

# Metaphor and Illness Classification in Traditional Thai Medicine

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## INTRODUCTION<sup>1</sup>

In an early article, the medical anthropologist Arthur Kleinman referred to the classification of illness as being the initial therapeutic act (1973: 209). That is, the classification of illness alone may make a significant contribution to the healing process. By classification is meant the ordering of particular groups of symptoms into the entities which we recognize as illnesses. The present study will endeavor to show how, with respect to traditional Thai medicine, the hypothesis that classification plays an active part in therapy is supported by the seemingly strange use of metaphor in the naming of illnesses.

Before embarking on an analysis of metaphor in Thai medicine it is necessary to say something more on the ways in which therapy and the classification of illness may be related. The anthropologist Victor Turner, in reference to the symbolic aspects of Ndembu medicine, wrote that:

(Therapy is) partly a process of making hidden and secret things visible and thereby accessible, if they are harmful, to redressive and remedial action (1967: 302–303).

That is, by providing an identity for the affliction, a significant contribution is made to the healing process. The identity which is provided may be made in terms of spirit beliefs, as Turner describes, in which case it satisfies an emphasis on revealing *why* an illness afflicts a person. Alternatively it may explain in theoretical terms *how* an illness afflicts someone, as in Indic medicine and scientific medicine, where the prob-

lem is elaborated in terms of biological processes. Thai medicine embodies explanations for both of these questions since, although many aspects are obviously Indic in origin, for example the medical texts and the theory, Thai medicine also acknowledges that there is an animistic side to illness. This is often revealed in the treatment of an illness. For example in northeastern Thailand when medicine is prepared, care is taken to prevent shadows falling across the pot, since it is believed that sprits may seize the advantage of the darkness to drain the mixture of its goodness. Whether an explanation results in, say, the propitiation of spirits, or the administration of Valium, there is a high likelihood that healing will occur. As many a successful medical practitioner is aware, a confident diagnosis is often therapeutically of better value than to leave a patient in a state of doubt.

In the process of rendering the symptoms experienced by the patient into a form which can be grasped intellectually, symbols, especially verbal symbols, play an important role. One of the more striking illustrations in the literature of the power of symbols to effect healing is perhaps that given by Lévi-Strauss. He describes a ritual used by the Cuna Indians of South America to facilitate a difficult childbirth. The physician is in this case a shaman, and his technique is to guide the distressed woman on a symbolic journey into her womb to seek the cause of the difficulty. Once the impediment is identified, birth occurs normally. Thus, by what Lévi-Strauss terms a "psychological manipulation of the sick organ," physiological changes are made possible (1972: 186-192).

Of interest in Lévi-Strauss' description is his use of the term "language" to refer to the symbols provided by the shaman for the use of the sick woman. This in fact highlights an important difference in the way that verbal symbols are used in connection with illness: they may occur as part of the ordinary symbols of language, as in the example above, where the individual words are passive in function, alternatively the individual words may play a more active role, being contextually unusual. This type of usage embraces the trope, of which metaphor is, from our point of view, the most important kind (Fernandez 1974: 122). Metaphor has been defined simply as the transference of aspects of one object to another (Hawkes 1972: 1) or as Fernandez expressed it, as "the predication of a sign-image upon an inchoate subject" (Fernandez 1974: 120). In the following discussion a rather wide interpretation of metaphor has been adopted, more in keeping with the first of the definitions given above. An example of this type of usage may be seen in the names accorded illnesses by the Ainu people of the Sakhalin Islands near Japan. According to Ohnuki-Tierney, in their classification of headaches the Ainu have such categories as "bear claw," "woodpeck-

er," "lamprey," and "dog," which are primarily distinguished on the basis of the audio or tactile characteristics of these animals. For example a "woodpecker headache" is like the sound of a woodpecker boring into a tree trunk, a "dog headache" like a dog gnawing on a bone, and the "lamprey" type like the persistent sucking of a lamprey (1981: 51).

