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Cécile Michel

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*LES MITES D'ASSYRIE*  
MOTHS IN THE ASSYRIAN TEXTS  
OF THE SECOND MILLENNIUM B.C.

CÉCILE MICHEL

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE, PARIS

How did people in the Ancient Near East deal with moths that damage textiles? Two cuneiform sources, separated by more than half a millennium, give information on this topic: the archives of old Assyrian merchants of central Anatolia (nineteenth century B.C.) and written orders of a high official of middle Assyrian kings in Aššur (thirteenth century B.C.). The vocabulary of moth infestation and the resulting damage are analyzed here. Airing textiles was the most common way to fight these insects, but other methods are known from the classical world. Salvaging material from ruined cloth was also practiced.

THE MOTH WAS ONE OF MANY INSECTS that people from the ancient Near East had to battle. Although found universally and at all periods of the year, the moth is relatively rarely mentioned in written documentation from antiquity, possibly perhaps because its damage, though common, was not on a large scale. Normally it is cited in cuneiform texts almost exclusively concerned with fabric packed in bundles or enclosed in containers for long periods. For this reason, it is not surprising to find moths mentioned in the private archives of the Assyrian merchants who, at the beginning of the second millennium B.C., exported large quantities of textiles to Anatolia, storing their goods in warehouses of the *kārum* Kaniš.

Some six hundred years later, the chief steward of the Assyrian royal storehouse in Aššur, Bābu-aha-iddina, also had to fight moths attacking wool and other textiles stored in sealed chests. He orders trustworthy agents to protect them. The rare references to moths and to information on the conservation of textiles in Assyrian tablets of the second millennium B.C. allow a small study of these insects, of the damage they caused, of steps taken to protect textiles threatened by their appetite, and the use made of the damaged material.

DOCUMENTATION

The Old Assyrian tablets from Kültepe are unique in documenting the presence of moths in textiles.<sup>1</sup> Leaving

<sup>1</sup> Abbreviations are those of the *Chicago Assyrian Dictionary* and the *Reallexikon der Assyriologie*. Additional abbreviations are: *CTMMA* 1 = M. T. Larsen, "Old Assyrian Texts

Aššur, donkey caravans loaded with tin and textile bundles reached Kaniš in six weeks. Once there, the donkeys were sold, the tin and the textile packages were either stored locally, forwarded to other Assyrian commercial settlements in Anatolia, or offered for sale in Kaniš. Textile bundles, normally still sealed, could be stored for appreciable intervals before clearance by Anatolian authorities, transfer to sales representatives, or sale.

Four OA letters mention the presence of moths in textile bales. One tablet, preserved in New York, is written by two members of Imdilum's family, Šū-Labān and Aššur-imitti, both living in Aššur (*CTMMA* 1 77, 7–40).<sup>2</sup> Anxious about goods they sent to Kaniš that seem moth infested, they ask their representatives there to verify the stock and to take care of the damage. The second letter, written by Ilī-aLUM from somewhere in Anatolia, is addressed to Aššur-nādā in Kaniš (*TTC* 14, 36–39). Ilī-aLUM informs his correspondent that some recently sent

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(Nos. 71–98)," in *Cuneiform Texts in the Metropolitan Museum of Art, 1: Tablets, Cones, and Bricks of the Third and Second Millennia B.C.*, ed. I. Spar (New York: The Metropolitan Museum of Art, 1988); *TPAK* 1 = C. Michel and P. Garelli, *Tablettes paléo-assyriennes de Kültepe*, vol. 1 (*Kt* 90/k) (Istanbul: Institut des études anatoliennes Georges-Dumézil, 1997); *TTC* = G. Contenau, *Trente tablettes cappadociennes* (Paris: Geuthner, 1919).

<sup>2</sup> M. Ichisar, *Les Archives cappadociennes du marchand Imdilum* (Paris: ERC, 1981) and M. T. Larsen, "Your Money or your Life! A Portrait of an Assyrian Businessman," *Societies and Languages of the Ancient Near East: Studies in Honour of I. M. Diakonoff* (Warminster: Aris and Phillips, 1982), 214–45.

fabrics were infested.<sup>3</sup> The third tablet, just published, concerns almost one hundred pieces of textile stored in the town of Zalpa (TPAK 1 58, 3–7), one fifth of which had damage.<sup>4</sup> The last text, unearthed in 1993 and still unpublished, belongs to Aššur-taklāku's archives.<sup>5</sup> As a result of difficulties with the Anatolian palace, this merchant was in jail, his business neglected. When he is released, he complains about the commercial damages he suffered, among which were moth attacks (*Kt 93/k 542*).

Another OA private letter refers to the inventory of a large batch of fabrics stored in a private house in Kaniš (*TCL 14, 28*). More than two hundred pieces belonging to Innāya were deposited in the house of Imdilum's daughter in Anatolia.<sup>6</sup> According to instructions the owner sent, four of his representatives were to air the textiles and then repack them.

