IRIAN
Bulletin of Irian Jaya
IKHTISAR

Bahasa Wandamen adalah bahasa Austronesia yang digunakan di pantai utara Irian Jaya, di daerah yang dikenal sebagai daerah "Leher Burung", yang berada di selatan dan sedikit ke timur dari daerah "Kepala Burung". Penutur asli dari bahasa ini berjumlah 5.000 orang, ditambah dengan 3.000 lagi yang bertempat tinggal di kota-kota besar di Irian Jaya.

Makalah ini menyajikan istilah-istilah kekerabatan yang dipakai dalam bahasa Wandamen yang terbagi menjadi kerabat yang berdasarkan keturunan dan kerabat yang berdasarkan hubungan perkawinan yang menarik sekali adalah kaidah hubungan keturunan berdasarkan perkawinan yang tidak simetris pada orang Wandamen yang terdiri dari dua bagian. Bagian yang pertama menyamakan seorang ipar yang lebih tua dengan orang tua yang sama jenis kelaminnya. Bagian yang kedua menyamakan seorang ipar yang lebih muda dengan anak menantu yang sama jenis kelaminnya. Kedua bagian ini bersifat timbal balik.

Istilah-istilah kekerabatan yang digunakan dalam bahasa Wandamen diuraikan dalam suatu bagan disertai dengan penjelasan tentang kerabat-kerabat yang mana dicakupi dalam setiap istilah tersebut. Hal ini penting untuk dapat memahami lebih baik bagaimana anggota-anggota masyarakat Wandamen berhubungan satu sama yang lain.
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0. INTRODUCTION

Wandamen, an Austronesian language, is spoken on the north coast of Irian Jaya, south and a little east of the area known as the "Bird's Head". There are about 5,000 speakers there, and about 3,000 more living in the larger towns of Irian Jaya.

The following paper presents the kinship terms used in Wandamen, dividing them into filial and affinal kinsmen. Of special interest is the Wandamen AFFINAL SKewing RULE, the first part of which equates an elder same-sex sibling's spouse with same-sex parent's spouse, and the second part of which equates a younger same-sex sibling's spouse with a same-sex child's spouse. These two parts include also their reciprocals.

A chart of the kinship terms used in Wandamen is presented along with an explanation of which relatives each term covers. This basis is important for a better understanding of how different members in Wandamen society relate to each other.

1.0 FILIAL KINSMEN

Wandamen filial terms of reference are presented in Figure 1 in their unpossessed form without a pronoun. Some forms show a radically different form when possessed for first person. Wherever this is the case, the first person possessed form is listed in Figure 1 after the corresponding unpossessed form.

Figure 1. Wandamen Filial Terms of Reference

<table>
<thead>
<tr>
<th>Term</th>
<th>Reference</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>tapu, apui</td>
<td>PP(R,1,-S)</td>
<td>grandkinsman</td>
</tr>
<tr>
<td>tama, yai/ta</td>
<td>Pm(G,-S), ePCS(G)</td>
<td>father</td>
</tr>
<tr>
<td>sina, mai</td>
<td>Pf(G,-S), ePCSf(G)</td>
<td>mother</td>
</tr>
<tr>
<td>atu</td>
<td>C(G,S-), yaSPCb(G)</td>
<td>child</td>
</tr>
<tr>
<td>ama, av/abei</td>
<td>xPm(G,-S)</td>
<td>uncle</td>
</tr>
<tr>
<td>sumo, amoi</td>
<td>xPf(G,-S)</td>
<td>aunt</td>
</tr>
<tr>
<td>ano, anoi</td>
<td>xC(G,S-)</td>
<td>nephew/niece</td>
</tr>
<tr>
<td>netavava, babai</td>
<td>eaPCa(G)</td>
<td>same-sex elder sibling</td>
</tr>
<tr>
<td>netakatu, media</td>
<td>yaPCa(G)</td>
<td>same-sex young-er sibling</td>
</tr>
<tr>
<td>raruo</td>
<td>aPCb(G)</td>
<td>opposite-sex sibling</td>
</tr>
</tbody>
</table>
1.1 GRANDKINSMEN

All kinsmen more than one generation distant from ego are classified together under the single, self-reciprocal term tapu 'grandkinsman'. Its primary referent is a parent's parent, irrespective of sex, or, reciprocally (Rule R), a child's child. As stated, it extends without limit to any known collateral or lineal kinsman beyond one generation distance from ego (Rule 1). This may be illustrated by a filial tree, as in Figure 2, where ego is indicated by 'e', primary referents by 'x', and the extended ranges (in part) by arrows.

![Diagram of filial tree]

Figure 2. Range of tapu 'grandkinsman'.

Tapu also extends affinally to the spouse of an ascending generation tapu (Rule -S), and reciprocally (Rule R), to descending generation filial kinsmen referred to as tapu by spouse.

1.2 PARENT AND CHILD

Three terms designate parallel kinsmen of the first ascending and first descending generations. The term tama 'father' has the male parent as its primary referent. It extends to any male kinsman of father of his generation (Rule G). It also extends affinally to the husband of a corresponding female parallel kinsmen for whom the term sinia 'mother' is used (Rule -S). The term sinia 'mother' parallels the father term. Its primary referent is the female parent, and it extends to any of her female kinsmen of her generation (Rule G). It also extends affinally to the wife of a corresponding male parallel kinsman for whom the term tama 'father' is used (Rule -S).

When tama or sinia are used in referring to a collateral parent, his or her relative seniority to the linking lineal kinsman is always specified by postponing either baba 'big, great' or katu 'small'. Thus, father's senior 'brother' is tama baba, his junior 'brother' is tama katu; and similarly for mother's 'sisters': sinia baba 'elder mother' and sinia katu 'younger mother'. The corresponding first-person forms are yai (or tai) baba, yai (or tai) katu, mai baba, and mai katu. The basis of seniority is relative age, but this is discussed in detail below.

There is an additional first-person term of reference which may denote either the 'elder brother' of father or the 'elder sister' of mother: ambua (or ambuai) 'parent's same-sex elder sibling'.
The child term, \textit{atu}, is the reciprocal of the two parent terms. Its primary referent is ego's child, irrespective of sex; and it extends bilaterally to the child of any same-sex kinsman of ego's generation (Rule G), and affinally to any such first-descending generation parallel kinsman of spouse (Rule S-).

There are also two first-person forms which are used to distinguish a child's sex: \textit{komi} 'my boy' and \textit{kavi} 'my girl'.

Parent and child terms have an additional affinal extension which is discussed below when affinal terms are introduced.

1.3 CROSS-KINSMEN OF THE PARENT AND CHILD GENERATIONS

There is a second set of three terms for referring to cross-kinsmen of the first ascending and first descending generations.

The term \textit{ama} denotes a mother's brother. It extends to all other male cross-kinsmen of the first ascending generation (Rule G), under a 'Seneca' definition of 'cross' (Lounsbury 1964): namely, to all of mother's male kinsmen of her generation. It also extends affinally to the spouse of the corresponding female cross-kinsmen for whom the term \textit{sumo} 'aunt' is appropriate (Rule S-).

This aunt term, \textit{sumo}, has the father's sister as its primary referent. It also extends to any of father's female kinsmen of his generation (Rule G), and affinally to the spouse of any man for whom the term \textit{ama} 'uncle' is used (Rule S-).

The reciprocal of aunt and uncle terms is \textit{ano} 'nephew/niece'. Its primary referent is a child of ego's opposite-sex sibling. It extends collaterally to the child of any opposite-sex kinsman of ego's generation (Rule G) and affinally to any such first-descending generation cross-kinsman of spouse (Rule S-).

