Eye diseases in the Ebers Papyrus

Part 2: Eb 358–386

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1 Introduction

The Ebers Papyrus is an important medical papyrus from a West Theban necropolis (el-Assasif) from the period of the 17th to early 18th dynasty. The papyrus, written in hieratic script, contains 877 individual texts consisting of medical prescriptions, teaching texts and magic spells for a variety of medical problems. The so-called "Eye Book" (Eb 336–431) contains 96 prescriptions for the treatment of various eye diseases and eye injuries.[1]

After writing about the eye diseases in Eb 336–357 in Part 1 of this work, this is to continue with the prescriptions Eb 358–386. The disease names were translated[2] and subjected to a modern ophthalmological interpretation. Frequent diagnoses were preferred over rare ones, and the environmental and living conditions in Ancient Egypt were taken into account. Since some eye diseases and symptoms appear twice or several times in the Eye Book, occasional repetitions were unavoidable. Many prescriptions are simply titled "Something else" without specifying the condition being treated. I interpret

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[1] More information about the papyrus can be found in L. Popko (online), metadata, <https://sae.saw-leipzig.de/de/documents/papyrus-ebers>, with literature overview (last accessed 08.12.2023).

[2] Dictionaries used:

- A. Erman and H. Grapow, *Wörterbuch der ägyptischen Sprache*, Vol. I–VII, (Berlin, 1897–1961; unchanged reprint; Berlin, 1971), subsequently referred to as "Wb" for short;
- R. Hannig, *Die Sprache der Pharaonen: Großes Handwörterbuch Ägyptisch – Deutsch, Marburger Edition* (KAW 64; 4th revised edn; Mainz, 2006), subsequently referred to as "Hannig" for short.

Other translations used on a case-by-case basis:

- B. Ebbell, *Alt-ägyptische Bezeichnungen für Krankheiten und Symptome* (Oslo, 1938), subsequently referred to as "Ebbell" for short.
- B. Ebbell, "Die ägyptischen Krankheitsnamen", *ZÄS* 59 (1924), 55–59, subsequently referred to as "Ebbell, *ZÄS*" for short.
- B. Lalanne and G. Métra, *Le texte médical du Papyrus Ebers: Transcription hiéroglyphique, translittération, traduction, glossaire et index* (Langues et cultures anciennes 28; Brussels, 2017), subsequently referred to as "Lalanne and Métra" for short.
- L. Popko, "Papyrus Ebers: Übersetzung und Kommentar", in *Science in Ancient Egypt* (Leipzig, online) <https://sae.saw-leipzig.de/de/documents/papyrus-ebers> (last accessed 08.12.2023), subsequently referred to as "Popko (online)" for short.
- W. Westendorf, "Handbuch der Altägyptischen Medizin", Vols 1 and 2, in H. Altenmüller et al. (eds), *Handbuch der Orientalistik, Erste Abteilung: Der Nahe und Mittlere Osten* (Boston, Cologne and Leiden, 1999), subsequently referred to as "Westendorf" for short.

them as alternative treatments for the last-mentioned condition. All statements must be viewed as hypotheses.

2 Eye diseases (Eb 358–386)

As in Part 1 of this work, the text occasionally refers to images in the online "Atlas of Ophthalmology" (https://www.atlasophthalmology.net).[3]

Eb 358 (58,2–3)

This prescription is headed "Something else" without specifying an illness. It is probably intended to be an alternative treatment for šp.t m ir.tj (blindness in both eyes) which is the subject of the previous prescription Eb 357 (57,21–58,2).[4]

Eb 359 (58,3–6)

Text:	
Transcription:	k.t n(j).t srwḫ mꜣꜣ m jr.tj
Translation:	Something else for improvement of the eyesight in both eyes

The verb srwḫ means "to treat medically".[5] One can translate it a little more loosely as "to improve/improvement", because this is the treatment goal. Eyesight that needs improvement can, in the most harmless case, be a (non-pathological) refractive anomaly, but of course it can also be a symptom of a serious eye disease. A more precise classification is not possible. However, here it seems to be a somewhat milder suffering

[3] Such references consist of the abbreviation "AoO" and an image number. To access an image on the website <https://www.atlasophthalmology.net>, please select the "Search" function in the green menu bar, enter the image number in the search field that opens ("Search phrase") and click the "Search" button.