The airing of textiles is also attested by a few tablets belonging to the Middle Assyrian period in Aššur. These texts, discovered during the 1908 excavations at Aššur, west of the Nabu temple, recall the activities of Bābu-aha-iddina, son of Ibašši-ili, a high official of the Assyrian kings.<sup>7</sup> His letters contain orders to trustworthy

representatives concerning the inspection, the delivery, or the arrival of different kinds of goods or raw materials. The representatives are to open sealed storerooms, unseal chests, and withdraw from them a wide variety of objects, mostly woolen garments but also ivory, ebony, lapis lazuli, furniture, wooden articles, leather, weapons, spices, ointments, oil, wax, alum, and wine. They are to register these materials on tablets and send them for transfer to craftsmen.<sup>8</sup> Textiles are to be aired before once again being stored in chests. Every container is to be sealed again and deposited in sealed storerooms.<sup>9</sup>

Two letters and one administrative document belonging to Bābu-aha-iddina contain orders concerning the airing of textiles preserved in sealed chests. Both of the letters, *KAV 99* and *109*, dated by the eponyms Ittabši-dēn-Aššur and Šunuqardu, were addressed to the same majordomo (*ša muḥḥi biti*), Aššur-zuquppani, in both tablets; but also to Kidin-Gula in *KAV 99*.<sup>10</sup> This last message was also sent to Ma<sup>2</sup>anāyu and Aššur-bēl-šalim. To make sure his orders are followed, Bābu-aha-iddina conveyed his letters also to commissioned agents, trustworthy intermediaries (*qēpum*) or artisans (*kāširum*); frequently he also sent along his own cylinder-seals.<sup>11</sup>

The third tablet concerned with the same subject is an administrative text published by E. Weidner in 1959.<sup>12</sup> It reports on the execution of the order conveyed in *KAV 99*. During the eponymy of Ittabši-dēn-Aššur, the three *qēpū* of *KAV 99* (and Ma<sup>2</sup>anāyu, one of the addressees, as well) discover damage while examining the textiles. They separate the damaged textiles from those unaffected and hand them over to two stewards. One other letter fragment (*KAV 195 + KAV 203*) in Bābu-aha-iddina's archives must be added to this corpus because it also re-

<sup>3</sup> For the reading of this personal name, see J. G. Derksen, *NABU* 1991, no. 9. According to this author, there should be a reading "num<sub>x</sub>" for the sign LIM. See also V. Donbaz, *NABU* 1993, no. 6.

<sup>4</sup> T. Özgüç entrusted the 888 tablets discovered in 1993 to P. Garelli and to me, and they will be published in a forthcoming volume of a new series, *TPAK*. See already C. Michel, "Quelques réflexions sur les archives récentes de Kültepe," *III Uluslararası Hititoloji Kongresi*, ed. A. Süel (Çorum, Eylül 1996; in press). I would like to thank warmly T. Özgüç for permission to cite this unpublished text.

<sup>5</sup> C. Michel and P. Garelli, "Heurts avec une principauté anatolienne," in *Festschrift für Hans Hirsch zum 65. Geburtstag gewidmet von seinen Freunden, Kollegen und Schülern*, ed. A. A. Ambros and M. Köhbach (Vienna: Institut für Orientalistik, 1996): 277–90 (= *WZKM* 86).

<sup>6</sup> C. Michel, *Innāya dans les tablettes paléo-assyriennes* (Paris: ERC, 1991), vol. 2, no. 64.

<sup>7</sup> Bābu-aha-iddina is *sukkalmahhu* during the five last years of Adad-nirāri I, the reign of Shalmaneser I, and the first five years of Tukulti-Ninurta I—in all approximately forty years. O. Pedersén, "Gräber und Archive in mesopotamischen Wohnhäusern—besonders Gruft 45 in Assur und Archiv des Babu-aha-iddina," in *Von Uruk nach Tuttul: Eine Festschrift für Eva Strommenger, Studien und Aufsätze von Kollegen und Freunden*, ed. B. Hrouda, S. Kroll, and P. Z. Spanes, *Münchener vorderasiatische Studien* 12 (München: Profil Verlag, 1992), 163–69. H. Freydank and C. Saporetti, *Bābu-aḥa-iddina: Die Texte* (Roma: Roberto Denicola Editore, 1989).

<sup>8</sup> See for example *KAV 98, 20*. These inventory tablets are preserved inside the chests.

<sup>9</sup> C. Saporetti, "Annotazioni su alcuni personaggi assiri," *EVO* 3 (1980): 175–89, esp. pp. 184–85.

<sup>10</sup> O. Pedersén, *Archives and Libraries in the City of Assur*, 2 vol. (Uppsala: Acta Universitatis Upsaliensis, 1985–86), 1: 106–10.

<sup>11</sup> Mušallim-Aššur and Nabium-bēl-damiq are the *qēpu*; in *KAV 109*, they are joined by Innanmar-dēn-ili. The *kāširum* Adad-tura is mentioned in both cases; in *KAV 99*, he is also joined by an Ešar-dēn-Nusku. For *KAV 99*, see W. Röllig, "Notizen zur Praxis der Sieglung in mittellassyrischer Zeit," *WO* 11 (1990): 111–16.

<sup>12</sup> E. Weidner, "Der Kanzler Salmanassars I," *Afo* 19 (1959–60): 33–39; the copy of the text is on plate VI. This plate is also edited by Freydank and Saporetti, *Bābu-aḥa-iddina, KAV 99*, pp. 10–11 and 52.

fers to damaged textiles that must be checked and names the same correspondents as *KAV* 99.<sup>13</sup>

## TERMINOLOGY

The clothes moth is the common name of several genera of the family *Tineidae*, which belong to the order of Lepidoptera. The best known moth is *Tineola bisselliella*, a smallish white butterfly. It exists over the entire world and, to evade the cold, stays year-round indoors.<sup>14</sup> The moth's yellowish-white larvae feed on wool and furs, leaving holes that betray its presence. These larvae also eat objects made of skins, horns, or horsehair. The moth breeds quickly, laying about two hundred eggs every three months. The eggs hatch in fifteen days and larvae have three months to do their damage before turning into moths.