A substantial amount of research over recent years has indicated the active role played by metaphor in cognitive arousal (Fernandez 1972: 43; Paivio 1979: 151-152) and problem solving (Ortony 1979: 16; Black 1979: 37; Jackson 1983: 138). A further body of research points both to links between those areas of the brain concerned with the interpretation of speech and those responsible for the mediation of the emotions, and the latter and the body's immune system (Brady and Nauta 1972: 181-182; Stein *et al.* 1980: 1963). Thus there may well be anatomical and physiological links which would enable the "movement" generated by metaphor (Fernandez 1972: 43) to affect those organs of the body concerned with healing and immunity. That these links do indeed exist is borne out by recent studies which show that psycho-social factors, such as stress or anxiety caused for example by bereavement, may result in a depression of humoral and cell-mediated immunity, and may influence the incidence of infections, allergies, and auto-immune diseases (Stein *et al.* 1980: 1961-1962, 1966; Moerman 1979: 61).

To summarize thus far, the reduction of the illness from an unknown to a known entity may be achieved by symbolism, of which metaphor is an important type. Rather than fulfilling this function passively, metaphor activates cognitive processes. Links between the part of the brain where these processes occur and the body's immune system suggest that metaphor may be capable of influencing a person's susceptibility to illness, or the healing process.

#### ILLNESS CLASSIFICATION IN TRADITIONAL THAI MEDICINE

Turning now to the classification of illnesses in Thai medicine, a representative category from traditional Thai medicine will be examined in order to determine the extent to which the hypothesis advanced above provides an explanation for the naming of internal illnesses. The illness category which will be examined is *krasai*<sup>2</sup> and is described in the collection of traditional medical texts published by the College of Traditional Medicine at Wat Phō in Bangkok. These texts, called the *Phāetsāt Songkhro*, are derived from the texts formerly used by the Royal Physicians at the Thai Court.<sup>3</sup> The following analysis is based on one of these texts, the *Phrakhamphī Krasai*, and is supplemented by information transcribed from the wall plaques at Wat Phō<sup>4</sup> as well as informa-

tion obtained from practitioners of traditional Thai medicine and villagers in central Thailand during interviews conducted in 1984 and 1986.

The word *krasai* is derived from the Sanskrit *kṣaya*, which refers to the condition of emaciation, that is, to a symptom, rather than an illness category. The descriptions of *krasai* in the text do not stress emaciation as a salient feature, rather the descriptions are of a range of symptoms generally located in the lower abdominal area. These include such categories recognized in scientific medicine as hernia, urino-genital afflictions, ulcers, and possibly gallbladder illness. This is in agreement with the opinions of central Thai villagers who were questioned in this study most of whom said *krasai* referred to kidney afflictions (*rōk tai*). Bradley's Thai dictionary which dates from the late nineteenth century also emphasizes the location of symptoms in the lower abdomen (Bradley: 1873). However, despite this evidence, two major dictionaries (McFarland's Thai-English Dictionary and the *Photchanānukrom chabap Rāchabanditsathān*) both define *krasai* as an illness characterized by emaciation.

#### THE NUMBERING OF ILLNESS CATEGORIES

It is in the number of types of *krasai* that we first encounter metaphor. Villagers generally only know of four or five types of *krasai*, which are usually given as "earth," "fire," "wind," "water," and "blood." Often the number is given simply as "one hundred and eight." The number one hundred and eight is of course metaphorical in this context, and means "a lot," or "many." Its use is of Indic origin, being very common in Hinduism and Buddhism.

This type of number symbolism is also very evident in the text. As the accompanying table shows (See Table 1.) twenty-six types of *krasai* are described in the texts. Though this number is of no special significance, the descriptions of *krasai* are subdivided in the text into two groups, one comprising eight and the other eighteen types. Both of these numbers are significant. The number eight occurs elsewhere in the texts, being given as the number of types of *puang*, an illness affecting the gastro-intestinal tract (PS: 1: 47), and of *pradong*, a category of skin afflictions (PS: 2: 186-187). The number eight is frequently encountered in Thai culture and its special significance appears to be of Indic origin (Heinze 1977: 98), the number figuring prominently in the context of Buddhist philosophy, for example as the "Noble Eight-Fold Path." Ayurvedic medicine recognizes eight divisions of illnesses which were adopted by Buddhism (Heinze 1977: 88; Takakusu 1896: 127-128).

