

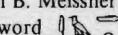
The Earliest Document of a Case of Contagious Disease in Mesopotamia (Mari Tablet *ARM X*, 129)

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The notion of contagion in humans is exceedingly old and widespread, and the earliest written account so far recorded of a case of contagious disease comes from a cuneiform tablet in Mari, of the 18th century B.C.E.¹ This confirms epidemiological knowledge at a much earlier period than had been previously known from Mesopotamian written materials, indicating as it does familiarity with communicable diseases, as well as the method for arresting their spread.² Contained are the following insights: (a) recognition of the element of contagiousness in diseases; (b) two categories of transmission: by direct and indirect contact; (c) isolation of the carrier in order to protect uninfected persons from exposure to the infectious disease; (d) infection by means of fomites; and (e) the earliest known usage of the Akkadian word *muštahhiz*, meaning ‘catching’, as applicable to a disease which one may “catch,” in the sense of its being transmittable. Significantly, there is neither Egyptian written evidence pertinent to communicable diseases³ nor Greek affirmation in writing prior to Thucydides.⁴ Such information could have helped to establish possible links. This, of course, does not preclude the possibility—kindly conveyed to me by the late Father Mitchell Dahood in a personal communication—that the tablets from Ebla might also have

1 *ARM X*, 129; *ARMT X*, 129.

2 The reference in B. Meissner’s *Babylonien und Assyrien* (Heidelberg, 1925), 2:290, is of much later date.

3 However, the word  (*i³dt*) frequently translated “pestilence,” “plague,” “scourge” in the form of illness inflicted by a divinity, specifically Sakhmet, may mean “contagion.” See Hermann Grapow, *Von den medizinischen Texten* (Berlin, 1955 [*Grundriss der Medizin der alten Ägypter*, II]), 113; Hildegard von Deines and Wolfhart Westendorf, *Wörterbuch der medizinischen Texte* (Berlin, 1961–1962 [*Grundriss der Medizin der alten Ägypter*, VII, 1 and 2]), 1:21. In view of the prevalence of infectious diseases, and epidemics caused by the annual Nile floods, it seems most unlikely that the Egyptians were unaware of contagiousness of some diseases. See also Wolfhart Westendorf, *Papyrus Edwin Smith, Ein medizinisches Lehrbuch aus dem Alten Ägypten, Wund und Unfallchirurgie Zaubersprüche gegen Seuchen, verschiedene Rezepte* (Bern and Stuttgart, 1966), 25f., 91–102).

4 Thucydides with English Translation, tr. C. F. Smith, The Loeb Classical Library (Cambridge, MA, 1949), 47–54; A. W. Gomme, *A Historical Commentary on Thucydides* (Oxford 1956), 2:145–62. However, there is no doubt that the notion of contagious diseases was known long before Thucydides.

references to contagious diseases. He reasoned as follows: "The tutelary god of Ebla was *da-bi-ir* which, as a common noun in Hebrew, designates the 'pest' and because the popularity of *ra-sa-ap* in the Ebla tablets points to the same direction. Perhaps the bilingual texts in the forthcoming publications might have some specific term for contagious disease, as there appear to be some medical terms in the bilinguels studied thus far." In any case, the Mari tablet takes a definitive place in the history of epidemiology.

The Tablet

This clay tablet, written in Akkadian, was found in Room 108 of the great Mari Palace. It consists of a letter from Zimrilim (18th century B.C.E.), the King of Mari, to his chief wife, Queen Šibtu. At present, the tablet is numbered A2099 and, like many of the Mari findings, is preserved in the Aleppo National Museum in Syria.

The first translation was made by Georges Dossin in June of 1956 at the sixth *Rencontre Assyriologique Internationale du groupe Thureau-Dangin* held in Paris. The reports of that *Rencontre* on the topic of women at Mari never appeared in a separate volume, although a number of the papers have been published in different journals.⁵ In 1957 André Finet published, in his valuable paper, "Les médecins au royaume de Mari,"⁶ a translation of this text into French, drawing attention to the reference to contagion. An autographed copy was published for the first time by Dossin,⁷ and subsequently a transliterated text and translation into English was made by P. Artzi and Abraham Malamat,⁸ and into French by Dossin and Finet.⁹ Another transliterated text with a translation into German has been made by W. H. Ph. Römer, and it appeared in his study *Frauenbriefe über Religion, Politik und Privatleben in Mari*.¹⁰ William L. Moran's¹¹ most recent rendition into English differs, in some respects, from anything that has been proposed previously.

Transliteration and Translation

1 [a-na ^m]! Ši-ib-tu	1 [To] Šibtu (my wife)
2 [qí-b]i-ma	2 [s]ay:
3 [um-m]a be-el-ki-i-ma	3 your lord (husband) says:
4 eš-me-e-ma ^m Na-an-na-me	4 I have heard that Nanname
5 sí-im-ma-am mar-ṣa-at	5 is suffering from skin lesion;
6 u it-ti ekallim ^{lim}	6 yet, she frequents
7 ma-ga-al wa-aš-ba-at-ma	7 the palace.
8 sinništātim ^{mes} ma-da-tim it-ti-ṣa-ma	8 It will infect many
9 i-sa-ab-bi-ik	9 women with her (ailment).

5 For a brief report of the published articles see *RA* 52 (1958), 109. See also *Bi. Or.* 13 (1956), 178-79.

6 *Annuaire de l'Institut de Philologie et d'Histoire Orientales et Slaves* 14/1 (1954-57), 129.