Beyond its occurrence in the letters cited in this article, the word for moth occurs in lexical lists and omens: Akkadian *sāsum* (UR.ME) seems specifically to mean "moth." *Kalmatum* seems to indicate the more generic "parasite." Thus, the "garment parasite" or *kalmat šubāti* occurs only in lexical texts.<sup>15</sup> In the *šumma ālu* omen series there is a section devoted to various insects and their presence seems to be uniformly auspicious. In section 36, which opens, "If a moth is seen in man's house," two paragraphs treat the sighting of UR.ME and of *sāsum*, thus making a distinction between the two terms.<sup>16</sup> The UR.ME is said to fly into houses, moving from the top to the bottom of walls.<sup>17</sup> The *sāsum*, however, is said to be found in human garments.<sup>18</sup> This is why W. Heim-

pel rightly proposed to identify the insect UR.ME with the adult moth and the *sāsum* with its larva.<sup>19</sup>

Moths are not always mentioned explicitly in the private correspondence of OA merchants from Kaniš and never in the archives of Bābu-aha-iddina. But when cited in the OA tablets, the word used is *sāsum*, establishing that the Old Assyrians had identified the cause of the damage: *sā-sā-am* (TPAK 1, 58, 5; CTMMA 1 77, 8, 25), *sā-sā-am* (TTC 14, 39); *sā-sū-um* (Kt 93/k 542, 35). *Sāsum* is used as a collective singular, always the subject of the verb.

## MOTH DAMAGE

Two verbs are connected with moth attacks. The first, *akālum*, "to eat, devour," corresponds to the moth's biological function; but it is mostly used in literary documents. In the OA correspondence, *akālum* is linked only once to the moth. It occurs in a copy of a letter presumably written just as Aššur-taklāku came out of prison. Couched as a lament and written in a vivid style meant to move the addressee, the letter narrates the losses Aššur-taklāku incurred during his incarceration, among which was the ruin of a huge quantity of garments: "In my house, the moth devoured two hundred textiles and I suffered (many) losses in silver, up to five minas worth!"<sup>20</sup>

The simile that a moth devouring the garment is like a vermin (*kalmatum* rather than *sāsum*) attacking the human body occurs in the Gilgameš Epic, when Enkidu's ghost meets Gilgameš.<sup>21</sup> A parallel theme is also very frequent in the Bible, especially in Isaiah, for example at 50:9: "Behold, all of them will wear out like a garment; the moth will eat them up" (RSV). Curiously

<sup>13</sup> Freydank and Saporetti, *Bābu-aha-iddina*, KAV 99, pp. 31–32 and 70–71.

<sup>14</sup> W. Dierl and W. Ring, *Guide des insectes* (Paris: Delachaux et Niestlé, 1992), 152, and A. S. Balachowski, ed., *Entomologie appliquée à l'agriculture* (Paris: Masson, 1966), 60–61. French *mite* is distinct from English "mite," which corresponds to French *acarier*.

<sup>15</sup> B. Landsberger, *Die Fauna des Alten Mesopotamien nach der 14-Tafel der Serie Ḥar-ra-ḥubullu* (Leipzig: S. Hirzel, 1934), 134, and also Å. W. Sjöberg, "The Ebla List of Animals," *MEE* 4, no. 116, *WO* 27 (1996): 9–24. According to Sjöberg, some of the names cited at Ebla, among them *sāsu*, also occur in the Early Dynastic animal list B.

<sup>16</sup> S. Moren, *The Omen Series "Šumma ālu": A Preliminary Investigation* (Ann Arbor: University Microfilms, 1978), 173.

<sup>17</sup> BRM 4, 21, 5: *šumma* UR.ME *ina* É LÚ *ištu* IZ.ZI.MEŠ *a-na* KI.TA-*nu* *urraduni*, "if an UR.ME-moth in a man's house comes down from the walls to the bottom."

<sup>18</sup> BRM 4 21, 4': [*šumma sāsum* TÚ]G SÍG LÚ *ikul*, or *ibid.* 7': [*šumma sāsum*] *lubušta ša* MÍ *ikul* SIG<sub>5</sub> *šumma* MIN MIN

*arhišam* U<sub>4</sub> 1 KAM ITI MU U<sub>4</sub> 1 KAM *ikul* SIG<sub>5</sub>: "[If a moth] eats a woolen [gar]ment of a man . . . ; [if a moth] eats a woman's garment: it is favorable; if *ditto* (a moth) eats *ditto* (a woman's garment) the first day of each month, each month of the year, the first day: it is favorable."

<sup>19</sup> W. Heimpel, "Insekten," *RIA* 5 (1976–80), 187a. Mesopotamia had a distinct nomenclature for insects at different stages of their life cycle. At Mari, there are two different words for the locust, *erbum* being the generic term, while *šaršar* may correspond more specifically to the larva or to the young locust; see B. Lion et C. Michel, "Criquets et autres insectes à Mari," *MARI* 8 (1997): 707–24.

<sup>20</sup> Kt 93/k 542, 34–37: *i-na*, É<sup>bé-ti</sup>-*a* 2 *me-at* TÚG<sup>hi-a</sup> *sā-sū-um*, *e-ku-ul-ma* KÙ.BABBAR 5 *ma-na* *bi-it-qá-tim* *a-mu-ur*.