1.4 SIBLINGS

In distinguishing the kinsmen of ego's generation, once again we find a set of three which classify siblings by relative seniority or by relative sex, or both.

Two terms distinguish senior and junior same-sex siblings. \textit{Netavava} denotes either a man's elder brother or a woman's elder sister. \textit{Netakatu} denotes either a man's younger brother or a woman's younger sister.

As can be readily surmised by a comparison of these two terms, the forms \textit{vava} and \textit{katu} are phonological variants of the words \textit{baba} 'big, great' and \textit{katu} 'small' which collocate with parent terms when referring to collateral 'parents'. The form \textit{vava} can occur alone in reference to siblings, but never to denote a single kinsman. It is used collectively, with or without endings \textit{vava} and \textit{katu}, to acknowledge a sibling relationship between two or more subjects. A speaker may refer, for example, to two or more third persons as being \textit{vava} 'siblings'; or a woman might say that she and her sister are \textit{vavava}. In this inclusive use, the rank of
the sister is put in focus such that she would speak of herself and her older sister as being netavava or of herself and her younger sister as being netakatu.

A third sibling term, raruo, denotes an opposite-sex sibling: a man's sister or a woman's brother, without reference to seniority. There are two first-person forms for this relationship, used by female and male ego, respectively: muani (or wowo) 'woman's brother' (lit. my boy) and vavi (or vavini) 'man's sister' (lit. my girl).

All sibling terms extend bilaterally in reference to any kinsmen of ego's generation (Rule C).

2.0 CALCULATING SENIORITY

In calculating the relative seniority of two kinsmen of the same generation, the relative age of the first (true) siblings descending from the nearest common ancestor of the two kinsmen is diagnostic. This may be illustrated by Figure 3, where the relative age of each pair of generation peers is indicated by plus (+) for the elder kinsman and minus (−) for the younger. Hendrika is netavava 'same-sex elder sibling' to Adela because she was born prior to Adela. Kostan, however, is also netavava to Feri even though born after Feri because Hendrika is Feri's sinia baba 'elder mother'. Feri has no children, but should he ever have a son, the boy will refer to Kostan as tama baba 'elder father' because Kostan is netavava 'same-sex elder sibling' to Feri.

Yohan is raruo 'opposite-sex sibling' to Adela. The term does not distinguish the relative seniority of the sibling pair explicitly. Rudi is, nevertheless, netavava to Feri because Yohan is older than Adela. Feri refers to Yohan as ama 'uncle', and a son of Feri would refer to Rudi as tama baba 'elder father'.

3.0 AFFINAL KINSMEN

Wandamen affinal terms are presented in Figure 4.

3.1 PARENT-IN-LAW AND CHILD-IN-LAW

There are three terms for affinals of ascending and descending generations. The parent-in-law term nio has spouse's parent, irrespective of sex, as its primary referent. It extends both lineally and collateral to any other kinsmen of spouse of ascending generations (Rule 1), and affinally to the spouse of any such kinsman of spouse (Rule 5); that is, all those to whom spouse refers as grandparents, father, mother, or aunt.
Two terms are reciprocal to nio, dividing junior affinals according to sex. A son-in-law term, niviniavi, denotes a daughter's husband as its primary referent. It extends both lineally and collaterally to the husband of any other female kinsman of a descending generation (Rule 1), and affinally to the husband of any such descending-generation female kinsman of spouse (S-); that is, the husband of any kinsman of the descending generation to whom ego refers as child, nephew/niece, or grandkinsman.

A corresponding daughter-in-law term, rewai, denotes a son's wife and extends lineally and collaterally to the wife of any other male kinsman of a descending generation (Rule 1), and affinally to the wife of any such descending-generation male kinsman of spouse (S-). In referring to an affinal kinsman of two or more generations distance from ego or spouse, the grandkinsman term is collocated with the corresponding affinal term. Thus, spouse's grandparent is nio tapu or tapu nio 'grandkinsman parent-in-law', the wife of a grandson is rewai tapu or tapu rewai 'grandkinsman daughter-in-law'.

Parent-and child-in-law terms have an additional extension to affinals of ego's or spouse's generation which is discussed below after the introduction of sibling-in-law terms.

Kinship terms of reference are, for the most part, also used in direct address with only occasional minor morphological differences from first-person forms. In the case of parent-and child-in-law, however, special terms of respect are used in direct address: aisinia 'old man' is used to address father-in-law, vavinaisinia 'old woman' for mother-in-law,
vavissa'vai 'girl's husband' or kavi sawa 'daughter's husband' for son-in-law, and javinda'wet 'girl-daughter-in-law' or komoi vinie 'son's wife' for daughter-in-law.

3.2 SIBLING-IN-LAW

There are just two terms, both self-reciprocal, which classify only affinals of ego's or spouse's generation, one for same-sex sibling-in-law (dero) and one for same-sex co-sibling-in-law (sovosi).

The primary referent of dero same-sex sibling-in-law' is a man's sister's husband, a woman's brother's wife, or reciprocally (Rule R), a man's wife's brother, or a woman's husband's sister. These dyads are illustrated in Figure 5. Dero extends collaterally as well (Rule C) to include the spouse of any same-generation opposite-sex kinsman (i.e. spouse of raruo) or, reciprocally, any same-generation opposite-sex kinsman of spouse (i.e. raruo of spouse). The first-person form of dero is arai.

There are no special terms for opposite-sex siblings-in-law. Rather, these are conceptualized as senior or junior kinsmen and classified accordingly as 'parent' or 'child', or as 'parent-in-law' or 'child-in-law'.

Figure 5. Primary range of dero 'same-sex sibling-in-law'.

On the one hand, a same-sex elder sibling (netavava) is almost certainly married before ego marries and, in that sense, takes on a full, adult role in the family. Ego is, in a sense, still a child when his (or her) netavava marries. Ego, then, classifies the spouse of netavava as a parent and, in turn, is classified as a child, as illustrated in Figure 6.

\[ \text{atu} + \text{sinia} = \text{aro} \]

Figure 6. Spouse of netavava and netakatu of spouse.

On the other hand, a same-sex younger sibling (netakatu) marries after ego is a married and fully-functioning adult of the family. The in-marrying spouse of netakatu is, thus, conceptually equivalent to an in-marrying child-in-law while, conversely, spouse's elder same-sex sibling (spouse's netavava) is a married adult and conceptually equivalent to a parent-in-law. The use of affinal terms for these relationships is, thus, as illustrated in Figure 7.

\[ \text{aro} + \text{rewa} = \text{nio} \]

Figure 7. Spouse of netakatu and netavava of spouse.
These conceptual equivalencies may be characterized by a rule of structural equivalence to which I will refer as the Wandamen AFFINAL SKewing RULE. It has two parts.