7 G. Dossin, *La correspondance féminine, ARM X* (Paris, 1967), 129.

8 P. Artzi and A. Malamat, "The Correspondence of Šibtu, Queen of Mari in ARM X," *Or.* 40 (1971) 85.

9 G. Dossin avec la collaboration du A. Finet, *Correspondance féminine, ARMTX* (Paris 1978), 129.

10 *AOAT* 12 (1971), 57-58.

11 *JAOS* 100 (1980), 188.

10	<i>i-na-an-na dan-na-tim šu-uk-ni-ma</i>	10	Now, then, give strict orders
11	<i>i-na ka-às i-ša-at-tu-ú</i>	11	that no one drink
12	<i>ma-am-ma-an la i-ša-at-ti</i>	12	from the cup she uses,
13	<i>i-na giškussem ša úš-ša-bu</i>	13	and no one sit
14	<i>ma-am-ma-an la úš-ša-ab</i>	14	on the seat on which she sits,
15	<i>ù i-na gišeršim ša it-ti-il-lu</i>	15	and no one lie
16	<i>ma-am-ma-an la it-te-e-el-ma</i>	16	on the bed on which she lies,
17	<i>sinnišātim^{mes} ma-da-tim</i>	17	so that it should not infect
18	<i>it-ti-ša-ma</i>	18	many women
19	<i>[I]a i-sa-ab-bi-ik</i>	19	with her (ailment).
20	<i>[sí-im-m]u-um šu-ú mu-uš-ta-ab-ji-iz</i>	20	That [skin lesi]on is catching.

Date, Character, and Omissions

As mentioned, the author of this letter was the unfortunate ruler of Mari, Zimrilim, a contemporary of Hammurabi. It is most likely that he wrote it during his absence from Mari¹² and, as stated, addressed it to his chief wife, Queen Šibtu. Like other Mari letters, it is an original document in the sense of revealing true statements of fact and genuine circumstances of day-to-day activities. It belongs to the type of Akkadian letters which the late A. Leo Oppenheim regards as "far more revealing than the formalized historical and literary texts with their ideological narrowness and tradition-determined contents."¹³

The text of our tablet is clear and short, without a superfluous word, exhibiting a desire to attend to an urgent matter. It reflects an accumulation of experience and speaks with authority and confidence. The message is lacking in a moral tone, even the pity that might have been expected for the suffering of Nanname. The presentation is matter-of-fact, attesting to the continuity of much earlier and firmly established customary procedure which has asserted itself by long observance in virtue of an inward necessity. It is evident that the letter was written in haste and anxiety, reflecting a sense of urgency and demanding immediate attention. This fact, as well as the much later Biblical laws concerning "uncleanliness" (in most cases referring to infectious diseases), make it obvious that communicable diseases were regarded with great seriousness. The dread in anticipation of epidemics was by far greater than can be inferred from the scanty evidence. In fact, public health measures in matters of diseases considered to be contagious were officially promoted and received their highest priority and, undoubtedly, the most rigid enforcement, as confirmed by Šibtu's reply (X, 14).¹⁴

12 According to Jack M. Sasson, "The king was constantly on the move. Records of rations for the king's table generally indicate that only during the months of December through May was the king likely to remain in his capital. The rest of the year was devoted to his activities in the provinces and in foreign lands . . ." (*IDB*, Supp.: 568).

13 A. Leo Oppenheim, *Letters from Mesopotamia* (Chicago, 1967), 65.

14 Note that according to Num. 19:13, 20 and Lev. 22:3 (see also Lev. 15:31; 22:6), non-compliance with disinfection particularly when attending cultic celebrations was a grave offense. It may also be mentioned that in Ancient Israel disinfection of the Temple was conducted bi-annually prior to great festivals (Ezek. 45:18-20) and annually during post-exilic times (Lev. 16) since "men's presence in the Temple produced a certain danger of pollution hence it had to be purified"; J. Pedersen, *Israel Its Life and Culture* (London-Copenhagen, 1947), 2:453-54; see also Theodor H. Gaster, *Thespis* (New York, 1961), 34-35.

The tablet omits four facts, and each in itself is perhaps of relative importance: (a) it contains no indication as to the duration of the isolation period; (b) it does not refer to the location of the quarantine; (c) it does not allude to any procedures for coping with the fomites; (d) the text gives no indication of the season of the year at which the sickness of Nanname occurred, a matter which might have been helpful in defining the type of *simmu* in question, although it is likely that the sickness occurred either during the spring or summer.

The Language

Some of the Mari tablets employ many non-Akkadian words, especially personal names which are largely "West Semitic" or rather Amorite, and several of the tablets are written entirely in Hurrian. This is not the case with the text under discussion. Here, the Akkadian is for the great part virtually perfect, written in a clear cuneiform script, with no strangely flat or awkward sentences. The only exception seems to be the name Nanname, which does not appear to be Akkadian.

Nanname

The interpretation by Römer¹⁵ that the name of the woman patient, Nanname, is of Sumerian origin (^dNanna-me = "[O] our Moon-god") is conjectural; there is little support for this. It does not appear to be Akkadian or, for that matter, Semitic, nor does it appear to be Sumerian or Hurrian. It is well known in the form ^dNanna-mu with the first personal possessive instead of the first plural. In view of the fact that the name is written in the tablet syllabically, it is very hard to form a definite opinion about what it may have meant. It should be added that to establish the etymology of personal names is an exceedingly difficult matter. So far, attempts to provide an etymology for rare names when origin, particularities of spelling, and histories of the personalities who carried them are unknown, lead to fragile hypotheses.

simmu

Simmu, denoting the disease of the carrier, is rendered here as "skin lesion." Line 5 reads *simmam marṣat*, meaning literally "she suffers from *simmu*"; the closing line (20) refers to *simmu* alone. Similarly, references are made to the fact that "many women risk suffering from that *simmu*," and that "they will suffer from an occurrence of that *simmu*.¹⁶ Dossin and Finet render *simmu* as "maladie," and Römer as "Wunde." It is probable that in the first instance it refers to a sickness of a contagious nature and in the second instance to a deep wound which had become infected. Undoubtedly Römer's translation follows the assumption that this type of *simmu*, or another skin disease of similar description, was initiated by some injury or surgery.¹⁷

15 See n. 10 above.

16 130:3-4 reads *sinnišatum mādātum simmam šātu imarrašā*; and lines 14-15 *ina simmim šātu imarrašā*.