The number eighteen on the other hand is not commonly found in the Thai medical texts, or elsewhere in Thai culture. Interestingly,

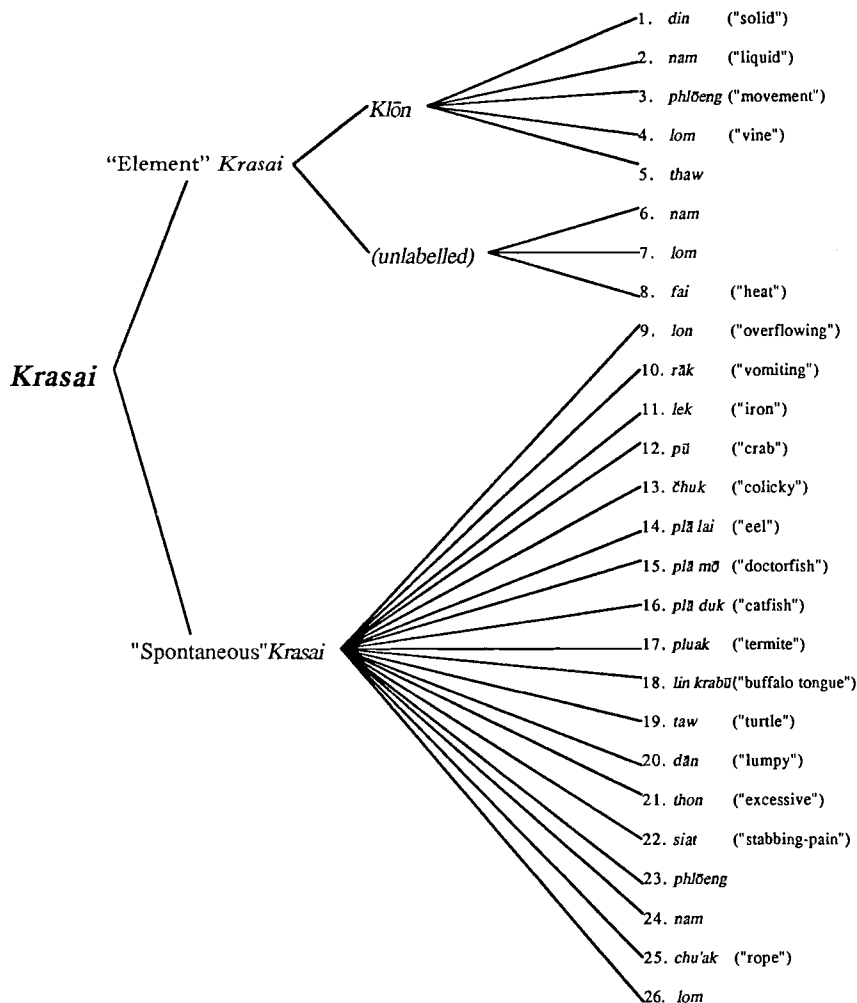


Table 1. The twenty-six types of *krasai* described in the *Phrakhampī Krasai*.

however, the number eighteen occurs in some Sri Lankan medical texts believed to be derived from Malayalam texts originating in South India, where several of the illness categories are divided into eighteen types (Obeyesekere 1969: 198-199).

I would suggest that the use of numerical symbolism in this context is another example of the reduction of illness to a graspable entity: it is important that the types of *krasai* be finite and classifiable into the specified categories. That this is not always possible is borne out by the fact that there is considerable repetition or duplication among the

descriptions of the different types of *krasai*. Blocks of information appear to be included simply in order to fill out the categories to the predetermined number.

