

Investigating the healing arts of Ancient Mesopotamia

Barbara Boeck, of the Institute for Mediterranean and Near Eastern Languages and Cultures, CSIC Madrid, has studied the cuneiform records of Ancient Mesopotamia to explore their healing methods. With a particular focus on medicinal plants and the practice of divination, she set out to discover how Babylonian practitioners treated their patients, what medicinal plants they recommended for which illnesses, and how they explained pain and illness. Barbara describes how the Babylonian concept of healing included religious belief and magic. She collaborates with Amots Dafni in studying medicinal plants and Ignacio Márquez Rowe regarding the divinatory technique of extispicy.

Early in Ancient Mesopotamia's history (mid-fourth millennium BC), cuneiform records using impressed signs on wet clay were invented. Among these records were many medical prescriptions and a few pharmacological manuals. Over time, the arrangement of these texts varied but, aside from subtle changes in drug terminology, little changed in Babylonian pharmacology or approach to medicine. Deciphering these texts is complex but provides fascinating insights into the Babylonian concept of healing and their knowledge of medicinal plants.

Around 5000 medical prescriptions have been found in libraries of King Assurbanipal of seventh-century Nineveh, and in temple and private libraries and hoards from other Neo-Assyrian cities and cities of sixth- to third-century Babylonia. First pharmacological texts date to the second half of the third millennium BC, being unearthed at the ancient city of Ebla (located in the Idlib Governorate, Syria). However, the majority comes again mostly from Assurbanipal's

library. They record nomenclature and lexicographical issues, descriptions of plants, and herbals that link plants with the ailments they alleviate.

This cuneiform literature provides evidence that ancient practitioners were competent in curing diseases or complaints, often using multiple prescriptions for the same problem. Barbara Boeck and colleagues continue to mine these records for insights into the healing methods of those times, as described here.

MEDICINAL PLANTS OF ANCIENT MESOPOTAMIA

One of the best-documented cuneiform medical sources is a lexicon of drug terms, the *Uruanna: maštaka!* (meaning 'the plant whose home is heaven is the plant *maštaka!*'). It contains about 1300 terms for drugs of plant origin which, taking into account variants and synonyms, describe about 340 different plants. Plants (herbs, trees and bushes, spices, grasses, algae, aromatic plants and fungi) dominated Babylonian healer's repertoires; many

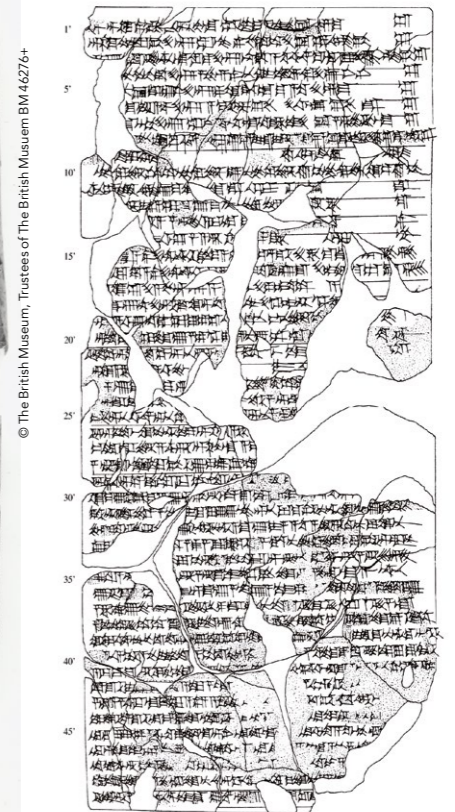
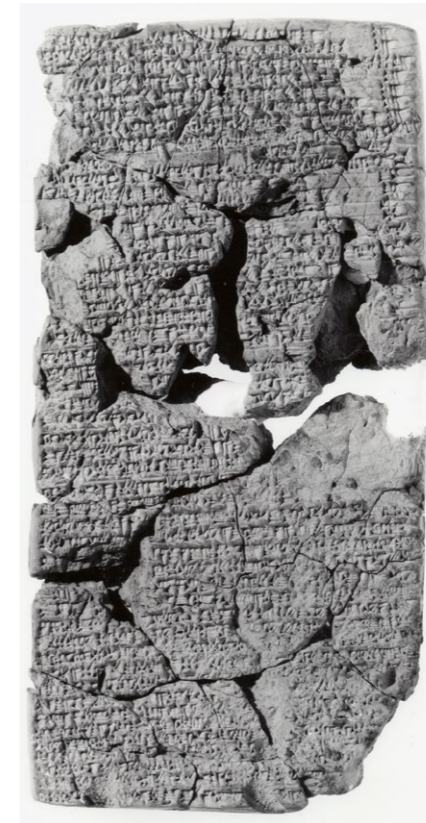
were also common foods (onion, garlic, pomegranate, fig and date).