[4] E. Traunmüller, *Eye diseases in the Ebers Papyrus, Part 1: Eb 336–357* (Vienna, 2023), <https://www.egyptological-hypotheses.org>, 17.

[5] Hannig, 788 (28969, 28973); Wb IV, 193.13–15, 194.1–3.

than in Eb 342 (56,17–19),[6] because there, the text is about “opening” of the eyesight which indicates a more advanced loss of vision.

Eb 360 (58,6–15)

Text:	
Transcription:	k.t n(j).t dr s.ḥḏ.w m jr.tj
Translation:	Something else to eliminate corneal scars from both eyes

The symptom of s.ḥḏ.w (the “whitened ones”) refers to scars of the cornea that appear as white areas. They were already identified in Eb 347 (57,5–6) as an irreversible sequela of trauma, alkali burn (AoO 6229) or chronic inflammation (AoO 653).[7]
The prescription consists almost entirely of a grave spell to be recited over a turtle's gallbladder mashed with honey. It is assumed that doctors knew this spell, because after a few sentences it ends with the phrase “[to be continued] according to the ability of the mouth” (ḥm.wt rꜥ). This phrase means something like “and so on”. The spell implies that the ailment being treated was caused by dead people of both sexes (mwt mwt.t; kind of revenants?). Therefore, one can speculate that this prescription is not about corneal scars caused by trauma or chemical burn, but rather scars after chronic inflammation, the cause of which the ancient Egyptians could not explain other than by malevolent spirits of the dead.

Eb 361 (58,15–17)

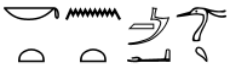
Text:	
Transcription:	k.t n(j).t dr tꜣ.w m jr.tj
Translation:	Something else to remove the heat from both eyes

[6] E. Traunmüller, *Eye diseases, Part 1,* 7–8.
[7] E. Traunmüller, *Eye diseases, Part 1,* 10.

We have already encountered ꜣ.w ("heat") in Eb 351 (57,11–12). There the problem was even a "concentration of heat" (swš n[j] ꜣ.w m jr.tj).[8] I interpret the suffering as burning sensation in the eyes, since the "burning" pain (also on the skin) is described in many languages with words related to fire and heat to this day. A burning sensation in the eyes is the typical symptom of corneal epithelial defects caused by physical influences (sand, dirt, ultraviolet sun light [AoO 6791]), reduced tear production (*Keratoconjunctivitis sicca*; AoO 7260) or advanced vitamin A deficiency.

The following prescription, Eb 362 (58,17–20), is simply titled "Something else". It should be interpreted as an alternative treatment "for the temple", as described in the next prescription, Eb 363. The remedy (bone marrow of the lower jaw bone of a donkey mashed in cold water) is similar to the remedies prescribed in Eb 363 and Eb 364 and must equally be applied onto the patient's temple.

Eb 363 (58,20–21)

Text:	
Transcription:	K.t n(j).t mꜣꜥ
Translation:	Something else for the temple

The medical indication for this prescription appears to be pain in the temporal region. Temporal headaches in the course of migraine, trigeminal neuralgia (severe nerve pain in the hemilateral innervation area of the sensitive fibers of the trigeminal nerve, and temporal arteritis (Horton's disease) come into question.[9] The latter is a chronic inflammation of the arteries of unknown cause which predominantly affects the aorta, the carotide arteries and their extracranial branches and leads to local circulatory impairment. This disease manifests itself in severe headaches (frequently in in the temporal region), visual disturbances up to blindness (AoO 356), weakness of the chewing muscles (at the beginning usually hemilaterally) and general symptoms such as

[8] E. Traunmüller, *Eye diseases, Part 1*, 12–13, 14.