The first part, with its reciprocal (Rule R), equates an elder same-sex sibling's spouse with same-sex parent's spouse: \( \text{eAPCSb}(R) \rightarrow \text{aPSb}(R) \). It may be read: Let the spouse of a same-sex elder sibling be considered to be equivalent to the spouse of a same-sex parent, and reciprocally (Rule R), let spouse's same-sex younger sibling be considered to be equivalent to spouse's same-sex child. These conceptual equivalences are presented graphically in Figure 8.

\[ \text{atu} \quad \text{sinia} \quad \text{atu} \quad \text{sinia} \quad \text{atu} \quad \text{tama} \quad \text{atu} \quad \text{tama} \]

**Figure 8.** Affinal skewing rule, part one: \( \text{eAPCSb}(R) \rightarrow \text{aPSb}(R) \).

The second part of the Wandamen AFFINAL SKewing RULE, with its reciprocal (Rule R), equates a younger same-sex sibling's spouse with a same-sex child's spouse: \( \text{yaAPCSb}(R) \rightarrow \text{aCSb}(R) \). It may be read: Let the spouse of a same-sex younger sibling be considered to be equivalent to the spouse of a same-sex child, and reciprocally (Rule R), let spouse's same-sex elder sibling be considered to be equivalent to spouse's same-sex parent. These conceptual equivalences are presented graphically in Figure 9.

\[ \text{nio} \quad \text{rewa} \quad \text{nio} \quad \text{rewa} \quad \text{nio} \quad \text{nevi} \quad \text{niavi} \quad \text{nevi} \quad \text{niavi} \]

**Figure 9.** Affinal skewing rule, part two: \( \text{yaAPCSb}(R) \rightarrow \text{aCSb}(R) \).

The primary referent of sovosi 'same-sex co-sibling-in-law' is the man who marries male ego's wife's sister or, conversely, the woman to whom female ego's husband's brother is married. It extends to the spouses of any two people for whom term neta 'same-sex sibling' is appropriate (Rule G).

3.3 SPOUSE AND CO-PARENT-IN-LAW

Returning to Figure 4, there are a few terms for spouse, co-wife, and for the parent of a child's spouse which require little comment. Husband is referred to as sawa, wife as vinie, but not by the husband and wife themselves. They refer to one another as 'father' or 'mother' or by tekronymy as the parent of such-and-such a child.

Two women married to the same man are referred to as alata 'co-wives'; They refer to each other as 'elder mother' or 'younger mother' or by tekronymy through their children.

The respective kinsmen of a man and his wife refer to each other, irrespective of sex, as hai 'co-kinsmen-in-law. The primary referent is a child's spouse's parent, but it extends to any kinsman of any kinsman's child's spouse (Rule 0).
4. SUMMARY

Filial kinship is most important in three central generations with a single grandkinsman term merging all more distant kinsmen. In adjacent generations, ego divides kinsmen as to parallel or cross, regularly distinguishing the sex only of senior kinsmen. In ego's own generation, seniority is marked for same-sex kinsman, but relative sex is in focus for opposite sex generation peers. Seniority is conceptualized in terms of the relative age of the siblings from whom generation peers descend. Stepkinsmen, the spouses of the senior kinsman and the junior kinsmen of spouse (Lounsbury 1965), are classified with filial kinsmen.

Kinsmen-in-law encompass generation peers and ascending-generation kinsmen of spouse as well as spouses of generation peers and descending-generation kinsmen (Lounsbury 1965), except that the spouses of elder spouse are classified as stepkinsmen and are therefore merged with filial kinsmen.

Note:

1 Published also in Merrifield, Gregerson and Ajamiseba, Gods, Heroes, Kinsmen, Jayapura: Cenderawasih University and Dallas: The International Museum of Cultures, 1983, 244-253.

References:

Lounsbury, Floyd C.


IKHTISAR


Kemudian hasil pemeriksaan itu dibandingkan dengan apa yang umumnya dianggap sebagai ukuran baku. Dalam berbagai hal terdapat perbedaan yang berarti antara apa yang tampaknya biasa bagi orang Berik dan apa yang dianggap "biasa" oleh para penulis buku-buku kesehatan.

Menurut orang Berik seorang dikatanah sehat apabila orang itu memiliki kulit yang baik, darah yang baik dan gemuk. Ia tak berpenyakit yaitu tidak demam, atau sakit dan tidak kurus. Bagi mereka hal-hal berikut ini tidak dianggap sebagai penyakit, antara lain, tinea imbrikata, filariasis, infeksi pada kulit, batuk kronis, perut membesar akibat cacung, kadas, sakit mental. Mereka berpan-dangan bahwa penyakit itu mungkin disebabkan oleh cuaca (angin dan hujan), 'darah kotor', berbagai upacara tiapan, menggosok-gosok daun, mengisap darah, mengerok kulit, dan dengan menyembah dewa-dewa atau roh-roh agar memperoleh bantuan dari mereka. Yang jelas tidak ada, adalah penggunaan obat salap atau obat yang diminum.

Kesimpulan dari studi ini diharapkan akan memberikan bantuan kepada para petugas kesehatan dari luar yang beker-jja di daerah terpencil di mana masyarakatnya masih tergan-tung pada alam. Para petugas tersebut hendaknya memberi pertimbangan yang matang terhadap kebiasaan-kebiasaan dari masyarakat itu dan janganlah memakai ukuran-ukuran dari luar kepada mereka.

Kiranya sesorang diispersiakan dengan baik untuk menolong, mengobati, dan mengajar hal-hal yang herhubungan dengan penyakit-penyakit yang telah diketahui, dikenal, dan ditakuti sebelum menyusun program-program kesehatan dalam bidang-bidang yang tidak dikenal sebagai suatu masalah atau penyakit oleh masyarakat itu.

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3.0 Summary

0. INTRODUCTION

The Berik people comprise about one thousand persons settled in ten villages along and near the middle and upper Tor River in Jayapura District, on the North Coast of the Province of Irian Jaya, Indonesia. The Tor originates in the Gauittier mountains in northern Irian Jaya and follows the meandering course northward at about 100 meters elevation through tropical rain forest and sago swamp, and flows out into the Pacific Ocean 25 kilometers east of the town of Sarmi. For more details on the geography of the Tor area see Oosterwal (1961:9-18).

The climate is typically equatorial—hot and humid. Daily temperatures range from 25 degrees to 35 degrees C.; humidity is 70% to 95%. It rains daily.

Each of the ten villages is composed of several nuclear families, although several families also have a member of their extended family residing within the household. Descent is bilateral and residence is patrilocal. Sister exchange is common in marriage. Villages are located so that the population can be supported through the exploitation of sago, the staple food of the Berik.

The Berik people may be classified racially as Melanesian, following Garn (1961:127-32) who divides Melanesian into Papuan, found in the highlands, and Melanesian found along the coasts.

Berik is a non-Austronesian (Papuan) language of the North Papuan phylum and the Tor stock. The Berik are the largest of the middle and upper Tor ethnic groups and their language serves as a lingua franca for the Tor and the Segar Tor at the Tor's headwaters.

When Chinese bird traders came to Irian Jaya they brought with them Chinese porcelain. According to the Berik, the traders were in the Tor area in the 1800s, and the Berik still have small pieces of the porcelain which are used as part of a fire lighting tool, the tatabanik.

Both before and after World War II, when the island was under Dutch control, Eurasian copal traders set up an operation for removing copal resin (dammar) from the Agathis tree for exportation. Thus, the Berik were employed by outsiders for the first time and a money system introduced to them (Oosterwal 1961:94).
In 1959 G. Oosterwal spent one year in the middle and upper Tor area studying the several ethnic groups there.

After an initial linguistic survey in March, 1973, the Berik people invited my husband and me to live and work among them. In October of that year we set up residence in the village of Tenwer. Our work has included learning the language, linguistic analysis, anthropological observations, and medical work.

The Berik people began requesting medical help from the first week of our residence among them. As a registered nurse, one of my early frustrations in helping them was in the kinds of problems for which help was requested. Some people would die without having asked for help. Others, with seemingly minor complaints, usually involving blood loss, would urgently request immediate aid. Only rarely has someone requested help for ringworm (tinea imbricata). When basic laboratory work was done the results were often found to be far from generally accepted 'norms'.