<sup>21</sup> Gilgameš XII 94 [*kima lub*]āri *labiri kalmatu* *ikkal*, "like an old garment, a vermin devours it."

enough, in non-literary documents the verb *lapātum* “to touch” is preferred over *akālum*. *Lapātum* is usually attested in the stative, with textiles as its subject. Thus two OA tablets give the expression TÚG<sup>hi.a</sup> *sāsam lapitū*, “the textiles are infested with moth.”<sup>22</sup> In the same archives, *lapātum* serves also to describe damage to grain: *uṣṣutum . . . kalmatam laptat*, “grain has been damaged by vermin.”<sup>23</sup>

*Lapātum*, without reference to the insect involved, occurs also in Bābu-aha-iddina’s archives. After inspecting garments in a chest, officials report that some of them were “attacked” (*lapittu*).<sup>24</sup>

#### CONDITIONS FOR MOTH PROLIFERATION

In OA and MA documentation, textiles are said to be kept tightly packed for long periods in sealed chests or in bales, thus giving moths ample opportunity. This problem was rampant in antiquity, as noted by Aristotle: “. . . other tiny animals are engendered, some in wool and woolen articles, such as the clothes moth: these occur more abundantly if the woolen things are dusty . . .”<sup>25</sup>

The textiles sent from Aššur to Kaniš were commonly packed five pieces each in individual cloth bundles or in bags.<sup>26</sup> Unopened during their shipment to Kaniš,

which might last six weeks, they were frequently stored there for an undetermined period. In a letter addressed to Šū-Kūbum, Elālī and Aššur-taklāku explain to their correspondent: “Among the ninety-three *kutānum*-textiles, there are eighteen *kutānum*-textiles that are old over there and that are stored along with moths. . . .”<sup>27</sup> Because the stocks of textiles could be quite large (more than two hundred pieces are cited in *TC* 2, 28), infestation had a good chance of spreading. Textiles could also be contaminated before their arrival in Anatolia, as suggested by another OA text: “The previous textiles—yours and mine—that I left with Elamma, are still available. Those (arriving) later are infested by moths.”<sup>28</sup> Finally, merchants had to be careful in wrapping their textiles, for during the long trip from Aššur to Anatolia danger threatened not just them and their donkeys, but also their goods as they made stops at places potentially infested with moths.

To inspect for moths, textiles were examined for tiny holes or for larva droppings. Two verbs are at issue, one of which is *barūm*. In the OA dialect, this verb is normally used for checking seals and tablets.<sup>29</sup> In the letter Ilī-aLUM sent to Aššur-nādā, however, *barūm* refers to taking inventory of textiles registered on a tablet as well as to inspecting their condition: “As for you, while you go to Burušhattum and sell our copper, in my case, I will examine here your textiles!”<sup>30</sup> While this rendering of the last clause remains uncertain, it is nevertheless likely because the remaining lines of the tablet mention moth infestation.

More specifically used for verifying the condition of textiles, in both OA and MA texts, is the verb *ašārum*. Rumors of important losses to moths can spread from Kaniš to Aššur. In *CTMMA* 1, 77, two brothers blame four merchants for their negligence regarding textiles under their trust. “We have heard that the textiles were moth infested! Why did you not examine the textiles, and why has your report (about it) not come here? If Imdilum really had told you not to unpack (the bales of textiles), you should know that until this day you have

<sup>22</sup> *TTC* 14, 39 and *CTMMA* 1 77, 8.

<sup>23</sup> See the letter CCT 2, 30, 27–30 sent to Puzur-Aššur by Buzāzu. In cuneiform documentation, the verb *lapātum* is used with all kinds of vermin, such as the wood-worms; see the omens YOS 10 42, iii 35, 39 and r. 28 which mention the *ḥalum* and the *buššitum* insects. Under all circumstances, this verb must be translated as “infested by.” OA *lapātum* is used also in more commercial terminology. Thus, OA merchants use this verb to characterize the trade in textiles when goods in Aššur become scarce, probably drawing on the vocabulary of daily life; see *TC* 1, 11, 9–18 studied by K. R. Veenhof, *AOATT* 98, 384, and 377. See also K. R. Veenhof, “‘Dying Tablets’ and ‘Hungry Silver’ Elements of Figurative Language in Akkadian Commercial Terminology,” in *Figurative Language in the Ancient Near East*, ed. M. Mindlin, M. J. Geller, and J. E. Wansbrough (London: SOAS, 1987), 41–75, and J.-M. Durand and C. Michel, “*adāmum/edēmum* = ‘être occupé à,’” *NABU* 1991, no. 91.

<sup>24</sup> Tablet published by E. Weidner, “Der Kanzler Salmanasars I,” pl. VI, 4’. *Lapātum*, similarly used, is found in a damaged letter (*KAV* 195 + 203, 20–21) Bābu-aha-iddina addresses to the same correspondents as the above-cited *KAV* 99. In it he states: “If there are some infested clothes . . .” (*šum-ma lu-[bu-ul]-tu la-pi-ta, i-ba-āš-ši*).

<sup>25</sup> Aristotle, *Historia Animalium*, ed. A. L. Peck (Cambridge, Mass.: Harvard Univ. Press, 1970), 557b 1f. (bk. 5, ch. 32).

<sup>26</sup> K. R. Veenhof, *AOATT*, 44.

<sup>27</sup> *TPAK* 1 58, 3–6: *i-na* 93 TÚG [ku]-ta-nu, 18 TÚG ku-ta-nu ša a-ma-kam-/ma, lá-bi<sub>4</sub>-ru-ni ú sá-sá-am, ša-áp-ku-ma.