17 Note that in the Laws of Hammurabi (col. 18: rev. 56ff.) it appears as a result of a surgical operation; see G. R. Driver and John C. Miles, *The Babylonian Laws* (Oxford, 1955), 2:149-50.

The actual meaning of *simmu*, and particularly its application in this text, needs some elucidation.

My distinguished colleague, Prof. Thorkild Jacobsen, kindly drew my attention, in a private communication, to the fact that the disease *simmu* is equated in the synonym lists¹⁸ with *epqennu*, and *epqennu* is connected with *epqu* ‘leprosy’. Hence *simmu* might denote a “leprosy-like” disease,¹⁹ or possibly a mild case of tuberculoid leprosy which is seldom transmitted. The available evidence—as shown by Vilhelm Møller-Christensen²⁰—strongly suggests that true leprosy (Hansen’s disease) was almost unknown in the ancient Near East, and therefore Akkadian *epqu*, like the later Hebrew *sāra’at*, does not seem to correspond to the English term “leprosy.”²¹ It is safe to surmise that both, as well as the *simmu*, are rather inexact terms; they seem to be generic terms covering a wide range of injuries and number of different, severe as well as mild, infectious diseases. There are “*simmu* whose names no one knows” (*simmu ma’dū šumīšunu lâ idī*).²² Some of the types of the *epqu*, as well as those of the *simmu* and *sāra’at* were probably related to eczema, essentially a chronic dermatitis. Their victims were looked upon with contempt and horror as having loathsome diseases, and were subject to banishment.²³

The matter at hand is not what *simmu* means whenever it occurs, but what precisely was intended in the case of our text. It seems reasonable to assume that *simmu* in this particular case refers to localized, visible (on the face or arms, extending to the trunk or hands), mild skin disease. The initial symptoms were probably mild and unnoticeable. The disease was thought to be transmitted by direct and indirect contact but was considered curable. If this type of *simmu* resembled *epqu*, the victims

18 CAD E, 246.

19 Loc. cit.

20 Vilhelm Møller-Christensen, “Evidence of Leprosy in Earlier Peoples,” in D. Brothwell and A. T. Sandison, eds., *Diseases in Antiquity* (Springfield, Ill., 1967), 300ff.

21 For pertinent literature on *sāra’at*, see E. Neufeld, “Insects as Warfare Agents in the Ancient Near East,” *Or.* 40 (1980), 34, n. 8. See also A. T. Sandison, “Diseases in Ancient Egypt,” in Aiden and Eve Cockburn, eds., *Mummies, Disease and Ancient Culture* (Cambridge, 1980), 30–31; John G. Andersen, “Leprosy in Translations of the Bible,” *The Bible Translator* 31 (1980), 207–12; and John J. Pilch, “Biblical Leprosy and Body Symbolism,” *Biblical Theology Bulletin* 11 (1981), 108–13, who follows the interesting anthropological interpretation of Arthur Kleinman and Mary Douglas. Note that the Hebrew *sāra’at* (Lev. 13:3, 8, 11, 12, etc.) is rendered in the NJV as “leprosy” with the following comment: “Hebrew *sara’at* is used for a variety of diseases. Where a human being is declared unclean by reason of *sara’at*, the traditional translation “leprosy” has been retained without regard to modern medical terminology.” On the other hand, the NEB is most inconsistent. The *sāra’at* is rendered as “malignant skin-disease” (Lev. 13:20, 25, 27, 30, 42), as “skin-disease” (Lev. 13:12, 13; 2 Kgs. 5:27; 14:7, 57), as “disease” (2 Kgs. 5:3, 6, 7, 27), as well as “leprosy” (2 Chr. 26:19). Jacob M. Myers (*I and II Chronicles* [New York, 1965]) renders *sāra’at* in 2 Chr. 26:19 as “lesion” and in v. 20 as “leprosy,” but see his note (loc. cit., 150, n. 21) according to which *sāra’at* in “the Biblical sense is a generic term under which were included all kinds of skin ailments. Only one of these would correspond to modern leprosy.”