Questions arose. What is normal for the Berik people? Are norms that Western medical personnel apply to Western people valid and applicable to the Berik? What do the Berik people regard as normal, as healthy, as sick? It seemed evident that they could be better helped if their views were understood and their averages, or 'norms' were known.

In considering answers to such questions, it was of interest to me that these concerns had been addressed by others. Hughes (1969:153) for example, has written:

A theory of disease implies a theory of normality. Yet the 'normal' is in no way easy to define for all times and places. Aside from the questions of a statistical versus a 'functional' basis of normality, there is a cultural definition. Afflictions common enough in a group
to be endemic, though they be clinical deformities, may often be accepted simply as part of man's natural condition. Ackernkalt (1946), for example, has noted that the Thonga believe intestinal worms, with which they are pervasively affected, to be necessary for digestion; the Mano, also of Africa, feel that primary and secondary yaws are so common that they say, "That is no sickness; everybody has that." North Amazonian Indians, among whom dyschronic sippershowestosis is prevalent, accept its endemicity to such an extent that its victims are thought to be normal, and individuals who have not had the disfiguring disease are said to be looked upon as pathological and consequently unable to contract marriage. It is culture, not nature, that defines disease, although it is usually culture and nature which foster disease.

Just as Margaret Mead questioned the validity of G. Stanley Hall's theory that the storm and stress of adolescence are natural parts of growing up and entertained "an alternative hypothesis that the emotional disturbance by adolescents in American and Western European society is a psychological reaction to specific stresses built into American and European cultures," so I question the assumption that standard 'normal' values of temperatures, pulse, respiration, blood pressure, hemoglobin, and white blood count should, for example, be applicable to all people.

1.0 The Survey

In order to begin this study, I conducted a survey of the Berik people examining only those members of the culture that they themselves described as healthy, i.e., those that could carry on their normal daily tasks. Items selected to be examined were those within the range of my training and experience. A large (27 cm. by 72 cm.) chart was made with the following vertical columns: village, name, sex, age, height, weight, temperature, pulse, respiration, blood pressure, hemoglobin, white blood count, urinalysis, hair, ears, throat-mouth-teeth, lungs-chest, abdomen, comments. I attempted to examine 10% of the population, one hundred people, ten from each of the ten villages including five males and five females from each village, and to choose from each sex one person described as 'old', two adults, one child and one baby. Horizontal rows of the chart were then labeled with specific designations of sex and age.

During one week in June, 1981, my husband and I visited each of the Berik villages, traveling by foot, canoe, and helicopter. A government medical officer, Matius Sangga, was assigned to help in this study and I am grateful for his cheerful and efficient help. News of the survey was sent to each village the previous week.

Upon our arrival in each village, the headman and teacher (if present) were contacted and the details of the visit and work were explained. The headman and teacher then enlisted the help of the people, who divided themselves into two groups, healthy and sick. The ten people to be examined were chosen from the healthy group and given clean paper drinking cups for a urine specimen. (This request was considered to be very amusing). Mr. Sangga estimated the age and measured the height, weight, temperature, pulse, respiration, blood pressure, and noted the color of hair and number of teeth of each person. When finished, he gave whatever aid was necessary to the sick. The people were also questioned regarding villagers with abnormalities or deformities. A total of four hours was spent in each village during this survey.
1.1 Survey Results.

1.1.1 Age.

Although the goal was to examine 10% of the Berik population, only 9% were examined. This was due to the fact that the village of Winamase (Figure 1) was empty. The people were apparently our hunting and gathering sago. In other cases, healthy people of the age and sex desired were not available. Figure 2 shows the ages of those actually examined.

1.1.2 Height.

The method of measuring height for those over the age of two was to firmly place a pole in the ground and then using a standard measure, five centimeter intervals were marked on the pole. Each person stood erect, with his head to the pole, in bare feet, looking straight forward with arms straight at his sides and heels together. The measurement from the ground to the vertex of the head was recorded. Infants were measured by holding them upside down with the end of the measuring tape placed even with the bottom of the feet measuring from the feet to the head.

The shortest adult measured was a 29-year-old male from Buruwate who was 125 cm, and the tallest adult was a 49-year-old man from Bore who measured 177 cm. Figure 3 shows that the range is from 93% of the men to be from 1.49 to 1.77 meters, the mean height being 1.63 meters. The range for 100% of the women is from 1.40 to 1.65 meters, the mean height being 1.51 meters. The overall average for the Berik adult is 1.57 meters. These findings compare with Oosterwal's statement (1961:15) that Berik people are "on the tall side, the men averaging 1.73 m and the women 1.65 m."

As a group, the people from the village of Dangken are the shortest, with an average of 1.49 meters for adults; and the people from Tabfare are the tallest with an average height of 1.64 meters. In Tabfare, the southernmost village at the headwaters of the Tor, there is a greater abundance of protein from the game animals in the diet of the people. Perhaps this is a contributing factor to their greater height.

Information concerning the length of babies at birth is unavailable.

Figure 2. Ages of those examined.
1.1.3 Weight.

The weight of persons over the age of two was measured by a standard American-made bathroom scale set flat on the ground. The people were scantily clothed.
It was not possible to weigh each person the same number of hours after a meal. The weight of children under two was calculated by weighing mother and child together and subtracting the mother's weight.

The lightest adult person weighed was a 45-year-old female from the village of Dangken, 26.8 kg. The heaviest was a 29-year-old man from Buruwater, 75.9 kg. Figure 4 shows the relative ranges for men and women in both the 40-years-and-older group and the 16- to 40-year-old group. The average woman weighs 12 kg less than the average man.

People from the village of Kondirjan averaged the lightest, 44.2 kg; and those from Tabfere, who are also the tallest measured, averaged the heaviest, 53.6 kg.

Adults over 40 averaged five kg lighter in weight (45.7 kg) than adults between the ages of 16 and 40 (50 kg). This reflects the general nutritional level of older people. Once they are unable to gather their own food, they eat considerably less.

The birth weight of newborns is unknown.

Figures 5 and 6 show the height and weight of Berik adults examined. 29% of the men fall within the desirable weight range for their height as given by the Merck Manual (1977:1126). 46% of the men are below the weights given as desirable for those with a small frame. 12% of the women fall in the desirable range and 84% are below that suggested. I suggest that a scale with slightly lower ranges, especially for women, would be more appropriate for the Berik people than that given in the Merck Manual.

1.1.4 Temperature.

Approximately 10% of the temperatures were taken using an oral thermometer giving the temperature in Fahrenheit. These readings were later converted to the axillary centigrade equivalent. 90% of the temperatures were taken by the government medical officer using an axillary thermometer giving the temperature in centigrade.
Figure 7 shows the percentages of temperatures at each reading. The average is 37°C centigrade, axillary. This is one degree higher than that generally considered 'normal' (Merck, 1977:4). The time of day temperatures were taken did not seem to be a determining factor since the temperatures that averaged 37°C or above were taken in both mornings and afternoons: in Dangken at 9-12 a.m., in Bore at 1-4 p.m., in Buruwater at 8-11 a.m., and in Tabfere at 1-4 p.m. Temperatures that averaged below 37°C were taken in Tenwar at 1-4 p.m., in Sansiat at 8-12 a.m., and in Somane te at all times of the day.

The question arises as to whether westerners living in the same climate have a higher than 'normal' temperature. The temperature readings of seven westerners in the same climate averaged 36.8°C axillary.

Berik women over 40 and children averaged over 37°C, while other groups averaged under 37°C.