[9] Other authors did not make any assumptions about what kind of suffering it was (Lalanne and Métra, 121; Popko [online], Eb 363; Westendorf, 614). In my comments on Eb 356 (57,17–21), I have already discussed temporal arteritis as the possible underlying cause of blindness (šp.t), since the magic spell included in this prescription averts „raging suffering" (E. Traunmüller, *Eye diseases, Part 1*, 16–17).

fever and fatigue. The impairment of vision in temporal arteritis or a severe migraine attack would also explain why the prescription "for the temple" is included in the Eye Book. However, the prescription stipulates that the remedy with a declared immediate effect – it consists simply of celery chopped up in cold water – should be applied onto the patient's temple.[10] So, relieving local pain is obviously a priority.

The following prescription Eb 364 (58,21–22) is entitled "Something else" and is to be understood as an alternative prescription "for the temple", as the remedy (this time a donkey tooth pounded in cold water) too should be given onto the patient's temple "so that he will recover immediately".

Eb 365 (59,1–2)

Text:	
Transcription:	k.t n(j).t dr ꜣd.t m jr.t
Translation:	Something else to eliminate decay from the eye

In my opinion, the word ꜣd.t (or sometimes ꜣdy.t) determined with the hieroglyph Aa2 (pustule? round packet of mummy bandages?) is derived from the verb ꜣd that means "to decay, to putrefy".[11] It must not be mixed up with the verb ꜣd determined with hieroglyph I3 (the crocodile) that means "to rage, to be angry, to be aggressive", and a similarly written verb ꜣd related to pottery.[12]

B. Ebbell suspected in ꜣdy.t a *pterygium* (a triangular, conjunctival proliferation extending from the inner corner of the eye to the cornea) and presented it as a kind of malignant disease.[13] However, it is benign. At its worst, a particularly large *pterygium* can limit vision on the affected side, cause a foreign body sensation, or slightly impede the motility of the eyeball (AoO 9602). Otherwise it is more of a cosmetic problem. Likewise, I cannot agree

[10] When the patient to be treated is mentioned in the Ebers Papyrus, it is always in the masculine form, for instance in Eb 363 (58,21): rd(.w) n(j) zj r mꜥ=f ("[it] should be given the man onto his temple"). However, one can assume that women were treated equally and that men and women were summarized under the male form.

[11] Hannig, 18 (601); Wb I, 24.24.

[12] Hannig, 18 (585, 591, 602); Wb I, 24.15, 25.1.

[13] Ebbell, 6. As an explanation, Ebbell stated that in Eb 412 (62,14–15), the remedy had to be placed in the corner of the eyes. In fact, in 2 out of 13 medical prescriptions against ꜣd.t/ꜣd.y.t, the remedy should be given in the corner of the eyes (Eb 412 and Eb 413, where the instruction is "mjt.t" ["the same"]).

with M. Vogel's opinion who suggested that ꜣd.t was acute glaucoma.[14] All of this is impossible to reconcile with the description of "decay in the eye". Both Ebbell and Vogel apparently did not pay attention to the determinative (versus).[15]

To me, ꜣd.t/ꜣdy.t is clearly progressive destruction in one eye, such as for instance a progressive bacterial infection with purulent tissue necrosis (dead tissue; AoO 7807), or an invasive malignant tumor[16] (AoO 6228). Both diseases can give forth a stench of putrefaction in their advanced stages, especially if anaerobic bacteria are involved in the process.

Eb 366 (59,2–3)

Text:	
Transcription:	k.t n(j).t dr tꜣ.w
Translation:	Something else to eliminate the heat

Although the location of the "heat" was not explicitly stated in this prescription, it is likely that the burning sensation in the eyes due to corneal epithelial defects is meant (see above in Eb 361, page 4).