Written records helped practitioners to recognise and collect medicinal plants and to avoid poisonous plants. The main source for plant descriptions was the manual *Šammu Šikinšu* (meaning 'the appearance of the medicinal drug'), which cannot be fully reconstructed from surviving tablets. While medical recipes often involved entire plants rather than parts, plant descriptive texts provided more on the parts and their efficacy (roots, stems, leaves, flowers, fruits and seeds) and on plant products (flour, powder, chips and ashes).

So far, few medicinal plants have been identified with certainty, and correlation between plant names and samples or illustrations is poor. The same terms are used for different plants and the ancient approach to plant classification is inadequate for modern botany. From written records, it is difficult to determine what substances of animal origin or minerals (often described only as 'stone') were used medicinally. Some terms are clearly animals but, when mentioned as 'of the field' in medical recipes, they are actually plant names. Although there is archaeobotanical information for many ancient sites, not every region and period is covered.

Information on sources of medicinal plants comes from letters, while likely places for cultivating them are given in reports about the deeds of the Assyrian kings that include their botanical gardens. One such text records 28 trees, known from other sources to be of medicinal value. This may be significant since pharmacological and medical texts refer to only 35 trees or shrubs used as medicines. A small tablet ascribed to king Marduk-apla-iddina, who ruled Babylon in the eighth century BC, describes 67 plants in his garden, half of which were medicinal.

There are references to plant habitat in plant description texts and medical recipes, as well as advice on correct times and methods of harvest. Documents like the drug inventory from Assur, dating from the seventh century BC, describe how medicinal substances could be stored. It lists 177 drugs, of



Right: A hand-copy of the obverse of a cuneiform tablet that contains incantations that were recited during the therapy of massaging a patient. Cuneiform signs consist of usually several wedges, so missing one wedge can lead to a wrong reading of the sign and consequently to a wrong translation of words and whole texts.

Cuneiform literature provides evidence that ancient practitioners were competent in curing ailments, often using multiple prescriptions for the same problem.

which 159 (about half the known number of drugs from Mesopotamian sources) are of plant origin.

Boeck and Dafni have collaborated in the task of accurate identification of medicinal plants and analysis of their use and administration. They revisited the healing plants mentioned in the Bible. Working together with specialist botanists, they were able to revise the number of Biblical medicinal plants, as described in a previous [Research Outreach](#) article.

HEALING THROUGH MEDICINE OR MAGIC

For Babylonians, healing addressed wellbeing in religious, social and psychological terms, while curing meant treatment and removal of illness. They used prayers, exorcism and medicinal

substances that they knew influenced certain functions of the body. In medical prescriptions, disease as illness or demon was treated in the same way, indicating that choice of treatment did not depend on religious, magical or natural perceptions of disease. However, practitioners responded to the double nature of disease—illness or demon—by using different incantations.

Religious premises lay behind the choice of medicinal plants to treat specific ailments in medical prescriptions. Medical incantations, recited to guarantee the efficacy of both treatment and medication, were recorded; Boeck has reconstructed over 60 such incantations. Pains were thought to be caused by a specific disease-demon that was given different names according to the body parts it attacked, while



Barbara Boeck studies the cuneiform records of Ancient Mesopotamia to explore their healing methods.



Modern impression of an Assyrian cylinder seal (ca. 900-720 BCE) showing in the lower register a healing scene in a reed hut. Two dogs, the animal of the ancient Mesopotamian healing goddess Gula, flank the hut in order to protect the patient.

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treatment aimed to drive the demon from the body.

Disease was not explained as dysfunction of the body or as deviation from its normal state but rather in metaphysical terms, establishing analogies and correspondences between plants and diseases or diseases and deities or other supernatural powers. Some of the metaphysical analogies were connected with the important healing goddess Gula.

While completing the lifetime project of her teacher Franz Koecher (who was preparing the text edition of *Uruanna*, *Šammu šikinšu*, lists of simple drugs and medical prescriptions at the time of his death in 2002), Boeck came across a line that associated a plant named 'Ninigizibara's dog' with Gula. This led her to study afflictions attributed to Gula and cured with Gula's plants. She hoped it would help her discover whether the medical literature reflected understanding of the healing goddess as she is described in religious texts.

Boeck divided the body of medical writing into three parts: diagnostic and prognostic texts compiled into

the handbook *Sakikku*; incantations embedded in medical prescriptions or referring to a medical context; and medical prescriptions recommending healing plants that allude to the healing goddess. She wondered whether healing plants were used primarily out of religious motivations or because of their medicinal properties.