![Figure 7. Axillary temperatures.]

My conclusion then is that for the Berik, axillary temperatures of 37°C should be considered normal, that 38°C be considered as a low grade fever, and 39°C and above treated as fever.
1.1.5 Pulse.

10% of the pulse rates were checked by the writer and 90% by the government medical officer. The radial pulse was taken for 15 seconds and multiplied by 4.

Figure 8 shows the ranges in pulse for the various age groups. The lowest adult pulse was 60, and the highest was 120. The average is 86 beats per minute with the majority of the adults ranging from 70 to 100. "The average adult heart generally beats 72 to 78 times/min.," according to Merck (1977:427). Below 60 is considered bradycardia and above 100 is considered tachycardia. The average Berik pulse is 12 beats faster than 'normal' even though the Berik are physically active in hiking, hunting, and working. Western athletes who are physically very active are known to have lower than 'normal' rates. Perhaps the higher norm among the Berik is due to the higher body temperature, since 10 extra beats can be expected for each degree of temperature elevation (Field Workers Medical Manual, 1973:488).

Comparing the averages of various villages it is noted that people living in the upper Tor have higher pulse rates than those in the middle Tor. Children's pulse rates average about 20 beats higher than those of adults, as was expected.

1.1.6 Respiration.

Again, 10% were taken by the author and 90% by the government medical officer. Respiration rates were counted for 15 seconds and multiplied by 4.

Figure 9 shows the range for an adult to be from 16 to 40. The average is 26. "The normal range for an adult is 14 to 18 per minute," according to the Field Workers Medical Manual (1973:489). Once again the Berik norm is ten points higher. As expected, rates for children are relatively higher than those for adults. The higher rate among adults is again surprising since the Berik are a physically active people. Perhaps it can be explained by the amount of smoke inhaled. The Berik keep smoky fires going almost continually to repel insects. Fires are also kept going at night for warmth.

Figure 9. Respiratory rates.

1.1.7 Blood Pressure.

Pressures were taken on those over the age of five since a child's cuff was not available. Subjects were seated with the left arm resting on a table; all were in a resting state.
Figure 10 shows the ranges of systolic and diastolic readings and also the relative ratio between the two for men and women over 40 and also those from 16 to 40. Since the 'normal' pressure is 120/80, with the range not going over 140/90 and not lower than 90/60 (Field Workers Medical Manual, 1973:19), we observe that the Berik people fall within this range. With an average of 100/70, however, and systolic ranges for men of from 92 to 112 and for women from 80 to 120, and diastolic ranges from 55 to 108 for men and 45 to 80 for women, the medical workers would be well advised not to be overly concerned with systolic pressures in the 80's or diastolic pressures in the 60's. On the other hand, one should be concerned and investigate further the health of those with systolic pressures over 120 and diastolic pressures over 80. Likewise, one would want to investigate further if the ratio between systolic and diastolic pressure were closer than 20 mm.

One might wish to consider why the Berik people have a lower blood pressure in these days when hypertension is such a problem in the West. It could be theorized that the lack of pressure from time and competition could be the reason. For example, Berik people do not want to compete. Even in group games such as volleyball, no one wins. When asked, "Who won?" they respond, "Everyone won." Salt is also rarely available in the area, though it is highly desired and frequently requested.

1.1.8 Hemoglobin.

All hemoglobin determinations were done by the writer using the Sahli Adams hemoglobinometer.

Figure 11 shows the results of these examinations. The average is 10 g, with the range for men being from 9 to 13 g and for women from 3.5 to 11.5 g.

The highest average hemoglobin was found in Somanente, which is interesting since it was noted that the group with the best nutrition is probably Tabfere. The lowest average hemoglobin was found for the people in Jerim.

Generally speaking young adults have higher hemoglobin and infants lowest. Men generally have a higher hemoglobin than women, especially women of child-bearing-age.
In a Medical Laboratory for Developing Countries (1973: section 7.4) the normal hemoglobin is given as from 14 to 18 g for men and as from 12 to 16 g for women. "14.8 g of hemoglobin is often taken as an average normal... Patients who have less hemoglobin than this are said to be anaemic." According to this value system all of the Berik examined were found to be anaemic. Since those examined all considered themselves to be healthy and to have 'good blood' and since in fact all were going about their normal daily activities of hunting, gathering, building, etc., it may be unreasonable to apply the Western value system to the Berik people. I suggest that hemoglobin values of from 9 to 11 be considered normal for the Berik people and that the medical worker routinely treat those whose hemoglobins are below 9 g. Considering the high incidence of enlarged spleen among the Berik, malaria may be an underlying cause of the low hemoglobin values.

1.1.9 White Blood Count

All WBC determinations were done by the author using a standard Neubauer counting chamber.

Figure 12 dramatically shows that children of from 1 to 10 years of age have a substantially higher count than others examined, although all age groups have a very wide range. The extremes for the age group from 6 to 10 were from 8,500 to 20,900 with 50% being above 10,000. 64% of the children from 1 to 5 years of age were also above 10,000. The majority of the rest of those examined fall within the 'normal' range of 4,800 to 10,800 (Merck, 1977: 2072), the overall average being 8050. The highest counts were noted in Jerim (9,688) and the lowest in Sumanente (4,863).

Figure 11. Hemoglobin values, with 'normal' ranges taken from King (1973).
1.1.10 Urinalysis.

Difficulty was encountered in collecting urine specimens. First of all the people laughed, apparently from embarrassment or perhaps there was apprehension since excrement is used in sorcery. Clean paper drinking cups were given to each subject. No attempt was made to explain the concept of a mid-stream specimen.

All specimens obtained were examined for color, sediment, opacity, and (microscopically) for white blood cells, red blood cells, and bacteria.

Urine specimens that were clear yellow in color with no blood cells or bacteria seen are charted in Figure 13 as normal. 68% of those examined were 'normal'. 16% of the urine specimens examined were very dark in color; 80% of these were adult males. 7% (5 specimens) of those examined had white blood cells, one specimen had pus, and one, bacteria.

All specimens from Somante and Jerim were normal.

Combined with observations of skin and tissue turbidity it can be said that a state of dehydration is apparent among older people. It does not appear to be causing them any difficulty, however. Hopefully, young people in school will come to appreciate the importance of drinking sufficient fluids and thus when they are old this condition will decrease. There does not appear to be any correspondence between urine color and spleen enlargement.

1.1.11 Hair.

Notation by the government medical officer was made on the hair color of each person examined. All Berik people have thick woolly hair; there is no baldness. It is not uncommon, however, for the Berik to shave off all of their hair to rid themselves of head lice. 83% of those examined had black hair.
Three albino people has been seen in the Tor area; their hair color is reddish brown. Greying and white hair was noted in those over 40. Many babies have thick 'cradle cap' with infected sores.

Figure 14 shows that reddish or yellowish hair is most prevalent among children, especially the 6 to 14 year olds, reflecting a lack of protein in the diet.

Only 50% of those examined in Bore had black hair. 70% of the people of Jerim had black hair.

1.1.12 Ears.

The writer examined the ear canals and drums of each subject. Since she has had a minimum of experience in this area, only grossly abnormal conditions were noted (Figure 15).
87% of those examined were normal. Scar tissue was seen on three drums, three drums had holes, two drums were opaque, two were draining, two drums were quite red, and one person complained of tenderness upon examination. Very black wax was noted in the ears of seven people. An abnormality was noted for 24% of those over 40.

The hearing of the Berik people seems to be good. There are two persons known to be deaf, a man over 40 in Tenwer and a 20-year-old man in Tabfere.