22 See Driver and Miles, *The Babylonian Laws*, 2:250 (quoting Bezold).

23 See CAD E, 246 (“you are full of *epqu* . . . do not approach me . . .”). Other passages (loc. cit.) show that the victim was expelled from the city. See also Meissner, *Babylonien und Assyrien*, 2:290. According to Leviticus the victim of the *sāra’at* was subjected to the most stringent quarantine (Lev. 13:46: . . . בְּדַר יְשֻׁב), but according to Num. 5:2–4 the victim, of either sex, is to be banished from the camp. Similarly, the M. *Kelim* 1:7 records that victims of such diseases were driven out from walled cities—(. . . עִירוֹת הַמִּקְפָּת חֲוָמָה שֶׁמְשַׁלְחֵין מִתּוֹכָן אֶת הַמִּצְרָעִים).

of which were driven away, Zimrilim's reaction presumably would have been much more severe. However, his words show no distress, only a certain amount of care and anxiety. Taking these points into consideration, the suggested translation of *simmu* as "lesion" seems to accord reasonably well with the facts presently available, as well as with the mood and substance of this tablet. One must note, however, as does Sandison, that "descriptions of skin lesions in the ancient literature would not always lend themselves even to provisional diagnosis."²⁴

In the field of ancient medical problems, the gaps in our knowledge are by far larger than our certainties. J. V. Kinnier Wilson's attempt to apply Akkadian medical terms to modern diseases²⁵ seems unsuitable. Even the linguistic certainty of a specific name of a disease, by which it may have been known or spoken of, seldom diminishes the difficulty of its medical identity. The Mesopotamian nosology differed from ours, as did their pattern of human ecology. For a number of reasons, the findings of paleopathology have, so far, been of limited assistance in this field.²⁶ Although progress has been made in identifying some infectious diseases in ancient Egypt,²⁷ current medical understanding of most of them, all over the ancient Near East, rests greatly on inferential evidence.

muštaħħiz

Muštaħħiz (for *muštanħiz*, Štn form of *aħāzu*), refers here to a disease which is "naturally ever catching," "always infectious," "continually communicable,"²⁸ in the sense of its being passed or tending to spread by direct or indirect contact. Hence, the translation "contagious" seems accurate. However, since *aħāzu* means 'seize', perhaps the words "is catching" are more precise. This is apparently the only text (as well as *ARM X*, No. 130) where this word occurs. In any case, nothing predates it.²⁹

The Štn form is interesting but is not a result of Amorite influence. References to it are found both in *AHw.* and in *CAD* as the normal Akkadian iterative. The form is rare but not irregular. Although it appears nowhere else, it could presumably do so and may prove, from future finds, to have the Mari meaning.

Rational Approach

The text is singularly devoid of any elements of magico-medical treatment. There is no hint of a demoniacal force that had projected the sickness. The disease is

24 A. T. Sandison, "Diseases of the Skin," in *Diseases in Antiquity* (see n. 20), 449.

25 J. V. Kinnier Wilson, "Organic Diseases of Ancient Mesopotamia," in *ibid.*, 191ff.

26 So far paleopathology deals mainly with diseases that produce a direct effect on skeletal tissues—bones or teeth. Among these there are few diseases which could be considered infectious or epidemic, the syphilis epidemic being a possible exception. However, see Sandison, "Diseases of the Skin," 451ff., and Frederick L. Dunn, "Epidemiological Factors: Health and Diseases in Hunter-Gatherers," in Richard B. Lee and Irven De Vore, eds., *Man the Hunter* (Chicago, 1968), 222.

27 For an excellent up-to-date survey of studies on the subject, see Sandison, "Diseases in Ancient Egypt," 30–34.

28 See the brief reference by D. O. Edzard, *AS* 16 (1965), 116, n. 30, who translates: "immer wieder ergreifen lassend" = ansteckend (Krankheit).

29 *CAD M II*, 283, quotes only this example.

regarded as a natural phenomenon and accepted as part of human existence. In fact, as pointed out by Biggs, in none of the Mari tablets "is there any reference to magical practice in connection with treatment of any illness."³⁰ The only exception is *ARM* X:130, lines 7–8.

This holds true in the Edwin Smith Papyrus (*ca.* 17th c. B.C.E.). In distinct contrast to the Ebers Papyrus, the Smith Papyrus—with the exception of thirteen incantations—is entirely rational in diagnoses and treatments. Significantly, this famous papyrus is almost certainly a copy of a much older document; possibly the basic text precedes the Fifth Dynasty and may go back to the first two dynasties. It seems possible, then, that the claims that Hippocrates was the first to separate medicine from religion, or that ancient Greek medicine was the first which "was singularly free from magical and superstitious practices and beliefs," are greatly exaggerated.

Magico-Medical and Medico-Secular Treatment

The lack of references to magico-medical treatment does not indicate any disregard for its importance. Provincial Mari, at the periphery of Mesopotamian influence, would hardly have been an exception to a very old and deeply rooted pattern. Sigerist well substantiates his statement that "throughout the course of its history Mesopotamian medicine maintained its religious and magic character but, at the same time, it was able to include many elements, observations, treatments, techniques that we consider rational."³¹ Referring to Egypt, Guido Majno, on the basis of the evidence derived from Herman Grapow, says the following:

Magic, like penicillin, is directed against the cause of disease. The choice between drugs and magic depends on the current set of causes. In ancient Egypt, where evil forces caused a lot of trouble, magic was a perfectly logical therapy, an accepted science, with Isis as patroness. There was no clearcut distinction between so-called rational medicine and magic: drugs and incantations were administered in all possible combinations, and by the same or by different practitioners. Magic was especially indicated against the so-called 'hidden diseases,' or internal ones, as we now say; but oddly enough, it was used also for wounds.³²

There is no doubt that both the magico-medical as well as the medico-secular arts of healing were part of an enduring culture reaching back into the distant past. Both existed side by side, having been simultaneously, and possibly independently, practiced, although their sources cannot be entirely separated from each other.³³ A distinction