Careful study of the texts led her to discover several plants and alternative names linked to Gula and to tease out the possible reasons for this. She suggests that the use of different



A tablet with the drawing of the spiral colon of a sheep. Under the image there is a tiny cuneiform inscription which reads "Right and left face each other on the right side and lie close to each other." The diameter of the almost round tablet is 11.2 cm.

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names for the same plant could reflect the different medical condition to be treated. Healing spells shed further light on some uses. The strong connection of Gula with dogs appeared to be an allusion to protection, both literal and medical.

Boeck suggests that Gula's plants did have medicinal properties but that the religious concept of the healing goddess was grafted upon them, perhaps to enhance their efficacy. An example is the ideas about biliary diseases and digestive disorders. Gula governed the bile, which was thought to regulate the body fluids of the intestines. To aid healing, incantations to her were recited. Meanwhile, treatment consisted in the prescription of medicinal plants, associated with the healing goddess, which were in fact emetics or laxatives.

DIVINATORY TECHNIQUES

It was believed that calamities foreseen by divinatory techniques would enable people to forestall them. Boeck studied two such practices: (1) prediction of a person's character and fate by reading facial expressions, body shape and way of talking (physiognomy); and (2) reading of entrails of sheep (extispicy or haruspicy). Until 20 years ago, little was known about the first method, probably used to choose a good wife or trusted servant. Boeck recovered and pieced together a physiognomic treatise, identifying and deciphering fragments from collections worldwide (many kept for over 100 years unread).

The second divinatory technique (extispicy) is the subject of Boeck's most recent research. Babylonians were famous for examining the liver (Old Testament, Ezekiel 21:26) but little is known about their study of the large intestine of sheep. Over the last 15 years, Boeck and Ignacio Márquez Rowe have gathered testimonies for these practices, including divination texts and depictions of the colon drawn to teach apprentice diviners. To make predictions for their clients (notably kings), diviners observed how the sheep's colon coiled. For example, coils covered with hard pustules promised much-needed rain. Results from the reconstruction of these fragments on divination are due to be published in 2021.



Behind the Research

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Research Objectives

Barbara Boeck is interested in ancient Mesopotamian healing therapies with special focus on medicinal plants and the practice of divination.

Detail

Bio

Dr Barbara Boeck is Senior Researcher at the Institute for Mediterranean and Near Eastern Languages and Cultures, CSIC Madrid. Interested in ancient Mesopotamian healing therapies with special focus on medicinal plants and the practice of divination, in particular physiognomy and haruspicy. Her books include the edition of ancient Mesopotamian physiognomic divination (2000), a treatise on Sumerian and Akkadian healing incantations (2007), and a study on Babylonian medicine (2014).

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Collaborators

- Prof Dr Amots Dafni (Institute of Evolution, Dept. of Evolutionary and Environmental Biology, University of Haifa, Israel) is collaborating in the study of medicinal plants in the ancient world.
- Dr Ignacio Márquez Rowe (Institute for Mediterranean and Near Eastern Cultures and Languages, CSIC, Madrid) is collaborating in the research about the divinatory technique of extispicy.



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References

Böck, B. (2011) Sourcing, organizing, and administering medicinal ingredients, Ch. 32. *The Oxford Handbook of Cuneiform Culture* (eds K. Radner & E. Robson) Oxford University Press.

Böck, B. (2015) *Shaping Texts and Text Genres: On the Drug Lore of Babylonian Practitioners of Medicine*. Editorial AUSA.

Böck, B. (2014) *The Healing Goddess Gula: Towards an Understanding of Ancient Babylonian Medicine (Culture and History of the Ancient Near East)*. Brill.

Dafni, A. & Boeck, B. (2020) Revisiting the medicinal plants of the Bible and the Holy Land. *Research Outreach* 114, 122-5. <https://researchoutreach.org/articles/revisiting-medicinal-plants-bible-holy-land/>

Personal Response

Would you like to say something about the possible application of discoveries like these in modern medicine or history of medicine or plant biology?

// The immediate use for modern medicine depends heavily on the question whether the cuneiform plant names can be identified with botanical species. I am rather sceptical about finding new medicinal plants but I believe that it is perfectly possible to discover not yet known medication or application forms of common drugs.

The cuneiform evidence testifies to the broad experience of Assyrian and Babylonian healers with plants. Actually, many of the uses tally with the information of the ancient Greek plant lore, pointing to a clear transmission of knowledge from the East to the West. The history of medicine commonly attributes the beginnings of the Western tradition to ancient Greeks but this should be revised. //