Eb 367 (59,3–6)

Text:	
Transcription:	k.t n(j).t dr ḫnt m jr.tj
Translation:	Something else to eliminate secretion from both eyes

[14] Martin Vogel is the deceased former head of the University Clinic for Ophthalmology in Göttingen (Germany). See Westendorf, 614, note 100.

[15] Neither did Popko and Westendorf who translated ꜣd.t m jr.t as „raging in the eye" (Popko [online], Eb 365; Westendorf, 614). To be fair, it must be admitted that the eye disease was sometimes (erroneously?) written with I3, the crocodile (Hannig, 18 [606]; Wb I, 24.25) or the two spellings represent different eye diseases (but see Eb 369 on page 9). Translations by other authors: eye disease (Hannig, 18 [606]; Wb I, 24.25); proliferation of the conjunctiva or cornea (Hannig, 18 [606]); ꜣd.t formation (Lalanne and Métra, 122).

[16] E.g. squamous cell carcinoma, basal cell carcinoma or melanoma on the eyelid or conjunctiva.

The word ḫnt (also ḫnt.j [17]) in its spelling with the hieroglyphs W17 (water jugs in a rack) and D19 (face in profile) is most likely derived from the preposition ḫnt ("anterior, in front of, in the forefront of").[18] Literally, ḫn.t is therefore "the anterior" (neuter). Traditionally, ḫnt is interpreted as common cold,[19] for which a description as "the anterior" does not seem inappropriate. However, the present prescription is specifically intended for eliminating ḫnt from both eyes. It could therefore be a remedy against secretion in the eyes as the symptom of conjunctivitis (bacterial [AoO 546], viral, or allergic).
In later parts of this work, I will discuss examples of ḫnt without specified source (Eb 391 [61,9–11]) and "ḫnt from the nose" (Eb 418 [63,2–3]). Therefore, ḫnt should be translated simply as "secretion".

Eb 368 (59,6–10)

Text:	
Transcription:	k.t n(j).t dr bjdj m jr.tj
Translation:	Something else to eliminate bjdj from both eyes

The bjdj disease is unclear.[20] Other words beginning with bjd, bjḏ, bᶜd, or bᶜḏ which could serve as etymological support are not listed in the dictionaries. The disease only appears once in the Eye Book of the Ebers Papyrus. Both eyes are affected. In the list of various eye disorders in the magic spell in Eb 385 (60,16–22; see page 15), bjdj is between ḥꜣr.w (a disorder of the eyesight that will be discussed later in more detail) and šp.t (blindness). This indicates that bjdj had something to do with the ability to see. However, it then seems to be a special visual impairment that differs from ḥꜣr.w and šp.t and also from the non-specific limitation of vision (as in wbꜣ mꜣꜣ/s.rwḏ mꜣꜣ/srwḫ mꜣꜣ). In any case, the bjdj disease

[17] Hannig, 654 [23811].
[18] The noun ḫnt meaning "forehead, face" is written identically (Hannig, 652 [23749]; Wb III, 302.1–4).
[19] Translations by previous authors: rhinitis/ḫnt rhinitis (Hannig, 654 [23811]; Popko [online], Eb 367; Westendorf, 615); catarrh (Westendorf, 615; Hannig, 654 [23811]); illness in the head (eyes, nose) (Wb III, 308.1); in Lalanne and Métra (p. 123), the word remained untranslated.
[20] Translations by other authors: eye disease/pathological condition of the eye (Hannig, 264–265 [9624], Wb I, 445.18); bjdj/bjdj disease (Lalanne and Métra, 123; Westendorf, 615); bjdj blindness (Popko [online], Eb 368).

does not appear to have been unusual, nor was it congenital. In Ptolemaic temple inscriptions, the following epithet is passed down for the goddess Sekhmet who was beseeched in the event of illness: [Sḫm.t] mꜣꜣ jr.t nb.t <r> tm ḫpr(.w) b(j)d(j) ("[Sakhmet], who every eye looks at, lest it gets bjdj"[21]).