<sup>28</sup> *TTC* 14, 36–39: TÚG<sup>hi.a</sup> a-pá-ni-ú-tum lu ku-wa-ú-tum, lu ia-ú-tum, ša a-na E-lá-ma e-zi-bu a-dí-ni i-(ba-ši)-ú, wa-ar-ki-ú-tum: sà-sà-am lá-áp-tù.

<sup>29</sup> *BIN* 4, 42 or *KUG* 33, 22, to inspect some tablets; *TC* 2, 74, 7 (= *EL* II 315), according to K. Hecker (*GKT*, 152, n. 1), to check on some seals.

<sup>30</sup> *TTC* 14, 12–15: šu-ma a-ta-ma : a-na Bu-ru-uš-ḥa-tim, ḥa-ra-kà-ma URUDU<sup>1</sup>-ni a-na, KÙ.BABBAR tù-ta-ar ù a-na-ku, a-na-kam TÚG<sup>hi</sup>-kà lu-ba-ri.

come together, Imdilum was gone to Burušhattum!<sup>31</sup> The point being that the excuse given, namely that Imdilum did not allow the opening of bales now infested, cannot be sustained, since after Imdilum left Kaniš, no one took care of the textiles.

In MA tablets *ašārum* is more specifically attached to fabric damage. Thus, in a report stating that the orders previously (in *KAV* 99) given by Bābu-aha-iddina had been executed, we learn that two stewards were inspecting textiles in their lords' house: "To Kidin-Gula and Aššur-zuquppani (who retain) the [seal] (of Bābu-aha-iddina). (The infested garments) were delivered for inspection. They must not take them out from the house of their masters, but must inspect them in the house of their masters."<sup>32</sup> Moreover, the orders Bābu-aha-iddina sent to his assistants concern not only the inspection of the garments stored in the royal chests, but also the mending of any ruined item. *KAV* 195 + *KAV* 203 are joined fragments that address two stewards, Kidin-Gula and Aššur-zuquppani, and two other assistants, Ma<sup>2</sup>nāyu and Aššur-bela-šalim, as well as three trustworthy intermediaries. They are all instructed to examine the garments and "if there are some infested garments (among them), entrust them to an artisan so that he patch (them)."<sup>33</sup>

In addition to *lapātum* / *laptum* (see above), the OA tablets also use *labārum* / *labirum* to cite damage done to fabrics. Aging material is often mentioned in the Mesopotamian documentation, but only context determines whether the damage was biological. Thus, a Middle Babylonian letter mentions side-by-side one talent of old wool and one talent of new,<sup>34</sup> and the same quotation occurs for textiles in an MA tablet.<sup>35</sup> Nevertheless, in the above-cited letter sent to Šū-Kūbum (see n. 27),

the same root obviously is alluding to larvae holes. Moreover, "old" garments that are touched by vermin are mentioned in the Gilgameš and (in Hebrew phraseology) Isaiah passages cited above.

#### PREVENTION

A major purpose of the letters of Bābu-aha-iddina is his request that the fabric kept in containers be ventilated. He asks his correspondents to "stand by together. Open the room with chests (and) proceed with airing (the textiles). Retrieve from the chests two woolen *ša šēri*-textiles, together with their *maklalum*, and one linen *nalbētum*-textile. One yellow-green felt embroidered textile is with the steward of the house. Return everything back (to its place), and seal (the chests) with your seals."<sup>36</sup> The wool, first target of the larvae, has to be treated with special care, and Bābu-aha-iddina adds to his instructions: "Air the red wool."<sup>37</sup>

During this operation, Bābu-aha-iddina's correspondents discovered some garments that were moth-eaten (*lapittu*). To prevent the spread of the insects, they promptly removed them from the batch and recorded their deed: "Mušallim-Aššur, Aššur-šallimanni, Ma<sup>2</sup>nāyu and Nabû-beludamiq, the trustworthy intermediaries, removed from the chests altogether 20[+ x] damaged garments during the airing operation; eponymy of Itabšidēn-Aššur."<sup>38</sup>

The OA archives clearly link this airing operation to moth damage. In *CTMMA* 1, 77, Šū-Labān and Aššur-imittī, hearing that textile bales were infested with moth, write to their correspondents: "You are our brothers! Air all the textiles that were brought, whether

<sup>31</sup> *CTMMA* 1, 77, 7–20: *ni-ša-me-ma, TÚG<sup>hi-a</sup> : sá-sá-am, lá-áp-tù mī-šu-um, TÚG<sup>hi-a</sup>: lá ta-šu-ra-ma, té-er-ta-ku-nu lá i-li-kam, ú šu-ma Im-dí-lúm, lá pá-řa-ra-am, iq-bi<sub>4</sub>-a-ku-nu-tí, i-dí : ki-ma a-dí, u<sub>4</sub>-mī-im a-nim, ta-pá-řu-ra-ni, Im-dí-lúm a-na, Bu-ru-uš-řa-řim], i-ta-lá-ak.*

<sup>32</sup> *AfO* 19 (1959/60): pl. VI, 14'–18': *a-na<sup>1</sup>BAR.<sup>d</sup>gu-la, [ù]<sup>1</sup>dA-šur-zu-qup-pa-ni ša [na<sup>4</sup>KIŠIB], a-na a-ša-ri ta-ad-na-ta<sup>1</sup>-šu-nu, iš-tu É EN.MEŠ-šu-nu, la-a ú-še-řu-ú, [i]-na É EN.MEŠ-šu-nu e-řu-ru-x.*

<sup>33</sup> *KAV* 195 + *KAV* 203, 20–22 *šum-ma lu-[bu-ul]-tu la-pi-ta, i-ba-ás-ři a-na LÚ KA.KÉŠ di-na, li-šur.*

<sup>34</sup> J. Aro and I. Bernhardt, "Mittelbabylonische Briefe in der Hilprecht-Sammlung," *WZJ* 8 (1958/59): 568, r. 21: 1 GÚ *eššē-tum u* 1 GÚ *labirātim hiř-ma*, "weigh out one talent of new and one talent of old (wool)."