#### THE NAMING OF ILLNESS CATEGORIES

The second encounter with metaphor comes in the naming of the twenty-six types of *krasai*. It is convenient to describe these in two sections, corresponding to the groups of eight and eighteen specified in the *krasai* text. Of the first group of eight *krasai*, five types are included in another taxon, *klōn*, with the remaining three being subordinate directly to the *krasai* taxon.<sup>5</sup> Seven of these types are named according to Indic humoral theory, that is, they are named for the four elements of which the human body is thought to be composed: earth, wind, fire and water. These elements may best be thought of as a classification of the body based on metaphor: rather than being interpreted literally, they should be taken as representing the *qualities* of the things for which they are named. Thus *earth* stands for that which is solid, *fire* for heat, *wind* for the quality of movement, and *water* for that which is liquid.

Illnesses are named according to which of these qualities is involved in a particular case. For example "wind illness" may involve the body's nervous system, such as in Parkinson's Disease, paralysis, or epilepsy. The partial facial paralysis suffered by King Mongkut was thus described as "wind illness" by the Siamese Court physicians. This was much to the displeasure of the American doctor Bradley, who took the metaphor literally, thinking that the Siamese attributed the affliction to the entry of wind into the body (Bradley 1836).

Within Indic theory there is also a classification based on three of these elements: wind; heat, which is manifested as bile; and liquid, which is manifested as mucus. Collectively these three elements are known as the *tridoṣa*.<sup>6</sup> While no explicit references are made to this theory in the *Phrakhamphī Krasai*, the tertiary theory may explain the repetition of the names of the elements within the first group of *krasai* illnesses, since the repeated names correspond to those of the *tridoṣa*. These three elements also occur within the second group of eighteen *krasai* illnesses. The remaining member of the first group, that is the fifth type of *klōn*, *krasai thaw*, which does not bear the name of an element, is problematic. I would suggest its inclusion in this section is for the purpose of completing the full eight types, since its name and description bear strong similarities to taxa appearing in the second main group of *krasai* illnesses.

The second group of *krasai* illnesses are termed "spontaneous" afflictions in the text. Aside from the three types corresponding to the

*tridoṣa*, which have already been discussed, the categories in this section bear no resemblance to humoral theory, either in name or symptoms. While it is tempting to suggest that these represent indigenous Thai categories, it is more likely that the various names of illness taxa in this section may simply represent the translation of Indic terms into Thai. If so, this instance is significant, for elsewhere in Thai medicine, even in the texts from northern Thailand which represent a more folk-influenced tradition, Indic names tend to be retained.<sup>7</sup>

The taxa in fact bear a strong resemblance to other types of Tai folk classification, which as described by Chamberlain (1977: 35–36) generally utilize “outstanding characteristics of the organism’s natural history.” These classifications are characteristically polythetic, that is, though the members of a particular taxonomy may share features from a range of attributes, or in the case of illness, symptoms, none of them possess all these attributes. This is generally true of *krasai*, but a stronger link is the emphasis on certain types of symbolism in the actual symptomatic descriptions. It is not proposed to elaborate here on the use of symbols in the diagnostic descriptions of illnesses, apart from saying that they chiefly involve spatial and temporal considerations, among which the location of symptoms with respect to the head and feet, and the phases of the moon are important.

Of the eighteen types of *krasai*, the names of nine are metaphors. I will concentrate on an examination of these rather than the other six which bear symptomatically-descriptive names and the three which are named for the elements. Of the nine which employ metaphors, seven, possibly eight, are animal-related. Animals are widely used as vehicles for metaphor, and as Tambiah has indicated, they frequently embody a complex of symbolic associations which are culture-specific (Tambiah 1969: 457). This argues against the possible assumption of their selection being simply an arbitrary means of classification. In fact those animals used in the classification of *krasai* do possess certain features in common, although these emerge only on close examination.

These features are of two types, which are linked: edibility and habitat. Firstly, regarding edibility, and bearing in mind that diet may vary markedly within cultures and even between households (Chamberlain 1977: 30), all the categories are named for animals which may form part of the Thai diet. With the exception of the buffalo-tongue and termite types, these are all water creatures (*sat nām*).<sup>8</sup> This provides a clue to the second distinguishing feature, which is the ability of all the creatures named to move between two environments.