To prepare the remedy, in addition to the almost omnipresent galena, one also needs poultry[22] fat and milk from a woman who has given birth to a boy. The mixture needs to desiccate for 9 days before it can be crushed and used along with myrrh to make up the patient's eyes. T. Pommerening suggested that the yellow fat and milk symbolized suppurative eye secretion, and the drying step during preparation of the remedy represented the treatment goal.[23]

Eb 369 (59,10–13)

Text:	
Transcription:	k.t n(j).t dr ꜥd.t m jr.t
Translation:	Something else to eliminate decay from the eye

This is another prescription for ꜥd.t ("decay, putrefaction"), and once again only one eye is affected. I have explained my hypotheses about the medical background of this condition in my comments on Eb 365 (page 6). Here, ꜥd.t is written with the hieroglyph I3 in addition to Aa2. Still, I believe the disease was primarily referred to as "the decay" rather than "the aggressive/raging." A severe infection and advanced invasive tumor (AoO 8558) are actually both, aggressive and associated with tissue breakdown.

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21 Own translation taking Sekhmet as the object of an imperfective relative form of the verb mꜣꜣ (it was also used in a religious context [Hannig, 332, 12018]), followed by the negative infinitive of the verb ḫpr (meaning here: "to get, to develop"). The epithet is interesting, because it would indicate that this goddess was asked not only to cure an existing illness, but also to be spared from an illness. If Sakhmet were the subject who looks at every eye, it would have to say mꜣꜣ.t, as in another epithet: [Sḫm.t] mꜣꜣ.t jr.t nb.t dg.t jm=s ("Sakhmet who sees every eye that looks at her"). See the discussion in Popko (online), Eb 368, note 1.

22 Westendorf (p. 615) and myself read zt (pintail), Lalanne and Métra (p. 123) read zr (grey goose).

23 T. Pommerening was thinking of trachoma or another bacterial conjunctivitis (T. Pommerening, "Medical Re-enactments: Ancient Egyptian Prescriptions from an Emic Viewpoint", in: G. Rosati and M. C. Guidotti (eds), *Proceedings of the XI International Congress of Egyptologists, Florence Egyptian Museum, Florence, 23–30 August 2015* , Archaeopress Egyptology 19 [Oxford, 2017], 523–524).

The following six prescriptions are only titled “Something else” or not titled at all: Eb 370 (59,13–15), Eb 371 (59,15–16), Eb 372 (59,16–17), Eb 373 (59,17–18), Eb 374 (59,18–20), and Eb 375 (59,20–21). If it is true, as I suspect, that they describe alternative treatments for ꜣd.t, this condition must have been common in ancient Egypt (there are a total of 13 prescriptions and possible alternative prescriptions for ꜣd.t in the Eye Book of the Ebers Papyrus).

Eb 376 (59,21–22)

Text:	
Transcription:	k.t n(j).t ḏfḏf.t m jr.t
Translation:	Something different for the (pathological) tear flow from the eye

The origin of the disease name is the verb ḏfḏf (“to be drizzled”) and the noun ḏfḏf.t (“tear” in the medical sense). The problem appears to be excessive tearing (*epiphora*) in one eye. This is a common consequence of a drooping, outwardly rolled lower eyelid which can occur in age-related relaxation of the eye ring muscle (*Ectropium senile;* AoO 2629), in facial paralysis (*Ectropium paralyticum*), and in scarring after an injury (*Ectropium cicatriceum;* AoO 2628). The inferior lacrimal punctum which drains the tear fluid from the eye into the nasolacrimal duct is turned away from the eyeball and therefore does not fulfill its function. This causes tears to constantly overflow over the edge of the lower eyelid. However, it would be strange if the ancient Egyptian doctors had named an ectropion simply for the drizzling of tears, and not for the obvious misalignment of the lower eyelid. Another possible cause of constantly overflowing tears is nasolacrimal duct obstruction which is not visible from the outside. It may be congenital or acquired due to chronic inflammation (AoO 6201).