1.1.13 Eyes.

Due to lack of training and experience, ophthalmic examination of the eyes was not done. Berik people have black irises and the whites of their eyes tend to be yellowish. A 59-year-old man in Burowater had bilateral cataracts. The Berik report that there is a 35-year-old blind woman in Tenwer and three other Berik who have very poor eyesight: a 45-year-old man in Kondirjan, a 40-year-old man in Dangken, and a 50-year-old man in Sansiat. One 10-year-old boy in Dangken needs to flex his head and peer up in order to see.

1.1.14 Throat, mouth, teeth.

Using a flashlight, the government medical officer counted the number of teeth of each person and noted their general condition. The throat, condition of the gums, and bucal mucosa were examined by the writer.

No dental care is available in the Tor and mouth care is not practiced. Person over the age of 10 smoke, some heavily, and most chew betel nut. 72% of the adults had 32 teeth. The teeth of one four year old were described as rotting. A 45-year-old woman in Dangken had only 7 loose, rotting teeth; the gums were severely receded. 21% of those examined had darkly stained, not white, teeth.

Large, irregularly shaped black or purple spots were noted on the tongue and mucosa of 9% of those examined.

Bleeding gums were noted in a one-year-old girl from Sansiat and a three-year-old boy from Boro. Mothers from these villages often bring their babies to the clinic in Somana. They ask for medicine for bleeding gums. It is estimated that babies get their first tooth at about one year of age. A three-year-old girl with thrush was seen.

Throat examinations proved negative with the exception of a 24-year-old man with enlarged tonsils.

1.1.15 Lungs and Chest.

The writer auscultated the lungs of each subject. Heart auscultation was not attempted due to lack of training and experience.

Rales were heard in a 40- and a 59-year-old male, a 29-year-old female, and a two-year-old male. Two of these were coughing. Coughing without fever is not considered sickness by the Berik people. A barrel chest appearance was noted on four children (Figure 16).

Figure 16. Measurements of 'barrel-chested' children.

<table>
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<tr>
<th>AGE</th>
<th>SEX</th>
<th>HEIGHT</th>
<th>CHEST</th>
<th>ABDOMEN</th>
<th>UPPER ARM</th>
</tr>
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<td>F</td>
<td>70</td>
<td>42</td>
<td>47</td>
<td>--</td>
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<td>M</td>
<td>109</td>
<td>59</td>
<td>--</td>
<td>13</td>
</tr>
</tbody>
</table>

1.1.16 Abdomen.

The writer palpated the abdomen of each subject. Western medicine considers it abnormal for either the spleen or the liver to be palpable.
Figure 17 shows the high incidence of enlarged spleen and especially the severity of this condition among the children. 17% (4 of 23 examined) of the children under five had spleens palpable to the pubic bone. In addition, twelve children, two adults under 40, and one adult over 40 had spleens palpable to the umbilicus.

Considering the findings by village: of those examined in Dangken only one out of eight had a negative abdomen, two out of ten in Tenwer were negative and three out of nine in Jerim were negative. The people of Boa might appear to be the healthiest since six out of eight examined had negative abdomens. One umbilical hernia was observed.

It can be concluded that the abdominal problem is widespread and is not recognized as a problem or as being connected with malaria. The low incidence of splenic enlargement among adults could be cited as a function of survival of the fittest.

1.1.17 Other General Observations.

All of the following notations made by the writer of the government medical officer are considered deviations from Western norms.

Tinea imbricata was noted in three of those examined. A 10-year-old boy had a tropical ulcer on his leg. One 4-year-old girl had multiple warts on the abdomen. A 58-year-old lady had an atrophied right leg and used a pole for walking. Four females, all under the age of one, had scabies with secondary infection. Elephantiasis was noted in a 48-year-old female. Pierced ears, nasal septum and the bridge of the nose were also noted.

People not examined, but reported by the Beriks as being 'different' were three who cannot walk properly, a man who is 'possessed', a man with bilateral elephantiasis, and a 30-year-old man who has been hoarse since childhood.

1.1.18 Summary.

85 of the 1034 Berik people (1981 government census) were examined. All considered themselves healthy and in fact were carrying on normal daily activities.

It was found that the average (normal) Berik adult is 157 cm tall, weighs 48.2 kg, and has a blood pressure reading of 100/70. The average Berik has a temperature of 37°C axillary, a pulse of 86 beats per minute, a respiratory rate of 26. The average Berik person has black hair, good hearing and sight, and an enlarged spleen.

I suggest that accepted 'normal' values for desirable height and weight, temperature, pulse, respiration, blood pressure, and hemoglobin are not applicable to the Berik people and that consideration should be given to the findings of this survey when evaluating their medical needs.
BERIK VIEW OF HEALTH AND DISEASE.

When Beriks were asked, "Who is healthy?" or "What does it mean to be healthy?" they answered that a healthy person has good skin (body) and blood and is fat. He has no sickness, that is, no fever or pain and is not thin. "He is not in a bad state."

The American Heritage Dictionary (1978:607) states that "healthy stresses the absence of disease, often implies energetic activity." It refers to both physical and mental condition. It can be observed that the American and Berik definitions of health are quite similar; both express the idea with a negative, health is the absence of disease. The following conditions, however, which are classified as illness in Western medical practice, were all found among those classified by Berik people as "healthy": anemia, kwashiorkor, otitis media, cataracts, scurvy, chronic coughs, enlarged spleen, tinea imbricata, tropical ulcers, filariasis, dehydration, scabies.

Hughes (1978:151) uses the term 'ethnomedicine' to refer to "those beliefs and practices relating to disease which are the products of indigenous cultural development and are not explicitly derived from the conceptual framework of modern medicine." Discussion with Berik helpers verifies that conditions considered abnormal in the West are normal to them. The following conditions are not considered disease by the Berik: tinea imbricata, filariasis, tropical ulcers, chronic cough, enlarged abdomen from worms, scabies, mental illness. Blindness and deafness are also not considered illness, but are considered abnormal. In both the American and Berik views the degree of incapacitation is a determining factor in deciding whether or not someone is sick. It is interesting that when the Berik helpers were asked why a person is mentally ill the response was that "the brain is turned around in their head." They are not sure why it is turned around, maybe a spirit did it or maybe the person was frightened by a spirit. Having enough blood is very important to the Berik. They say that when much blood is lost one gets thin and weak. One can get more blood by eating a lot. When a person dies, i.e., when he quits breathing, his blood does not flow, it is dry. It goes into the ground and decays. When I asked if blood would flow if a dead person was cut, they said no.

2.1 Prevention of Disease.

The Berik feel that the prevention of disease can be helped in the following ways:

1. By eating the right foods, such as: various fish (this includes shrimp and turtle), birds, pork, chicken, large frogs, eggs, sago, sweet potatoes, rice, various green leaves, mushrooms, breadfruit, bananas, papaya, and mother's milk.

The people are generally settled in the villages from which they go out to hunt animals and gather sago and vegetables. Smaller shelters are built near gardens that are planted with corn, bananas, sugar cane, tapioca, and root tubers. Fishing is done by various methods in the Tor River and in small streams. Usually the people return to their village home each evening, but it is not uncommon for a family to be gone from the village three to seven days.

Foods that are bad to eat are: worms, eagles, and pigs you kill yourself. Worms may cause stomachache and fever, the eagle causes sores, and eating a pig you killed yourself causes stomachache, diarrhea, and even death.