30 Robert D. Biggs, "Medicine in Ancient Mesopotamia," *History of Science* 8 (1969), 97.

31 Henry E. Sigerist, *A History of Medicine* (Oxford, 1951), I:472ff.

32 Guido Majno, *The Healing Hand: Man and Wound in the Ancient World* (Cambridge, MA., 1975), 125.

33 See A. Leo Oppenheim, *Ancient Mesopotamia* (Chicago, 1964), 295ff. Note that evidence from a later date (than the Mari tablets) shows that in one instance a physician repudiates a king's assertion that his sickness is a punishment for his crimes (Meissner, *Babylonien und Assyrien*, 2:321), and in another instance a physician includes a recommendation of a magico-medical nature (Biggs, "Medicine," 97, n. 19; for a similar situation in Greece of the fifth c. B.C.E. (see *The Oxford Classical Dictionary* [1970], 661). These facts do not seem to reflect intellectual confusion. They show clearly that medical practitioners understood that anyone following supernatural treatment orders in his mind events in the belief that they will work in like manner.

between the two goes far back and was probably well established.³⁴ Broadly speaking, the science of medicine was grounded on accumulated observations: those inherited from remote ancestry and those based on common sense. The lore of successive generations became a tradition, which was further reduced to a semblance of a system divided into methods and doctrines. Probably the general populace considered serious and disabling diseases to be of supernatural origin, and expected magico-medical treatment. The medico-secular approach was, at times, restricted to the upper classes and more sophisticated individuals.

Contagiousness in Diseases and Taboos

The tablet states that Nanname has to be isolated because her disease is "catching" (*muštaḥḥiz*); therefore, the women with whom she comes in contact are at risk. The emergence of an awareness of contagion goes back to time immemorial. It does not seem to have originated with one specific disease but rather with the concept of pollution.³⁵ It found expression in the very old and widespread prohibitions we call taboos, and particularly those concerning pollution. While many of the taboos appear to us today to be irrational, even absurd, many of those related to pollution had medical significance and enforced sensible sanitary arrangements. They were themselves of the stuff of reality, meeting the needs and conditions of many environments. Many of those restrictions forbade certain activities and any direct or indirect contact with a wide range of supposedly infected persons, animals, objects, items, etc. These were regarded as polluting agents in themselves, capable of transmitting the *contagium*. Violators—besides meeting punishments—turned into carriers. In fact, the notion of contagion is an inseparable part of taboo rules against pollution since the avoidance of certain impurities is only meaningful when the impurity can pollute.

This framework of thinking is supported by a wealth of ethnographic data from many civilizations in various geographical areas. A remarkable parallelism and consistency exist about the way these rules operate in different social situations. The underlying ideas reflect a legacy from the layers rising up from depths of the past, and their principal function seems to have been self-protection against a real and threatened danger of the dissemination of transmittable diseases by a wide range of undesirable persons, objects, items, etc. It is noteworthy that some of the taboo rules related to pollution are codified in Biblical writings of various date. Not only did they pre-exist in oral tradition, but they are an obvious attempt to preserve rules going back to immemorial antiquity.

In Mesopotamia, the notion of contagiousness was widely known, reaching back to the distant past. Allusions and direct references are found in a number of incanta-

34 Edith K. Ritter, "Magical-Expert (= ĀŠIPU) and Physician (= ASŪ). Notes on Two Complementary Professions in Babylonian Medicine," *AS* 16 (1965), 299ff. See also Biggs, "Medicine," 96, and Sigerist, *A History of Medicine*, 1:298.

35 Owsei Temkin, "An Historical Analysis of the Concept of Infection," *Studies in Intellectual History* (Baltimore, 1953), 123–247; see also William Bullock, *The History of Bacteriology* (London, 1960), 3. From an anthropological point of view, Mary Douglas' publications, although rich in provocative interpretation, are only of tangential pertinence for contagion; see *Purity and Danger, An Analysis of Concepts of Pollution and Taboo* (New York/Washington, 1966) and "Pollution," *Implicit Meanings, Essays in Anthropology* (London/Boston, 1975), 47ff.

tions, conjurations, poems and prayers,³⁶ frequently reflecting traditions and a continuity of behavior. In some instances, no matter what etiological factors are attributed to sickness, a background of transmission of the disease was presupposed. Sigerist discusses this notion in Babylonia, which "was purely spiritual, not in any way medical, but it had hygienic consequences."³⁷ Recently M. J. Geller³⁸ drew attention to close parallels between the Šurpu incantation texts and Lev. 5:1–5, with particular reference to contact with human "uncleanliness." Hence, by the time of Zimrilim, the notion of contagion was accepted as a matter of fact.

Transmission by Fomites: "Cup," "Seat" and "Bed"

According to the Mari tablet, a carrier is liable to transmit the disease by his or her fomites. These include, in the case of Nanname, her personal belongings such as eating utensils, as well as her bench, stool, bed or bedding, and obviously any other objects like her clothing, her comb, ornaments, etc. Probably, the use of her place of shelter was also prohibited to others, as was the latrine she used. All these would be considered liable to absorb, hold, and propagate the infectious agent.