Theoretically, watering eyes can also be an accompanying symptom of unilateral conjunctivitis, corneal inflammation, injury, or a foreign body in the eye. This prescription would therefore be intended for symptomatic treatment.

Eb 377 (60,1–3)

Text:	
Transcription:	k.t wbꜣ mꜣꜣ
Translation:	Something else (to) “open” the eyesight

Prescriptions for improving eyesight appear a total of 15 times in the Ebers Papyrus Eye Book.[24] This is to be expected, because, in fact, practically every eye disease is accompanied by visual impairment. The causes range from nearsightedness or farsightedness (refractory anomaly), clouding of the lens (cataract[25]), sequelae after infection, inflammation or injury of various sections of the eye, to damage to the optic nerve due to glaucoma, multiple sclerosis or poisons. The term “opening” of the eyesight best describes the successful treatment of a total loss of vision, externally visible clouding of the cornea or pupil, or adhesions of the eyelids (*Symblepharon*; AoO 9429).

Eb 378 (60,3–6)

Text:	
Transcription:	k.t n(j).t dr ꜥḫ.t n(j).t mw m jr.tj
Translation:	Something else to remove the congestion of water in both eyes

The word ꜥḫ.t is the infinitive of the verb ꜥḫj that means “to raise something, to elevate something, to rise”.[26]

The interpretation by other authors of ꜥḫ.t n(j).t mw m jr.tj as a clouding of the lens (cataract)[27] does not convince me. The ancient Egyptian doctors named diseases either

[24] The follow-up prescriptions entitled “Something else” or “Another eye make-up” are included. See also Eb 359 (58,3–6) on page 3.

[25] As already mentioned in Part 1 in my comments on Eb 342 (56,17–19), frequent exposure to UV sun light is a risk factor for early development of cataract. Lens clouding can also be inborn or a long-term sequela of blunt trauma.

[26] Hannig, 170 (5903); Wb I, 224.2–3.

[27] Ebbell, 11; Hannig, 170 (5909); Westendorf, 616. Further translations of ꜥḫ.t mw: accumulation of water (Wb I, 224.8); water congestion (Hannig, 170 [5909]); rising secretions (Lalanne and Métra, 125); “elevation” of water (Popko [online], Eb 378).

based on objective observation or based on the patient's subjective complaint. So, one would expect them to name a cataract after the visible whitish opacity within the pupil, or after the patient's "cloudy" vision. None of that can be easily reconciled with water build-up.

First, let us assume that mw jr.tj means the water inside the eyeballs. When this water "rises", i.e. increases or builds up, this is the perfect description of glaucoma. In this case, the ancient Egyptian doctors would have correctly recognized one of the common disease mechanisms of glaucoma, namely an outflow obstruction in the anterior chamber. I think this is entirely possible, because in acute glaucoma, the increase in intraocular pressure is palpable. The eyeball then feels rock hard. However, an equally palpable increase in pressure in both eyes is unusual. If, on the other hand, what is meant is a "build-up" or "rising" of tear fluid, then a drooping lower eyelid (*Ectropium senile* occurs frequently on both eyes) or a bilateral obstruction of the nasolacrimal ducts (usually congenital) is conceivable.[28]

The dictionaries additionally give a translation for the verb ꜥḫj as "to get away".[29] Then the problem would be a decrease in eye water. Reduced water inside the eyes could serve as a description for shrinkage of the eyeball. It may occur as the final state of a serious but healed infection. However, this occurs rarely in both eyes.[30] If, on the other hand, the tear fluid "gets away", the treatment is aimed at dry, irritated eyes. These may occur with chronic exposure to sun, wind and sand, or with reduced tear production in old age. Furthermore, advanced vitamin A deficiency[31] is accompanied by degeneration of the cornea in both eyes, in which the epithelial cells take on properties of epidermal cells (keratinization). For historical reasons, this condition is described as "dehydration" of the cornea which is why the technical term is *Xerophthalmia* (from ancient Greek ξηρός, dried up, and ὀφθαλμός, eye (AoO 8280]).

