 Jarawas (male, female, old, adult, young, & new born) were examined and Homoeopathic case taking was done on the basis of the subjective symptom, objective symptom, clinical examination and pathological investigation.

- A) The following different symptoms were noted in almost 48 individuals indicating Respiratory Tract Infection;
  - 1. Cough, constant with thick tenacious discharges
  - 2. Cough dry, irritating at throat.
  - 3. Running nose, watery discharge, excoriating.

- 4. Thick yellow discharges from nose
- 5. Cough and cold with fever
- 6. Seven babies less than 2 years old affected with cough, congested chest & wheezing.

On the basis of symptoms similarities the following Homoeopathic medicines were given with very satisfactory result. The medicines were Aco, Bry, Antimtart, Kali Bich, Bell, RT, Ipecac, HS, Puls.

B) In seventy-five individuals the skin infection was noted (fungal/bacterial) - Itching (Nadu Hata) at the groin, waist, around the arms and neck. In some cases, itching was more at night and / or all the time.

On the basis of the above, the following homoeopathic medicines were given with satisfactory results.

Bacilinum, Sulphur, Lyco, Graphites, Tellurium, Graphites ointment, and Sukucumchuk ointment.

- C) In forty-five individuals it was clinically found that they had liver and spleen enlargement for which Lyco, Natsulph, Cheli, Ceanathus were given and good results were obtained.
- D) Four cases of loose motion were noted among the babies due to dentition or other causes for which **Arsalb**, **Cham**, **Podo** were given, with total relief within a few hours.
- E) Five cases were noted with high fever, cold and body ache for which **Bella**, **Gels** were given and relief was noticed.
- F) One girl of 15 years who had late menstruation was given **Puls** for two days. On the third day, the menses started.
- G) A boy fell down from a truck and had trauma on the right side of the face with swelling and conjunctival hemorrhage with closed eyes. **Arnica** and **Cham** were given internally and **Calendula** ointment was applied and there was a total cure in 3 days.
- H) Eight children and one adult complained of pain in abdomen for which **Cina** was given to all, resulting in total cure.
- I) Four children had injury with infections having pus discharge for which **HS**, **Calendula** were given, resulting in good prognosis towards healing.
- J) One Jarawa lady married for long, but had not conceived was given **Calc Carb.** The results are awaited.
- K) One Jarawa boy having veruccal growth of his hand and leg was given 3 days treatment. On the fifth day, the verucca fell down from hand and elbow and the one at knee was hanging.
- L) Three Jarawas had clinical jaundice, i.e Pallor of Conjunctiva. **Oral Mucosa**, **Cheli, Nat Sulph** were given. But for better management they shifted to the hospital.
- M) On the basis of an earlier report as well as pathological investigation, 48 % of the Jarawas had Hepatitis B +ve. Lycopodium in higher potency was given to few of them.

#### 6.8.4 Miasmetic Consideration

In Homoeopathy an infecting agent and cause of disease are called **miasm**, which are dynamic disease producing power, which pollute the human organism and become the producer of every possible disease conditions. Miasm may be acute, chronic. That may be single, psora, syphilis, sycosis and complex.

In case of the Jarawas it was observed that the complex miasm of psora-sycosis was the cause of disease.

Usage of Mineral origin: The following information could be gathered in this connection.

S.No.	Jarawa Name	Scientific name	Uses
1.	Alam	Red ochre	Mixed with pig-fat and used for snake and centipede bites, pain, skin diseases

### 6.8.5 Efficacy of Ayurveda medication on the Jarawas

After giving Ayurveda medicines to the Jarawas, the following results could be seen:

- Remarkable relief was seen in clinical jaundice, stomach pain, etc.
- Results were varying in respiratory tract infections and skin diseases
- Cases of hepatospleenomegaly, anaemia, skin diseases, etc. require prolonged treatment in Ayurveda.
- Ayurveda medicines can be made into palatable form and can be given to the Jarawas to get good results without any side effects. However, there are many practical limitations.

**6.8.6 Hygienic practices:** The Jarawas do not alter the natural surrounding of their habitation much. Still they maintain hygienic conditions in and around their camps. They always defecate away from their hutment and use either twigs or leaves for cleaning their bottom. The females use soft twigs after urination. Defecation of infants is immediately collected in leaves and later disposed off at some distance from their huts.

The Jarawas generally wash their face and mouth with water early in the morning. A few young boys were seen using tooth paste and tooth brush in recent times. They pair their nail and hair with a knife (*toaad*).

After taking *leo* (honey), they invariably take bath. As calorific value of honey is high (319 k/cal for 100 ml), it generates body heat almost instantly. Moreover, the stickiness of honey causes discomfort, unless washed properly.

The Jarawas do not have the habit of washing hands before eating. However, after eating fish, meat or any other item, they wash their hands often by ejecting water taken in mouth. It is a custom to smear the face and upper part of the body with clay after eating pig. They believe, if clay is not applied the hunter will not get good hunt in future and the meat eater also will suffer from abdominal pain. In fact the clay helps to remove the fat sticking to face or mouth.

The Jarawas, try to keep their immediate surroundings clean. They never bring the intestinal parts of any games to the camp. Immediately after shooting down a pig the hunter removes its intestine and throw it away at the spot. This also helps them to carry the pig from a long distance. Same practices have also been observed among the womenfolk while collecting mollusc and fish.

When the Jarawas camp at one place, they can not completely avoid discarding some organic material like fish bone, mollusc shell, skin and inner pith of jackfruit. However, each piece of pig bone is dropped in fire. After a few days the discarded material start decomposing. Around this time the Jarawas leave the camp and shift elsewhere. During this fallow period nature takes care of the place, by the time the campers return to the place, the process of natural decomposition is complete. In one instance, a group of the Tanmad Jarawas decided to settle down at one place on the western coast and they discovered that another group used the campsite in the recent past, the place was littered with outer shells of prawns, mollusc shells and such other decomposing materials. The place was stinking, there were flies all around. They immediately decided to shift to some other nearby place; as required fallow time for this site was not over. Rarely the people overstay at a campsite for certain reasons, it can be illness or pregnancy. Sometimes the hunters take shelter in some recently deserted camp, depending on availability of resources, but they never stay at such places for more than a couple of days.

#### 6.8.6.1 Physical facilities and sanitation around the habitat

Being hunter-gatherer all the Jarawas move in a group from one place to other within their areas in programmed intervals depending on the availability of food around their habitat. Once in the camp the Jarawas make temporary huts made up of ballies, cane, bamboos and palm leaves.

- 1. Some huts are very small and can accommodate only one family. However community huts can accommodate 10 to 15 families.
- 2. The dogs, newly found friends of the Jarawas, are adding to the problem. The dogs share their foods, which, in ordinary course the Jarawas should have been taking. Exchange of food while eating with dogs causes diseases for the Jarawas.
- 3. The Jarawas, adult and children, sleep side by side, so contagious diseases like fungal infection of skin, viral fever and other communicable diseases, etc. spread easily by body contact.