Strictly speaking, the text refers only to the carrier's "cup," "seat" and "bed" (lines 11–16) as modes of transmission. In a slightly different sequence almost the same objects appear in the Šurpu text³⁹ as well as in a Sumerian incantation text (seat, bed, roof, room).⁴⁰ However, it may be safely assumed that agents of the spread of infection were not limited to the above. It seems rather that the reference to the "cup," "seat" and "bed" is a stereotyped expression; it refers to all inanimate personal objects used by Nanname directly, or to those of which she availed herself for physical functions. Although "incidence of infection beliefs in physiological pollution vary from place to place,"⁴¹ it seems almost certain that in Mari, as in later Israel, fomites included every conceivable inanimate object, material and substance relative to the carrier. In fact, all these are itemized in the Bible.⁴²

36 For texts, see Lambert, *BWL*.

37 Sigerist, *A History of Medicine*, 1:446.

38 M. J. Geller, "The Šurpu Incantations and Lev. 5:1–5," *JSS* 25 (1980), 181ff.

39 Accordingly (*Šurpu*, II: 100–103) among possible causes for contracting a *māmītu* (as to *māmītu* Geller, "The Šurpu Incantations," 183ff.), the following are listed: "he slept in the bed of a victim of a *māmītu*, he sat on the seat of a victim of a *māmītu*, he [a]te out of a tray of a victim of a *māmītu*, he dran[k] from the cup of a victim of a *māmītu*. Likewise, also briefly [*Šurpu*, III: 19], "*māmītu* originates from the cup or tray." See Reiner, *Šurpu*; M. Jean Bottéro, *Annuaire 1976/1977, École Pratique des Hautes Études*, iv^e, section *Sciences historiques et philologiques* (Paris 1977), 93ff.

40 Lutz, *PBS* 1/2, 127, cols. 22–25 (p. 39).

41 Douglas, *Implicit Meanings*, 55.

42 Any bedding (. . . [Lev. 15:4–5, 20, 21, 23, 24, 26]), any object used for sitting (Lev. 15:4, 6, 7, 20, 22, 23, etc. [כל המשכב]), saddle (Lev. 15:9 [כל המרכב אשר ירכב עליי]), every cloth (כל בגד), every article of skin (שְׁבָעֵר [כל אשר יש בער]), of wood (כֶּלֶב עץ), or a sack (שַׁק), "any article that can be put to use" (Lev. 11:32 [כל אשר עשה עשה מלוכה בהם]) like kind of curtains, tent-cloth covers (Exod. 26:7; 35:26, etc.), or a fly-net to cover the face during sleep for protection against insects (however, see Bar-Adon, *Encyclopedia Biblica* 4:8–9 [Hebrew]; P. Kyle McCarter, Jr., *I Samuel*, Anchor Bible (Garden City, NY, 1980), 326; earthenware vessels (Lev. 15:12 [כל חרס]), firepots and ovens (Lev. 11:35 [כָּל נִזְבֵּת / תְּנוּזִים]), articles made of gold, silver, copper, iron, tin and lead taken from an

Fomites and Animism

The extension of a person to his property did not come from experimental studies in Mari, although this was pursued on a high level.⁴³ Nor had it anything in common with the interest in the etiology of diseases, a matter which absorbed the scientific curiosity of the ancients but remained an impenetrable mystery. It seems rather to be rooted in a kind of "animism" that was a part of the general order of the ancient world. Accordingly, animals, inanimate objects of all matter, as well as natural phenomena are—*independent of human beings—the abodes of an inherent personal life of their own.* In short: every *thing* lives and acts.⁴⁴ Pedersen's words that "nothing is in itself lifeless, but everything has the character of a soul and must therefore be susceptible to the contents of a soul,"⁴⁵ are, of course, a very general notion and not restricted to Israel. This cannot be proven categorically, yet it helps to understand a good deal more of the ancients and their process of reasoning than too rigid an adherence to Aristotelian logic and the radical Greek change in thinking. The words of Sigerist deserve to be quoted:

It was probably easier for primitive and early Civilizations to develop a clear concept of the contagiousness of disease than it was for later civilizations, for the good reason that among primitives and in early antiquity we usually find an outspoken magico-religious concept of contagion. If soul substance was contained in every object that an individual touched, he could be hit by magic through any such object . . . On the other hand, if evil was in an individual it could be spread not only through direct contact but also through the objects that he had touched. Not only the dead were dangerous, but their clothing and other possessions were too, and the same was true of the sick, or of certain sick people at least.⁴⁶

Within such conceptual framework, which may go back to Paleolithic times,⁴⁷ and was certainly part of the life of the Sumerians, Babylonians,⁴⁸ Egyptians,⁴⁹ and the Hebrews,⁵⁰ it is clear that personal belongings of all kinds were considered inherent

enemy at war (Num. 31:22–24). Note that oral contact with exchange of saliva transmits *contagium* (Lev. 15:8).

43 André Finet, "Les médecins au royaume de Mari," *Annuaire de l'Institut de Philologie et d'Histoire Orientales et Slaves* 14/1 (1954–57), 153ff.

44 Henri Frankfort, *Before Philosophy* (Baltimore, 1963), 12, 14; see also Th. Jacobsen, in *ibid.*, 142.

45 Pedersen, *Israel*, 1:170.

46 Sigerist, *A History of Medicine*, 148.

47 This is purely speculative. It is based on the mere presence of archaeological records of female images and figurines as well as on animal images, some of which were "killed." For discussion of these beliefs, see Lerori-Gourham, *Les Religions de la Préhistoire* (Paris, 1964); Alexander Marshack, *The Roots of Civilization* (New York, 1971); Peter J. Ucko and Andrée Rosenfeld, *Paleolithic Cave Art* (New York/Toronto, 1967).

48 Th. Jacobsen, *Before Philosophy*, 142–56, and the relevant literature quoted.

49 It is difficult to find clear examples, but see Wilson, *Before Philosophy*, 48–49; Jacques Vandier, *La religion égyptienne* (Paris, 1949), 16; Jean Yoyotte in G. Posener's *Dictionnaire de la Civilization Égyptienne* (Paris 1959), 203, col. b. Note hieroglyphic signs with their hands or legs (*ANEPE*, fig. 314–16, and see also Allan Gardiner, *Egyptian Grammar* (Oxford 1969), sign-list N40, V15, and W25).