The following prescriptions, Eb 379 (60,6–7) and Eb 380 (60,7–8), only have the title "Something else".

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[28] See also my comments on Eb 376 (59,21–22), page 10.

[29] Hannig, 170 (5904); Wb I, 224.6.

[30] But one should be aware that jr.tj may sometimes be a scribal error out of habit.

[31] The traditional grain-based diet of ordinary people in Ancient Egypt predisposed them to vitamin A deficiency.

Eb 381 (60,8–10)

Text:	
Transcription:	k.t n(j).t dr tḫn m jr.t
Translation:	Something else to remove a tḫn injury in the eye

After Eb 337 (56,6–10),[32] this is another prescription for treating a tḫn injury. The verb tḫnj means "to hurt, to attack, to harm".[33] In my opinion tḫn m jr.t was specifically used to describe an eye injury caused by a pointed object (puncture wound [AoO 7448] or scratch wound),[34] because I think it is possible that the root tḫn had an original meaning of "to be pointed". It also forms the words for ibis (bird with a long, pointed beak) and obelisk.[35]

Eb 382 (60,10–11)

Text:	
Transcription:	k.t n(j).t dr s.ḥḏ.w m jr.t
Translation:	Something else to remove corneal scars from the eye

Here, s.ḥḏ.w appear for the third time in the Eye Book after Eb 347 (57,5–6)[36] and Eb 360 (58,6–15; see page 4). Literally translated, they are the "whitened ones" and this term is almost pathognomonic for the irreversible whitish scars of the cornea (AoO 653) following a serious infection (including late-stage trachoma), corneal inflammation, injury or alkali burn (e.g. due to natron or quicklime [AoO 6229]).[37]

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[32] E. Traunmüller, *Eye diseases, Part 1*, 5–6.

[33] Hannig, 1010 (37403, 37404); Wb V, 327.2–6.

[34] Translations by other authors: hit on the eye (Ebbell, *ZÄS*, 58); eye injury/tḫn injury (Hannig, 1010 [37405]; Lalanne and Métra, 117; Popko [online], Eb 337; Wb V, 327.7); scratch wound (Westendorf, 609).

[35] Hannig, 1010 (37394, 37402); Wb V, 326.15, 326.25.

[36] E. Traunmüller, *Eye diseases, Part 1*, 10.

[37] The cornea can become completely white and opaque (AoO 639), and interspersed with ingrowing blood vessels (AoO 586). In modern ophthalmology, corneal scars can be healed through a corneal transplant.

Eb 383 (60,12–13)

Text:	
Transcription:	k.t pẖr.t n(j).t dr nḥꜣ.<w>t m jr.tj
Translation:	Another remedy to eliminate nḥꜣ.(w)t from both eyes

In my comments on Eb 350 (57,10–11) where nḥꜣ.(w)t appears as a medical condition for the first time in the Eye Book,[38] I wrote that it either refers to the word nḥꜣ for "to be uneven, to be rough"/"bumpiness, roughness",[39] or for "to be dangerous, to be terrible, to be wild"[40]. Bumpiness is immediately reminiscent of the papules (lymph follicles) of the eyelid conjunctiva in stage 2 trachoma (AoO 4908).[41] When reading the attribute "terrible" and "wild", respectively, I primarily think of terrible pain, e.g. in acute glaucoma or neuralgia in the eye area.[42] These diseases, however, do not occur in both eyes at the same time.