<sup>35</sup> *KAJ* 256, 1–2:2 TÚG . . . , 1 GIBIL 1 *la-bi<sub>4</sub>-ru*, "(2 textiles) one new, one old."

<sup>36</sup> *KAV* 99, 12–21: *iš-tu a-řa-iš iz-zi-ta É<sup>giš</sup>um-ni-na-te, pi-ti-a<sup>giš</sup>um-ni-na-te, še-ři-a-ni nu-pu-ša na-pi-ša, 2 TÚG<sup>hi-a</sup> ša SÍG<sup>1</sup> ša ř[e]-e-ri, a-dí ma-ak-li-[l]i-řu-nu 1 TÚG<sup>hi-a</sup>, ša GADA na-al-be-ta-ša ŠĀ<sup>giš</sup>um-ni-na-te, še-li-a-ni 1 TÚG<sup>hi-a</sup> bi-ir-ša, er<sup>1</sup>-qa řa-ú-pa ša pi-ti ša UGU É, a-na mi-im-ma ta<sup>1</sup>-e-ra, ku-nu-[ki]-ku-nu ku-un-ka.* The TÚG *ša šēri* is sometimes translated by "textile of the steppe"; but the *CAD* M, 1: 137b proposes the rendering "textile for travel." See also *KAV* 109, 10–13: *iš-tu a-řa-iš iz-zi-za, É um-ni-na-te pi-ti-a, nu-pu-ša na-ap-pi-[ša], a-na ma-ás-ka-ni-šu ta-e-[ra]*, "Stand by together. Open the room with chests (and) proceed with airing (the textiles), then return (everything) to its place."

<sup>37</sup> *KAV* 99, 22: [SÍ]G *ři-ir-pa «i» na-ap-pi-ša.*

<sup>38</sup> *AfO* 19 (1959/60): pl. VI, 3'–12': *ŠU.NIGÍN 20[+ x] lu-bu-ul-tu, la-pi-it-tu, iš-tu<sup>giš</sup>um-ni-na-te, i-na nu-pu-ř[e]<sup>1</sup> ša li-me, <sup>1</sup>It-tab-ř[i-d]e-en-<sup>d</sup>a-šur, <sup>1</sup>Mu-šal-lim-<sup>d</sup>a-šur, <sup>1</sup>dA-šur-šal-lim-a-n[i], <sup>1</sup>Ma-a-na-ia-e, ù <sup>1</sup>dNĀ.EN.SIG<sub>5</sub> q[*e-pu-tu*], [u]l-te-li-ú-ni.*

belonging to Šū-Labān or to Aššur-imittī. Your report should arrive here (to tell us) if they are moth infested or not. Establish your needs for each day, and the textiles must be ventilated on our authority and in your presence. Then seal them with your seals.”<sup>39</sup>

In Bābu-aha-iddina’s two letters, the airing of wool and textiles occurs among other requests for the delivery of diverse products. It would therefore seem that the operation was neither systematic nor even periodic, but was executed upon specific order. Similarly, in *CTMMA* 1, 77, those in charge of the textiles of Šū-Labān and Aššur-imittī were to act upon specific orders and were to inspect only their textile bales, already stored for a long time. This operation entailed trustworthy workers, and the request to “establish daily needs” may correspond to their salary. We are not told how many workers per bale of textiles were needed for the process. However, another OA letter, *TC* 2:28, gives us some information: “Say to Innāya: speak Dannāya, Aššur-Samšī, Irnuīd, and Ṭāb-šilli-Aššur. You wrote me thus: ‘Ventilate the 213 good-quality textiles coming from Tudāya over which I hold rights and that are (now) in the house of Āl-ṭāb’s wife, Ištar-bāšti.’”<sup>40</sup>

Innāya’s correspondents obey and, after ventilating and inspecting the goods, report: “According to your instructions, [I, PN], son of Āl-ṭāb, [Enna(m)]-Aššur, son of Erra-idī, Ušur-ša-Aššur [and] Aššur-taklāku, we aired the textiles, and we bundled 160 of the textiles into parcels. According to your instructions, we left them in this same place. Atata, son of Šū-Kūbum, took [x] bags. Under his seal they are with Ištar-bāšti.”<sup>41</sup>

Even with the help of this document, it is difficult to establish the exact number of persons needed for such an operation because we do not know if the five merchants hired other workers. Nevertheless, it is clear

that the process required many people for, in addition to exposing textiles to open air, infested pieces were likely beaten to loosen the larvae from wool or fur, as was still done well into this century.<sup>42</sup> The relevant texts, however, are silent about the use of aromatic or odorous plants to discourage moth infestation or to scent the textiles. Such a practice, still in use today, is confirmed by several authors of classical antiquity. According to Theophrastus, some of these measures may have originated in the East: “. . . for instance, Media and Persia have, among many others, that which is called the ‘Median’ or ‘Persian apple’ (citron) . . . The ‘apple’ is not eaten, but it is very fragrant, as also is the leaf of the tree. And if the ‘apple’ is placed among clothes, it keeps them from being moth-eaten.”<sup>43</sup>

Other plants were also known to prevent moth attacks. According to Cato, the *amurca* repelled these insects: “To protect clothing from moths: Boil *amurca* down to one-half its volume and rub it over the bottom, the outside, the feet, and the corners of the chest. After it is dry, store the clothing and the moths will not attack it.”<sup>44</sup> Pliny the Elder proposed several natural ingredients to protect textiles from moths. Among these, he mentions the “everlasting” or chrysanthemum and the germander-polium.<sup>45</sup> At the beginning of this century, peppers were placed around woolen textiles or natural hair to prevent moth infestations. Later, naphthalene and moth-balls were

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The number of bags mentioned must amount to about thirty units since a *naruqqum* contains an average of five to six pieces; see K. R. Veenhof, *AOATT*, 39.