50 Pedersen, *Israel*, 1:100, 131–33, 170, 178, 201, 227–28, 279, 288, 308, 481, 483, and 2:21, 215, 227, 269, 262–63, 278, 507–8, 541, 641.

and inseparable parts of their human owners. Hence, in the case under discussion, Nanname's personal belongings are, like herself, infected; they too may propagate the disease, precisely as Nanname's contact with other women is liable to do.

Quarantine

Similarly, the isolation of Nanname is a continuation of a long-known and widespread custom of isolating sick persons, particularly those who may be carriers of infection. The chief concern was not the treatment of the patient but the prevention of the spread of the supposedly infectious disease.

Isolation goes back to time immemorial. The opinion that "Aus dem Zweistromlande war den Juden die Kenntnis der Kontaktübertragung unheilbarer Hautkrankheiten und die daraus folgende prophylaktische Massnahme der Aussetzung überkommen, und wir müssen im Lev. die erste gesetzliche Formulierung der Isolierungnotwendigkeit sehen,"⁵¹ is groundless. So too is the statement by R. K. Harrison that "the Hebrew priest-physicians appear to have been the first in the ancient world to isolate persons suspected of infection or contagious diseases."⁵² On the other hand, Alland's opinion that "quarantine as an effective method of prevention far outdates other techniques of preventive medicine,"⁵³ though not supported by primary references, seems to be fully justified.

According to some taboo practices still prevalent among primitives, a fixed period of isolation or semi-isolation is almost commonplace during the onset of puberty, menstruation, post-partum confinement, widowhood, death in the family, etc. Some of these customs are well described in Leviticus, and they illustrate archaic doctrines which were widely known long before Israel's arrival in the historical arena.

The main sociological dictum of these practices—and not their rationalization—may be explained as follows: the reaction of distaste brought about by the mere presence of persons so affected; the psychological impact upon the community by the loss of some functioning members; and the inevitable disruption of the interactive patterns of those affected, as well as of the community as a whole.⁵⁴ The communal equilibrium would be disturbed for a while, but the main objective—to rid the community of persons who appeared to menace its safety or health—would be achieved. Certainly, the transition from such taboo practices and beliefs to the imposition of similar measures in the presence of an obvious disease is logical.

Methods of isolation varied with the types of diseases and with societies of differing cultures. The hunter-gatherers, with a decentralized organization and wide variation in culture, doubtless tried all of the logical possibilities for controlling contagious diseases. Thus, among some of them, the sick are abandoned, to be left at

⁵¹ *Reallexikon für Antike und Christentum*, 1:1024.

⁵² Roland Kenneth Harrison, *Leviticus. An Introduction and Commentary* (Downers Grove, Ill. 1980), 140.

⁵³ Alexander Alland, Jr., *Adaptation in Cultural Evolution: An Approach to Medical Anthropology* (New York, 1970), 17.

⁵⁴ Eliot Dismore Chapple and Carleton S. Coon, *Principles of Anthropology* (New York, 1953), 47ff.; Carleton S. Coon, *A Reader in Cultural Anthropology* (New York, 1967), 569, 581, 605ff.

the mercy of wild animals or of anyone who comes upon them,⁵⁵ or to die of exposure. Among others, they are burned or even buried alive, and their huts and goods are destroyed.⁵⁶

On the other hand, many primitives extend much compassion and kindness to the ill.⁵⁷ Isolation of the sick in small huts is also known. According to Carleton S. Coon, "This is an old practice common among American Indians and also found in the Caucasus tribes of modern times. It is due, of course, to an ignorance of the cause of illness and a fear of contagion, medical or otherwise."⁵⁸ Similarly, the contemporary Fore of New Guinea maintain a self-imposed quarantine with an isolation period of 14 to 39 months to offset the spread of a disease regarded as contagious.⁵⁹

To summarize: the isolation imposed upon Nanname rested on a widespread and long-established custom. Compulsory isolation of the hopelessly ill, particularly those suffering from communicable diseases, was sanctioned by well-established tradition, the beginning of which is lost in antiquity.

Isolation Period

It may be assumed that the duration of the isolation period of Nanname depended on how long the disease was manifest or, as in the Bible, was set at a fixed time limit, based on experience. The criteria would be the nature of the disease and the diagnosis of the infection.⁶⁰ In the case under discussion, due to the mild nature of the infection and to the social status of the carrier, no isolation period was fixed; probably it was determined by the results of constant surveillance.

Location of Quarantine (bit parsu)

For the same reasons, the actual location of the quarantine was possibly confined to Nanname's personal residence, as in Israel in the case of the period after childbirth

55 Sigerist, *A History of Medicine*, 1:153; Leo W. Simmons, *The Role of the Aged in Primitive Society* (New Haven, 1945), 225ff.; see particularly Coon, *A Reader in General Anthropology*, 55, 97. Note that during an outbreak of poliomyelitis among a group of chimpanzees, the animals avoided the sick individuals and discouraged siblings from trying to help animals; see Jane Lawick-Goodall, *In the Shadow of Man* (Boston, 1971), 223.

56 Sigerist, *A History of Medicine*, 1:155–56; and Simmons, *Role of the Aged*, 236ff. Apparently this custom was not unknown to Egypt as well, see Sigerist, 274. The case of a verruga type lesion in a mummy found in the Nasca area in Southern Peru is no evidence of killing such victims, since the actual causes of death are not clear. See Marvin J. Allison, Alejandre Pezzia, Enrique Gerszten, and Daniel Mendoza, "A Case of Carrion's Disease Associated with Human Sacrifice from the Huari Culture of Southern Peru," *American Journal of Physical Anthropology* 41/2, (Sept., 1974). See now James M. Vreeland and Aiden Cockburn, "Mummies of Peru," in *Mummies, Disease and Ancient Culture*, 163–64.