It is obvious that the crab and the turtle may inhabit two environments, but the other creatures used in naming of these categories also

have this potential. The catfish (*plā duk*) may leave one water system and wriggle to another (Davidson 1975: 58). The eel (*plā lai*) may bury itself in mud to survive the drying out of watercourses (Davidson 1975: 89), and the doctorfish (*plā mō*) may similarly leave the water, having been known to climb trees (Davidson 1975: 74). With regard to the two categories buffalo-tongue and termite, both of these also occupy two environments. The tongue occupies a wet internal milieu, which is nevertheless liable to exposure and drying out. Termites inhabit mounds which they build to prevent their bodies from dessication. The distinguishing characteristic may therefore be defined in terms of ability to move between an internal and an external, or a wet and dry milieu.

Descriptions elicited from Central Thai informants emphasized another characteristic which these creatures have in common. This is the quality of kinesis. That is they possess distinctive types of movement, be it walking, wriggling, or scuttling along. Even the buffalo-tongue has a distinctive muscular movement.

Taking all these characteristics together, that is the wet and dry, or internal-external, dichotomy, the emphasis on movement, and the compatibility with the body by virtue of edibility, an image is generated of illness characterized by the invasion of the body by a creature capable of movement between two media. If this is the case, that is that Thais may envisage some types of illness as the entry into the body of a creature of some sort, then it would be anticipated that this would be supported by the symptomatic descriptions in the text. This is indeed the case, and some types of *krasai* are described in terms consistent with the presence of an animal within the abdomen. For example, the description of *krasai plā lai* (eel *krasai*) is given as follows:

When fully developed it causes symptoms by wriggling its tail, working its way down to affect the lower abdomen, as well as the anus and urethra . . . the body of the *krasai* winds its way upwards along the intestines, the head rising up as far as the edge of the liver and the stomach. If food is eaten the *krasai* will eat it, and if food is not eaten, the *krasai* will bite the edge of the liver and the spleen, causing great pain, or sometimes aching, pain in all the joints, and ague, as in severe illness (PS: 2: 200).

Another category, *krasai plā mō* (doctor-fish *krasai*), is described as follows:

*Krasai plā mō* arises in the intestines. If it develops during the waxing moon the *krasai* turns its head upwards to bite at the edge



of the liver, spleen, and lungs, causing colicky pains. If it arises during the waning moon, the *krasai* turns its head downwards to the lower abdomen and the supra-pubic region, causing obstruction to the faeces and the urine, and the person to suffer great pain, crying and groaning (PS: 2: 201).

The occurrence of “animal categories” is not unique to the taxon *krasai*. Other illnesses appearing in the same set of texts also take their names from animals. For example *sāng*, or “children’s diseases” have a “cow” (*wua*, *khō*) type and an elephant (*chāng*) type (Mulholland 1982: 252). *Puang* (illnesses involving the gastro-intestinal tract) has eight types, including snake, monkey, and baby bird (PS: 1: 47) and *pradong* (a type of skin complaint) also has eight types, including ant, elephant, buffalo, cow, monkey, cat, and rhinoceros (PS: 2: 186–187).

In these other taxa, despite the resemblance to *krasai* through being named after animals, there does not appear to be an emphasis on the description of the illness as behaving like an animal, with which some types of *krasai* are accredited. The repetition of category names and the lack of descriptive passages supporting them, tend to argue against any further similarity with the *krasai* categories beyond that of bearing animal names. However, elsewhere, in Tai language and in spirit belief, there is strong evidence to support the notion that illness was conceived by Thais as resembling the entry of an animal into the body.

The general classifier for animals in Tai is *tua* (Conklin 1981: 130–132; Tambiah 1969: 457) which was, and still is, despite exciting the displeasure of certain members of the literati, used by many Thais to classify illnesses (Sukprachā 1984: 361). *Tua* is also taken as a classifier for most objects possessing legs, thus its use in connection with illness serves to emphasize the nature of illness as a living entity, or something resembling a living entity. In the *Phrakhamphī Krasai* for example reference is made to the *tua krasai* (PS: 2: 200), which is consistent with the description of the illness in terms evocative of animal-like behavior.