<sup>42</sup> *Larousse universel* (Paris: Larousse, 1922–23), 2: 267 B: “Pour préserver les fourrures des mites, il faut les battre régulièrement.”

<sup>43</sup> Theophrastus, *Peri phytōn aitiōn* (“Enquiry into Plants and Minor Works on Odours and Weather Signs,” ed. A. Hort [Cambridge, Mass.: Harvard Univ. Press, 1961]), bk. 4, §4, 2. See G. Roche-Bernard, *Costumes et textiles en Gaule romaine* (Paris: Édition Errance, 1993), 123, for first century B.C. to fifth century A.D. evidence.

V. Loret (*Journal asiatique* [1904]: 613–14) disputes Theophrastus’ lineage for the relevant tree. It may have been imported from India into Mesopotamia, perhaps in the Achaemenid period.

<sup>44</sup> Marcus Porcius Cato, *De agricultura* (“On Agriculture,” ed. W. D. Hooper and H. Boyd [Cambridge, Mass.: Harvard Univ. Press, 1935]), §98. According to Pliny, this plant only protects the wood from worms.

<sup>45</sup> Pliny, *Naturalis Historia* (“Natural History,” ed. W. H. S. Jones [Cambridge, Mass.: Harvard Univ. Press, 1938]), bk. 21, §§168–69: “Heliocrysus is called by some chrysanthemon. . . . It protects clothes by its smell, which however is not unpleasant.” In bk. 21, §44, this last plant is called *tiniara herba* or

<sup>39</sup> *CTMMA* 1:77, 20–32: *a-ḥu-ni, a-tū-nu lu ša, šu-lā-ba-an lu ša, A-šur-i-mi-ti : ma-lā, TÚG<sup>hi-a</sup> i-ra-dí-ú, na-pi-ša-ma sá-sá-am, lá-áp-tù : lá lá-áp-tù, té-er-ta-ku-nu : li-li-kam, u<sub>4</sub>-ma-kál : ḥu-ša-ḥa-ku-nu, i-dá-ma a-šu-mi-ni, TÚG<sup>hi-a</sup> : ma-aḥ-ri-ku-nu, lu na-pi-šu-ma : ú i-ku-nu-ki-ku-nu, ku-un-kā-šu-nu.*

<sup>40</sup> *TC* 2:28, 1–11: *[a-n]a I-na-a qí-bi<sub>4</sub>-ma, um-ma Da-na-a-a, [A]-šur-d<sup>šil</sup>UTU Ir-nu-id, ú DU<sub>10</sub>-ší-lá-a-šur-ma, ta-áš-pu-ra-am : um-ma, a-ta-ma 2 me-at 13 TÚG<sup>hi-a</sup>, SIG<sub>5</sub> : ša Tù-da-a, ša qá-tí : ša-ak-na-at-/ni, É Iš<sub>4</sub>-tár-ba-áš-tí, a-ša-at : A-al\*<sup>1</sup>-DU<sub>10</sub>, [i-b]a-ší-ú : na-pi-ša-šu-nu.*

<sup>41</sup> *TC* 2:28, 12–25: *[a-ma]-lá té-er-tí-ká, [a-na-ku NP] DUMU A-al-/DU<sub>10</sub>, [En-nam-a-šù]r DUMU E-ra-dí, [Ú-šù]-ur-ša-a-šur, [ú A]-šur-ta-ak-lá-ku, TÚG<sup>hi-a</sup> : nu-na-pi-iš-ma, 1 me-at 60 TÚG<sup>hi-a</sup>, ni-id-ru-uk-šu-nu-ma, a-ma-lá té-er-tí-ká, [áš]-ra-kam\*-ma : né-zí-ib-šu-nu, [x] na-ru-qá-tim A-ta-ta, [DU]MU Šu-ku-bi<sub>4</sub>-im : iš-ba-at, [a]-šar Iš<sub>4</sub>-tár-ba-áš-tí, [ku-nu]-ku-šù : i-ba-ší-ú.*

used for the same end. Cedarwood in wardrobes seems to have produced the same results. The one OA tablet that could have told us about such prophylactics is unfortunately partly broken: Šū-Labān and Aššur-imitti ask their correspondents to acquire a product for 3<sup>1</sup>/<sub>2</sub> shekels of silver, the as yet enigmatic, *šū<sup>2</sup>-ri-im : ṭá-áb-tí*.<sup>46</sup>

#### LOSSES AND REUSE OF INFESTED TEXTILES

From OA tablets it is clear that losses due to moths were considerable.<sup>47</sup> A few OA letters permit an appraisal of losses incurred. In their message sent to Šū-Kūbum, Elālī and Aššur-taklāku reveal that eighteen of ninety-three *kutānum*-textiles were infested (*TPAK* 1 58, 3–7). This loss corresponds to one-fifth of the total, leaving, after deduction as taxes, only two-thirds of the textiles for trade: “The remainder of your textiles, seventy-five pieces, are now in Zalpa. From them, we set aside three *kutānum*-textiles from Uštala. We deducted twelve textiles (to pay) either as tithe, or as import-tax. Thus there are now sixty *kutānum*-textiles available for trade in Zalpa.”<sup>48</sup>