57 Sigerist, *A History of Medicine*, 1:160; Coon, *Reader*, 123, 231, 413; see also Ulf Lind, "Medizin bei Naturvölkern," in Heinrich Schipperges, Eduard Seidler, and Paul U. Unschuld, eds., *Krankheit, Heilkunst, Heilung* (Freiburg/München, 1978), 61–62.

58 Coon, *Reader*, 413.

59 George J. Armelagos and Alan McArdle, "Population, Disease and Evolution," *American Antiquity* 40/2, 1–10 (1975), 3.

60 According to Biblical sources of different date, the period of isolation ranges from one day until the date of the actual lapse of the disease (Lev. 13:46). See: "until the evening" (Lev. 11:24, 25, 30; 15:5–23;

(Lev. 12:5; cf. 2 Sam. 11:4). It is true that no reference is made in our text to a quarantine in the sense of a place where persons suspected of carrying a contagious disease are kept in isolation. However, the implications are that this was the well-accepted rule. In fact, *ARM* X, 130:4, 6, which contains further instructions by Zimrilim to Šibtu, refers to *bît parsu*, i.e., a “separate house/room” or rather “isolation house/room” in the sense of a ward, set apart from others, in which a carrier was confined. The reference in Lev 13:46 (בְּדֶרֶךְ שָׁבֵב) clearly shows that cross-infection was well understood in Israel, and it is likely that in Mari the *bît parsu* also implied special facilities for keeping every serious case in separate living quarters.

The passage treats *parsu* as a verbal adjective, and therefore the translation “isolation house/room” is not textual but interpretive. However, *bît parsu* in this instance refers clearly to a ward specifically set aside—probably at some distance from the city—for the purpose of quarantine. No doubt its function was identical with the Biblical בֵּית הַחֲפִשָּׁה (2 Kings 15:5; 2 Chr. 26:21)⁶¹ and the earlier חֹצֶן לְעִיר (Lev. 14:40, 41, 45, 53), or חֹצֶן לְמַחְנֶה (Lev. 13:46; Num. 5:2; 12:15; Deut. 23:11; etc.).⁶²

Disposition of Fomites

Nothing is known of the procedure for disposing of the fomites. It is not clear how long the materials remained infectious under existing environmental conditions, whether they were subject to disinfection after a certain period of time,⁶³ or whether they were destroyed. According to the elaborated Biblical regulations, the fomites were subject to a ritual of “purification” (disinfection). The exceptions were earthen utensils (כָּלִי חָרֶשׁ), firepots (חַנוּרִים), or ovens (כִּירִים), infected by contact, which—for unknown reasons—had to be destroyed (Lev. 11:33, 35; 15:12). Similarly, only in cases of a נָגָע צְרֻעָה garments made of wool or linen, in warp or weft or anything made of skin had to be burned (Lev. 13:47–59). Also, dwelling houses occupied by persons with that disease had to be demolished (Lev. 14:34–53).

It is suggested that in Mari the fomites were considered infected for the period of communicability of the carrier, i.e., as long as lesions were evident on the skin. This period was probably concluded by a purification ritual whereby the fomites were rid of the *contagium*.

Num. 19:7–8, 19; Deut. 23:12); three days (Num. 19:12, 19); seven days (Lev. 12:2; 13:31; 15:13, 19, 24, 28; Num. 12:14–15; 19:12, 14, 16; 31:19); thirty-three days (Lev. 12:4); eighty days (Lev. 12:5).

61 Note the alleged parallel euphemism in Ugaritic-Hebrew, *bt hptt* as suggested by Gray (John Gray, *The Legacy of Canaan*, Leiden 1965, 55 n. 5), and Jacob M. Myers, *I and II Chronicles*, (Anchor Bible [Garden City, NY, 1965], 151). However, see now Mitchell Dahood, “Proverbs 28, 12 and Ugaritic *BT HPTT*,” *Publicado en “Homenaje a Juan Prado”* (Madrid, 1975), 163–66.

62 Note that Deut. 23:13 (זֶה תְּהִיא לְמַחְנֶה יְהִי לְךָ וְאֶתְרָם מִזְמָן יְהִי לְךָ אֶתְרָם מִתְקָנָן יְהִי לְךָ).

63 Note that according to Girolamo Fracastoro, “It is, indeed, wonderful how the infection of phthisis or pestilential fevers may cling to clothing, rooms, beds and floors even after two years have passed . . .” See Charles and Dorothea Singer, “The Scientific Position of Girolamo Fracastoro [1478?–1553] with Special Reference to the Source, Character and Influence of His Theory of Infection,” *Annals of Medical History* 1/1 (Spring 1917), 24.

Résumé

It appears that although this Mari tablet is the earliest written evidence so far recorded from Mesopotamia confirming close familiarity with contagious diseases and methods of arresting their spread, none of its elements reflect any innovation from practices that long predate it. They all have a prehistory extending back far before Zimrilim. Nor does the actual case present new conditions which pose new problems. As pointed out, the notion of contagiousness, the usage of isolation of patient-carriers, as well as the concept of fomites, were defined by long tradition. They were drawn from many generations of accumulated experiences, reaching far back into the past. It is increasingly clear that long before Zimrilim, man in his struggle for survival, and in order to dissipate the fear and discord caused by such diseases, applied the attitudes and the thinking well illustrated in this tablet.