Children should not eat rats, yellow frogs, or snakes. If they eat rats, the spirit of ninsar will be angered and they will get sick. Eating yellow frogs causes stomachache and fever and eating snakes causes fever and vomiting.
Sick people should not eat anything, but they may drink hot water for chills. Vegetables, especially, are thought to intensify their illness by giving them a stomachache and drinking cold water will cause chills. It has been observed several times that sickness has progressed and death has resulted because the patient was given nothing to eat or drink.

2. By bathing daily in the morning. If one does not bathe, the dirt will mix with sweat and enter the body through the hair follicles.

3. By bathing before you sleep and not sleeping in a dirty place.

4. By eating more than once a day.

5. Upon inquiring how one can prevent boils, the Berik explained the following: one should take some pus from a boil and cook it with sago flour and leaves. If this mixture is fed to children, they will not get boils for one or two years. When I asked if my three language assistants had fed this to their own children they said no. But they did give the name of a man who claims validity for the treatment.

2.2 Diseases and their cause.

Having discussed the concept of being healthy, we now turn toward a discussion of illness. The following diseases are those listed by the Berik, in the order in which the Berik people listed them for me.

2.2.1 Chills.

Chills are caused by the weather. When it rains or is windy a person gets chills. No spirit is identified as being connected with this.

2.2.2 Boils.

People get boils during the breadfruit, matoa, and pandanus fruit seasons. It is not known why. Boils also come from bad or dead blood which is black, as with a bruise. Black blood can gather and cause a boil. This shows that bad blood can triumph over good (red) blood. Unlike the neighboring Bauzi group, the Berik do not believe boils come from dirty water or flooding.

2.2.3 Swollen Abdomen.

This comes from either blood collecting in the abdomen or from worms in pork and cassowary meat. It is not known why blood collects.

2.2.4 Ninsar.

The word ninsar refers to the milkwood tree. Every milkwood tree has a female spirit which may be angered in a variety of ways—by cooking pork in the wrong manner, by eating pork with fish or shrimp, by killing a pig which was found in a hole by the hunting dogs and then telling other people about it. The spirit will be angered if a baby eats the eggs of two types of jungle chickens (yagin or twabe). In the village of Tenwer there is a blind woman. It is said that she is blind because when she was small her mother ate atwil, a baby rat which belonged to a ninsar spirit.

Each ninsar spirit has a name. A man owning a ninsar tree is also said to own the spirit in that tree. One man has a spirit named Ballawe. It is a good spirit, can be seen by the man who owns it, wears no clothes, and can eat. It has its own source of food.

When Oosterwal (1961:263) stated "sickness is considered an evil spirit," he was undoubtedly referring to this ninsar sickness.
Some Berik people say that ninsar is not as powerful as it was since the Christian message has come to the Tor area.

2.2.5 Moten.

Oosterwal (1961:265-71) described this sickness as being caused by sorcery (suangí). The Berik say this type of sorcery is known in Irian Jaya east of the Mamberamo, especially among the Segar, Kwerba, and Berik people. It is utilized when people get angry at someone. A man may become angry if he is refused the woman he has requested, if someone cuts down one of his trees, or if someone steals his firewood. It is interesting that the Berik say people in each village can perform sorcery which will cause this sickness, but they would not name someone who had done so. No one would ever admit to it for then someone would perform it against them. They say that even I could perform the ritual, but no Berik would teach me; I would need to be instructed by someone from another language group.

The information given today on this is basically the same as related by Oosterwal twenty years ago. Refuse such as banana skins, breadfruit seeds, leftover sago pudding, cigarette stubs, hair, fingernails, or nasal ornaments is needed from the person to be cursed. Oosterwal mentions that excrement from man or animal and also menstrual blood is used. He states, "That is one of the reasons why the women never remain in their village during their menstruation periods, but go and live during these days in absolute seclusion." It is no longer the practice of women in the middle Tor area to go out of the village during menstruation; I do not know if it still applies to the upper Tor. Tor villages are always very clean, excrement is not allowed to lie about even for a few minutes. Perhaps this is related to a concern about sorcery.

To carry out sorcery, refuse is bundled and burned at the base of the banyan tree (gwef). It may be passed to several people before it is finally burned so that many know sorcery is being performed on the person. The person then falls sick, gets weak, yellow, cannot eat or drink (but can talk), the eyes finally roll back in the head and the person dies.

An interesting story is told that a person performed moten sickness against himself. There was a Segar man who saw a nasal ornament (septum plug) on the ground so he picked it up and thought "I will make someone sick with this." So he performed the ritual and then got sick himself. It turned out to be his own nasal ornament. This backfiring of evil intent is considered very humorous to the Berik.

When a person dies, the people accuse the residents of another village of causing the death via moten. It is possible to be warned about a curse being placed on you. If you dream of eating large quantities (a dishpan full) of pandanus fruit or breadfruit, you know someone has cursed or will curse you.

In 1980 we witnessed the death of a 26-year-old man and his 6-year-old child. Though we were unable to diagnose the illness, which manifested itself with fever, weakness, chills, pain in the left buttocks and thigh, treatment was given for both malaria and infection. The Berik told us it was useless since the man and his daughter had both been cursed and would die. They were not given any food or drink.

2.2.6 Iris Anggwa.

This is both the name of a spirit and a disease. The spirit can appear as a snake, a possum, or as a man. It can also be invisible, but can be heard making a whistling noise.

If a woman goes to the jungle or garden or to pound sago and it is raining and thundering (the word meaning thunder is iris), and her husband is not around, the spirit can come and rape her. If the spirit takes the likeness of a human it will look like her husband. Later she gets sick
with lethargy, fever, aching, and bloody stools. If the blowing treatment (see treatment section of this paper) is not performed using irs anggwa words, the woman will die. If the blowing ritual is performed, she will live. She is also known to have been raped by this spirit when an irs anggwa child is born. Such a child is not human - it has no face, but does have a mouth. The extremities are like a frog and it may have a tail. It is said that such a child was born in the village of Dangken on November 13, 1981. As is the practice, the child's throat was cut with a machete and it was buried as "it was no good, it wasn't human". At night the spirit of the child haunts the mother. Whistling can be heard and the mother feels sick.

2.2.7 Bites.

Bees, snakes, centipedes, and scorpions may cause illness. The part of the body that they bite becomes very painful and swollen and a person may die.

2.2.8 Aching.

Aching of various parts of the body, especially the back, can occur from carrying heavy loads. The cause of headaches is unknown.

2.2.9 Sick Legs.

When a person walks in the jungle he can be bitten by flies, mosquitoes, and blood suckers. This results in pain and perhaps swelling. When the blood suckers are taken off, bad, black blood can be seen in them. Blood suckers are not used to rid the body of 'bad blood' because the loss of blood causes sickness.

2.2.10 Kwimal.

This sickness may be categorized as sorcery like moten, but is, according to the Berik, distinctly different. Oosterwal mentions this (1961:267) as 'bow-and-arrow soeangi'. As

with moten it may be utilized when angry with someone.

An arrow with a tip made from the bone of a bird is bound to a vine and shot in the direction of the victim. The arrow flies in the direction of the victim, but falls to the ground checked by the vine.

If the victim is then walking in the jungle and is bitten by a snake, another person should kill the snake and dissect it to see if it has eaten sago, charcoal, or rat. If those items are found in the snake's stomach the people know that kwimal has been performed against the victim. The people become very excited and run here and there with the news. The person quickly, perhaps within a few minutes, gets weak, develops a fever, and dies. Nothing can be done to help the victim. It should be noted that the snake bite is not obligatory to the success of the kwimal ritual. The contents of the snake's stomach are proof that sorcery has been performed.