In all these cases the plural nḥꜣ.(w)t is justified. However, the plural strokes are missing this time. With nḥꜣ.t, it would then be a single bump, e.g. a tumor in the eye area, or something "wild" in one eye, e.g. a serious eye infection. On the other hand, as with Eb 350, both eyes are affected according to the title of the prescription. I therefore suspect that here, the missing plural strokes are a scribal error.

Eb 384 (60,13–16)

Text:	
Transcription:	k.t nt dr znf ḥr jr.tj
Translation:	Something else to remove blood from the eye

[38] E. Traunmüller, *Eye diseases, Part 1*, 11–12.

[39] Hannig, 445 (16041, 16049); Wb II, 291.2.

[40] Hannig, 445 (16036, 16039, 16046); Wb II, 290.5–14.

[41] According to this view, nḥꜣ.(w)t and wḏd.w would be synonymous or they indicate different stages/severities of conjunctival papules. See page 16, and also part 1 of this work (E. Traunmüller, *Eye diseases, Part 1*, 4–5, 7).

[42] Also, because the remedy contains labdanum (resin of *Cistus ladanifer*), an ancient painkiller (not to be confused with laudanum, the opium preparation). P. Dioscurides, *Arzneimittellehre in fünf Büchern* (translated by J. Berendes; Stuttgart, 1902), 1st book, 112–113.

The removal of blood from[43] the eye as the goal of a treatment occurs a total of five times in the Eye Book. Bleeding under the conjunctiva caused by a ruptured vessel does not require treatment. Bleeding into the anterior chamber, into the vitreous body or on the retina can only be detected with modern optical aids (slit lamp, ophthalmoscope). I therefore consider the term “blood” to be a drastic description of severe inflammatory redness of the eyelids and/or the sclera (AoO 3014). So, this prescription is for the treatment of a symptom. See also my comments on Eb 348 (57,6–8) in Part 1 of this work.[44]

The treatment instructions address the patient directly, and he has to carry out the treatment himself.

Eb 385 (60,16–22)

Text:	
Transcription:	k.t n(j).t dr ꜥḫ.t n(j).t mw m jr.tj
Translation:	Something else to remove the congestion of water in both eyes

While copying, the ancient Egyptian scribe slipped in a superfluous hieroglyph A25 (man with baton). I have already explained my thoughts on the “congestion of water in both eyes” in my comments on Eb 378 (60,3–6; see page 11). Again, both eyes are affected. This time, the prescription contains a magic spell to be recited over the main ingredient (malachite) of the "excellent" remedy. The spell averts various eye diseases and symptoms and "all the evil things that are in these two eyes". It was apparently a universally applicable spell and well-known in the medical profession, because it ends with the phrase “[to be continued] according to the ability of the mouth” (ḥm.wt rꜣ).[45]

[43] The preposition ḥr has also a directional meaning.
[44] E. Traunmüller, *Eye diseases, Part 1*, 10–11.
[45] Like the magic spell in Eb 360 (page 4).

Eb 386 (61,1–3)

Text:	
Transcription:	k.t n(j).t sdm n(j).t ḫsf wḫd.w m jr.tj
Translation:	Something else to make up to ward off the papules in both eyes

This is another prescription against wḫd.w that I have interpreted as papules in my comments on Eb 336 (55,20–56,6) and Eb 341 (56,16–17) in Part 1 of this work.[46] In the case of the eye, papules are lymph follicles of the conjunctiva in stage 2 trachoma (AoO 4908). As with Eb 341, this eye make-up is intended for prophylaxis (ḫsf, "to ward off").[47]

To be continued in Part 3.

[46] E. Traunmüller, *Eye diseases, Part 1*, 4–5, 7. The traditional translation of wḫd.w is "pain substances" or "pain demons" (Hannig, 229 [8261]; Westendorf, 609; Popko [online], Eb 336).

[47] In contrast, for prescriptions to treat existing symptoms of illness, the verb ḏr meaning "to eliminate, to expel" is used in the title.