Another word for illness, *phayāt*, also serves to emphasise the notion of illness as a living entity. *Phayāt* is derived from the Sanskrit word *vyādhi* which means “disease, ailment, sickness, or plague” (MMW 1984: 1037). The meaning of the Tai word *phayāt* as it appears in early Tai inscriptions is consistent with the Sanskrit, for example:

May I be reborn with wisdom and property in each reincarnation.  
May I not have illness (*phayāt ko yā mī kāe kū* (*Khanakammakān phīchāranā lae chat phim ekasān thāng prawatisāt*: 152 [Inscription 14 2: 13]).

This meaning appears to have been retained in northern Tai medical texts, where the more common central Tai word for illness in general, *rōk* does not appear.<sup>9</sup>

In the Royal medical texts, however, though *phayāt* may occur bearing the general meaning of “illness,”<sup>10</sup> its meaning is for the most part more specific, referring to parasitic afflictions.<sup>11</sup> This is also the usual meaning of the word *phayāt* in modern (central) Tai, the word by itself referring to parasites in general, or more specifically to tapeworm, and with a modifying adjective denoting other types of intestinal parasites, such as *phayāt pāk khō* (hookworm), *phayāt tua klom* (roundworm), and *phayāt sen dāi* (threadworm). It would therefore appear likely that in central Tai, with the adoption of the word *rōk* as the general term for illness, the meaning of the word *phayāt* narrowed to refer in the main to parasitic diseases.

The idea that illness may be caused by the entry of ‘worms’ into the body may also be seen elsewhere in Thai medicine, for example in the case of dental caries, where it was said (as it still is in the spoken language) that *māeng kin fan* (literally ‘insects eat the teeth’) (Mulholland 1970a: 90). This idea, still prevalent today in some areas of Thailand,<sup>12</sup> has also been observed in other cultures, for example that of the Malays,<sup>13</sup> as well as of the English at the time of Shakespeare.<sup>14</sup> The prevalence of this belief in England has been attributed to the influence of Arabic medicine (Campbell 1926: 1: 203–204).<sup>15</sup> It is likely that the belief that ‘worms’ cause dental caries arose from the observation that, owing to the hardness of the surface enamel of teeth, advanced decay may reveal only a ‘pinpoint’ surface cavity, concealing the inner destruction, similar in appearance to the way in which fruit may be spoiled by insects.

Another Thai illness taxon, *sāng* (‘children’s illnesses’) (Mulholland 1982: 252)<sup>16</sup> may be cognate with the Zhou Chinese *ziang*, or *yang*. *Yang* (恙, 痒), the usual meaning of which is ‘sickness’ (Karlgrén 1957: 193, no. 732 g, i), may also refer to a worm which was believed to “gnaw at the heart” (Mathews 1975: 1084). The link between illness and the invasion of the body by a living entity may therefore be of very ancient origin and predate the Thai arrival in the MaeNam Valley.

The use of the word ‘worm’ as a general term for illness, and the accompanying belief that illness is caused by the entry of worms into the body is of course not without foundation. Evidence of parasitic infestations is often readily apparent in the faeces, and some nematodes, such as the “guinea worm” may burrow beneath the surface of the skin, and be visible through surface ulcerations.<sup>17</sup> A case with symptoms consistent with those of guinea worm is described in the novel *Khrū Bān Nōk*: an elderly woman suffers intermittently from abominal pain and

general aching of the body, which is originally diagnosed by the village doctor as *pāndong*, which is the northeastern Tai word for *pradong* mentioned earlier.<sup>18</sup> Later, after much discomfort, pain, and weight loss, a worm bores its way out from her knee, which the teacher Piya extracts and preserves to show his students (Khammaan 1980: 109, 158).