It is said that when a victim is finally very sick from moten, the person who placed the curse may then use the kwimal ritual to precipitate the victim's death.

2.2.11 Teeth Sickness.

Many children have this. It is not known what causes it, but it is manifested by bleeding gums. Parents often bring their children and ask for help with this condition.

2.2.12 Water Sickness.

If a person develops a fever, chills, and vomiting after having spent time in a particular body of water, his malady is called by the name of that body of water. A person who becomes ill after having been in the Tor River, for example, is said to have tori sickness.

2.2.13 Sickness Resulting From the Breaking of Taboos.

If one pronounces the name of an in-law, he feels ashamed and develops a fever, headache, and stomachache.
2.3 Treatments.

2.3.1 Blowing.

Anyone may learn the blowing (tatenggana; Indonesian, tiup) ritual, but only some learn and practice it. Fathers teach their sons and mothers teach their daughters. In the past, young men were taught during initiation.

This ritual (Oosterwal 1961:264) includes cupping the hands over the sick body part, blowing on the body, chanting, and then blowing and throwing the hands into the air. It is common among many people of Irian Jaya. The sick person must call for a blower and special words for that sickness must be used.

Diseases for which this treatment is used are ninsar, irs anggwa, snake and centipede bite, and water sickness. In the case of treating ninsar something intimate, such as a piece of the person's clothing, hair, or nails, is taken, wrapped, and held during the blowing.

2.3.2 Nettle Leaf Rubbing.

There is a leaf that produces intense itching and heat upon skin contact. This leaf is rubbed on the sick part of the body, as on a boil or over a bruise, on the back for backache, or on the forehead for headache. It may be rubbed on the whole body for fever. It is not used on wounds, open sores, or where there is a break in the skin.

2.3.3 Sucking Blood.

This ritual is performed only by women. The Berik state that the Kwerha, Berik, and Mander women know this ritual; but other neighboring groups--the Sobei, and Isirawa people--do not. The Berik do not know if other groups know of it.

This treatment is used for boils, swollen stomach, ninsar, moten, snake bites, any body ache, sick legs, ulcers, and kwimal.

The healer places a dal leaf somewhere on the body of the sick person. The writer observed it on the upper back over the scapula. The healer then rubs her tongue quickly on the leaf and hums and makes other sounds. Blood soon appears, drips from the mouth, and is spat on the ground. The people say they don't know where the blood comes from, but they believe it to be the blood of the sick person. On examination no abrasion was seen on the back of the sick person, but the tongue of the healer was abraded and bleeding freely. It is said that the healer has sore lips for a few days. A sore tongue is denied.

The treatment is said to be very effective. The sick person expects to be well within one day. A recent example is cited of a child with a swollen abdomen who was treated and regained health quickly. On questioning it was learned that the local government health officer also gave requested medicine.

Oosterwal speaks of this treatment (1961:264) and also speaks of the belief of the people in relation to seoangi (1961:270-71). He states: "This belief is irrevocable. The facts in themselves are of no consequence. The belief itself is the foundation of these facts.... Here we have to deal with a psychosomatic phenomenon.... In that belief lies man's certainty (substance of things) that nothing in this life is left to chance, but that even disease and death are caused by human actions." It is submitted that their belief in their treatments is also "the foundation of these facts."

2.3.4 Chills.

Chills are treated by lying near a fire and drinking hot water.

2.3.5 Skin Scraping.

Any sharp object--thorn, carved piece of hard wood, razor, knife--is used to abrade the skin over a bruise, boil, or any aching body part. Bad blood then comes out. After bad blood is out, remaining blood is normal again. Surprisingly, infections in these areas are rare.
2.3.6 Ninsar Cure.

To cure someone of ninsar illness, one should take an arrow, wrap it with an item of clothing from the sick person, and go into the jungle to look for the ninsar spirit. The spirit will throw a leaf from a tree. Take the leaf and wrap it with the clothing and put it under the arm or near the sick person, who will recover in from one three days.

Treatments mentioned by Oosterwal (1961:262-65) that no longer seem to be practiced in the Tor are: mothers using saliva on the sores of their children, rubbing the bark of the barsuf tree (which is unknown by this name today) on the body, stamping on the ground near the sick person, and giving breath by blowing sacred flutes.

3.0 SUMMARY

The study of Berik medical norms and averages and of the Berik view of health and disease has given this author not only a better understanding of the Berik people, but also greater insight into the delivery of medical aid.

Figure 18. A comparison of standard medical norms and Berik norms.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>STANDARD NORM</th>
<th>BERIK NORM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>36.5°C Centigrade</td>
<td>37°C Centigrade</td>
</tr>
<tr>
<td>Pulse</td>
<td>72°C</td>
<td>86°C</td>
</tr>
<tr>
<td>Respiration</td>
<td>16°C</td>
<td>26°C</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>120/80</td>
<td>100/70</td>
</tr>
<tr>
<td>Hemoglobin:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>men</td>
<td>14-18</td>
<td>9-13</td>
</tr>
<tr>
<td>women</td>
<td>12-16</td>
<td>8-11.5</td>
</tr>
<tr>
<td>White blood count</td>
<td>4800-10800</td>
<td>5000-12000</td>
</tr>
<tr>
<td>Spleen</td>
<td>not palpable</td>
<td>51% palpable</td>
</tr>
</tbody>
</table>

In examining only persons classed by the Berik as healthy, it was found that the Berik are relatively short people with an average height of 157 cm. Their average weight is 48.2 kg. Figure 18 shows the comparison between the standard norms and Berik norms. The significant finding of the urinalyses was that older people have a very concentrated urine and in fact their tissue turbidity shows dehydration. Hair color of children 1-14 years of age reflects protein deficiency.

The Berik say a healthy person is one who has good skin and blood and is fat. He has no sickness—no fever or pain, nor is he thin. The following conditions are not considered disease by the Berik: tinea imbricata, filariasis, tropical ulcers, chronic cough, enlarged abdomen from worms, scabies, mental illness. In the Berik view sickness may be caused by the weather (wind and rain gives one chills), 'bad blood', various spirits, sorcery, animal bites, hard work, the breaking of taboos and other unknown causes. Disease is treated by various blowing rituals, nettle leaf rubbing, a blood sucking ritual, skin abradement, and by appealing to spirits. Noticeably absent is the use of ointments or ingestible potions.

The Western medical practitioner working in non-Western, nontechnical societies should give careful consideration to the norms of that society and not unquestionably apply Western standards. One would be well advised to help, treat, and teach regarding the diseases that are known, recognized and feared before instituting health programs in areas not recognized as a problem or as disease by the people.¹

Notes:

¹For height and weight figures 5 and 6, data were taken from the Merck Manual (1977:1126). The heights given in the Merck Manual were adjusted, one inch less for men, two inches less for women, to account for the fact that the Berik do not wear shoes. Weights given in the Merck Manual were adjusted, five pounds less for men, two pound less for women, to account for the fact that the Berik wore a minimum of clothing when measured—men wore shorts, women wore a wrap-around cloth.
Gratitude is expressed to M. Gregerson and C. Kalmbacher who gave valuable consultant help in the writing of this paper and to G. Kalmbacher who spent many hours assisting with the graphs.

References:


King, King, Morley, Burgess and Burgess. 1972 Nutrition for developing countries. London: Oxford University Press.


Oosterwal, G. 1961 The people of the Tor. Amsterdam: Royal Van Gorcum.

1977    Merck, Sharp and Dohme Research Laboratories.  

World book encyclopedia.  