In another text, Aššur-taklāku complains that during his stay in jail about two hundred pieces from his stock were infested by larvae. He assesses the losses at five minas of silver (*Kt* 93/k 542). If the stock was a complete loss, each piece would have been worth one and a half shekels, a very low figure in the Anatolian markets.<sup>49</sup> Either Aššur-taklāku undervalued his losses, or he managed to recover segments not affected by the

larvae. Since the first possibility does not agree with the behavior of other merchants, we should seriously consider the other. In fact, the private archives from Kaniš and the texts belonging to Bābu-aha-iddina both document reuse of damaged textiles. What could no longer be traded was allocated to servants as their salary, once the infested segments were cut out: “We used eighteen *kutānum*-textiles, which when stored with moth became tattered (old) over there, to outfit servants as their working-capital.”<sup>50</sup>

Two MA fragments that can be joined (*KAV* 195 + 203) preserve the following statements: “If there are some damaged cloths, hand them to a worker and let him inspect them. The damaged cloth *ša šadādi* from the worker, receive for inspection [. . .] and set back for [. . .].”<sup>51</sup> In their edition of Bābu-aha-iddina archives, Freydanck and Saporetti do not translate the expression *ša šadādi*.<sup>52</sup> *CAD* (Š, 1: 32–33) offers two different meanings for this word: “a processional carriage” or “a textile.” In only one OA list is *ša šadādi* mentioned among other textiles (*KTP* 37, 19). The *CAD* treats all other citations for the phrase, including the one in our text, as referring to a processional wagon. Since in the *KAV* 195 + 203 context *ša šadādi* seems most likely to refer to textiles, it is best to associate the phrase with carpets specially made for wagons used to haul persons. In a letter sent to her husband Pūšu-kēn, Lamassī explains that she had to make some garments for her children and servants and also some textiles for the wagon, probably to soften the effects of travel: “As the little girl grew up, I had to make a couple of heavy cloth for the wagon. . . .”<sup>53</sup>

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*tiniaca herba*, thus using *tinea*, the Latin term for the moth. Pliny also cites the “Saliunca,” the “Celtic Nard,” and “Vale-riana Celtica” as plants that impart a pleasant odor to stored garments (bk 21, §43).

<sup>46</sup> The first word could be read *kirrim* and would then refer to a standardized container, usually of beer. The problem with the second word, normally meaning salt, is that today it is not considered a specific against moths. OA merchants may, of course, have thought otherwise.

<sup>47</sup> The New Testament compares moths to thieves: “Sell your possessions, and give alms; provide yourselves with purses that do not grow old, with a treasure in the heavens that does not fail, where no thief approaches and no moth destroys.” (Luke 12:33, RSV).

<sup>48</sup> *TPAK* 1 58, 8–14: *šī-tí šū-ba-tí-kà 75 TÚG<sup>hi-a</sup> i-Za<sup>1</sup>-al-pá i-ba-šī-ú, ŠĀ.BA 3 ku-ta-nu ša Uš-ta-lá, ú-ša-ri-«nu<sup>2</sup>»-hu<sup>1</sup> 12 TÚG<sup>hi-a</sup>, lu 10<sup>ra-tam</sup>4 : lu ni-is-ḥa-tam<sup>4</sup>, nu-ša<sup>1</sup>-ḥe-er-ma 60 ku-ta-n[u], i-Za-al-pá iz-ku-nim.*

<sup>49</sup> P. Garelli, *Les Assyriens en Cappadoce*, Bibliothèque archéologique et historique de l’Institut français d’archéologie d’Istanbul 19 (Paris: Adrien Maisonneuve, 1963), 284–94 and K. R. Veenhof, *AOAT*, 82–85.

Moth infestation was endemic in antiquity and people were imaginative in trying to minimize its damage and to salvage as much as possible. Though separated by half a millennium, OA merchants from Kaniš and MA bureaucrats used the same techniques because they were both managing large quantity of goods. While the available evidence for how they dealt with the problem is poor, especially when compared to classical sources, we can hope that the publication of new cuneiform documents will tell us more about this subject.

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<sup>50</sup> *TPAK* 1 58, 4–7: 18 TÚG *ku-ta-nu ša a-ma-kam-/ma, lá-bi<sub>4</sub>-ru-ni ú sá-sá-am, ša-áp-ku-ma bu-lá-tí-šū-nu, šū-ha-ri nu-lá-bi<sub>4</sub>-iš*

<sup>51</sup> Lines 20–26: *šum-ma lu-[bu-ul]-tu la-pi-ta, i-ba-áš-ši a-na LÚ KA.KÉŠ di-na, li-šur lu-bu-ul-ta la-pi-ta, ša ša-da-di-ša LÚ KA.KÉŠ a-na a-ša-ri [. . .], mu-uḥ-ra-a-[na . . .], ta-e-ra.* See the parallel texts *KAV* 99 and *AfO* 19 (1959/60): pl. VI, r16.

<sup>52</sup> *Bābu-aha-iddina*, 31.

<sup>53</sup> *CCT* 3, 20, 17–20: *šū-ḥa-ar-t[um], i-ir-ta-bi-ú-ni TÚG iš-té-én ú šī-na, kà-ab-tù-tim a-na na-ar-kà-ab-tim, e-ta-pá-áš. . . .*