Thai spirit belief, the second of the points mentioned above,<sup>19</sup> also maintains that certain types of spirits (*phī*) may enter the human body and consume the organs. Thus the *phī phai*, or 'vampire spirit' of Northern Thailand and Laos, lives off the blood of an individual and saps his energy (Halpern 1963: 194),<sup>20</sup> and the *phī pōp*, prevalent in the same region, eats the internal organs, especially the liver (Dore 1979: 49; Čhāruwan (n.d.): 112–113). The behavior accredited to this latter spirit has strong affinities with the behavior of the 'doctorfish' *krasai* in the text, which, it will be recalled, is also partial to 'biting at the liver.'

#### METAPHOR AND THE TREATMENT OF ILLNESS

The animal metaphor is extended further into the realm of treatment. While it is not proposed to go into the subject of treatment in any detail here there are nevertheless a few observations which should be made in this context. The first of these is that medicine may also be referred to in terms which suggest a living entity. Thus the medicine may be called a *tua yā*, that is a *body* of medicine, and its interaction with the *krasai* illness is described as being its food. The *krasai* is said to *like* (*chōp kin*) certain medicines, which are the most effective. In what would appear to be a type of sympathetic magic some of the prescriptions involve the preparation of a curry based on the creature for which the illness is named. Thus for eel *krasai* an eel curry is one of the alternative medicines prescribed, incorporating, besides one eel, the ingredients commonly found in ordinary curries, such as black pepper, ginger, galangal, onions, and garlic (PS: 2: 201). After one cup of the curry is eaten the *krasai* is said to separate out as lumps, like clots of blood.

The treatment of some of the other types of *krasai* is similar. The curry for the treatment of doctorfish *krasai* includes, in addition to three doctorfish, a quantity of a plant called "doctorfish gills."<sup>21</sup> This is an indication that certain types of symbolic healing such as sympathetic magic may still play an important part in the Thai materia medica.

#### CONCLUSION

In summary, two observations may be made about the use of animal categories in naming the different types of spontaneous *krasai*. The

first of these is that the names are drawn from the variety of creatures inhabiting the familiar Thai village environment. Thus, for the most part, they represent creatures which are actively sought after as food, and whose habits are well known. Therefore, in the light of what has been said earlier it might be reasoned that in ascribing to the illness such a name, the unknown and potentially life-threatening is also incorporated into the realm of the familiar.

The second observation follows from the first, and it is that, having named the illness for a creature, predictions may also be made about its behavior. In so-doing a link is established with a body of Thai folklore which seeks to provide explanations for the onset of illness, that is the belief that illness is due to the malign influence of 'spirits'. Similarly, certain therapeutic pathways are also opened, which were briefly considered above. Both these observations would support Kleinman's contention, quoted at the beginning of this paper, that the identification of an illness is the initial therapeutic act, since in both cases an attempt is made to provide explanations for what Thais, at least in the time at which the texts were compiled, regarded as two equally important aspects of illness: what is happening, and why.<sup>22</sup>

#### NOTES

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2. The system of transliteration of Thai words adopted here is the Library of Congress system, except in cases where there is already an accepted English language spelling.

3. These texts are, at least in part, of Indic origin. They also reflect different schools of Indic medical thought: some, for example, show a similar style to the Ayurvedic text of Caraka, whilst elsewhere, particularly in the illustrations at Wat Phō, and in the south at Songkhla, tantric medical thought, probably from northeast India, is apparent. The text in which *krasai* is described bears certain features which indicate that it is of Sri Lankan or South Indian origin.

There is also evidence that the texts may have reached Siam via Cambodia, since many of the traditional texts originally included sections written in the *khōm* script. Though this does not in itself constitute proof that the complete text came from the Khmer, when coupled with certain linguistic features such as the consonant changes evident in some Sanskrit words, it provides a strong argument for Khmer influence.

There is also strong evidence that the texts contain material from a number of Thai sources, and that the form in which they now exist is the result of the loss or addition of certain sections. Part of the disordered condition of the *krasai* text as we now have it, for example its inclusion of additional prescriptions, would appear to be con-

sistent with the changes which might have resulted from its use as a physician's reference or notebook, where useful new prescriptions were added from time to time.

That a text in a collection such as this should contain such inconsistencies is not entirely accounted for by the faithful reproduction generally accorded to these respected works. A possible explanation is that, at the time of the sack of the old capital of Ayutthaya by the Burmese in 1767, the texts of the Royal Library were burned, dispersed, or removed to Burma (Koenig 1894: 154). When the Siamese sought to re-establish the medical library, they had to draw upon copies of the Royal texts kept in temple libraries outside the capital. It is likely that these copies were not maintained in the same condition as the books which were lost, and contained discrepancies, such as those resulting from their everyday use, as mentioned above, or as the result of deterioration of the palm leaves on which they were probably written. Thus in order to get a description of *krasai* suitable for analysis it has been necessary to reconstruct much of the original format.

4. These were erected by Royal decree during the Third Reign.

5. In modern Tai, *klōn* is usually taken to refer to what would be recognised in scientific medicine as an inguinal hernia, generally with scrotal involvement. This interpretation is consistent with the description provided in the *Phrakhamp̄hī Krasai* text, although the range of symptoms included within the various types of *krasai* described in that source is much wider, indicating that a narrowing of meaning has occurred.

6. For a detailed examination of the role played by the *tridoṣa* in traditional Thai medicine, see Mulholland (1979b).

7. See Palm Leaf Text Studies Program (1979) for example.

8. Water animals provide a very important part of the Thai diet. See Tambiah 1969: 455.

9. See for example the text titled *Yā sa lom phayāt* ('medicines for illnesses') (Palm Leaf Text Studies Program 1979: 28).

10. In the final section of the *Phrakhamp̄hī Krasai*, for example, there is a prescription said to free the person from the "five hundred *phayāt*" (PS: 2: 220).

11. See *Phrakhamp̄hī Prathom Čhindā* (PS: 1: 198) for example.

12. See for example, the article "The dentist of the *Sanām Luang*" in *Thai Rat*, 6th November, B.E. 2526 (1983).

13. According to McFarland (1944: 700), the latex of the *rak* tree was believed by the Malays to kill the worm that causes toothache.

14. In *Much Ado About Nothing* (3: 2: 25), Leon says: "Where is but a humour or a worm?" a reference to Benedick's toothache which is both metaphorical and literal. In *Vppon Bartholome*, Stephen Batman says of toothache: "The cause of such aking is *humors* that come downe from the heade, . . . Also sometime teeth be pearced with holes & sometime by *worms* they be changed into yellow colour, greene, or black" (In Humphreys 1981: 150).

15. According to popular Arabic medical belief, worms were also believed to be the cause of nymphomania; in *The Book of the Thousand Nights and a Night* a case of nymphomania is treated by the removal of two worms, one yellow, the other black, from the vagina by means of the vapors from a steaming potful of "virgin vinegar and a pound of the herb pellitory called wound-wort" (Burton 1885: 4: 298-299).

16. Various types of which were mentioned above. See page 183.

17. This is the affliction known as dracontiasis, infestation by the nematode *Dracunculus medinensis* (Maegraith 1980: 103-108).

18. See page 187.

19. See page 187.
20. Similar types of *phī* are recognized by other Tai groups, for example the Red Tai of Laos who believe that the *phī-pha*, or *phī-xan-phu* feast on the blood of injured people (Boutin 1938: 77).
21. *ngu'ak plā mō* (McFarland 1944: 939).
22. As Maclean points out, the emphasis given these varies widely between cultures and "the 'real' reasons for illness may be divined rather than defined" (1971: 26-28); the observation made by Reid that to the Yolngu of Central Australia "any explanation of a sickness or death which does not identify a proximate or ultimate cause is incomplete" illustrates this well (1983: 55). The compatibility of the two aspects from a therapeutic point of view is also exemplified in the comment made by a young Yolngu woman in response to a question as to the best treatment for nephritis: "Go to a *marrnggitj* [Yolngu 'healer'] to see what caused it and then go to a [western] doctor for medicine" (97).

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