Variations on the Indo-European "Fire and Water" Mytheme in Three Alchemical Accounts

David Gordon White
University Of California, Santa Barbara

Five medieval Sanskrit-language descriptions of a fabulous technique for extracting mercury from the "wells" in which it naturally resides are shown to be remarkably similar to accounts preserved in Chinese and Syriac. Whereas the Sanskrit and Chinese versions date from no earlier than the thirteenth century C.E., the Syriac version dates from no later than the tenth century. The present article first compares and contrasts these three alchemical narratives, and then suggests that all three are perhaps related to a broader and far more ancient Indo-European mythic tradition of a deity associated with the phenomenon of "Fire in Water," as attested in Vedic, Avestan, Roman, Irish, and Greek sources. All eight of these witnesses appear to attest to ancient religious and scientific traditions relative to geothermal phenomena.

1. FIVE MERCURY EXTRACTION ACCOUNTS FROM SOUTH ASIA

In my 1996 study of the Siddha traditions of South Asia, I noted the description of a novel technique for extracting mercury from the 'wells' (*kūpa*) in which it was naturally found.[1] This description appears in seven Sanskrit-language[2] alchemical works from the Indian subcontinent. In chronological order,[3] these are the circa thirteenth-century *Rasendracūḍāmaṇi* (RC) of Somadeva[4] and *Rasaprakāśasudhākara* (RPS) of Yaśodhara Bhaṭṭa;[5] the thirteenth- to fourteenth-century *Rasaratnasamucchaya* (RRS) of Vāgbhaṭṭa;[6] the fourteenth-century *Ānandakanda* (ĀK) of Mahābhairava (or Bhairava);[7] the fifteenth- to seventeenth-century *Śivakalpadruma* of Śivanātha;[8] the 1682–83 C.E. *Rasakautuka* of Mallārinābha;[9] and the

1. David Gordon White, *The Alchemical Body: Siddha Traditions in Medieval India* (Chicago: Univ. of Chicago Press, 1996), 203.

2. A Rajasthani-language compilation, the *Dhātūtpatti* of Ṭhakkura Pherū (17–19), which also contains a version of the account, may be found in Sreeramula Rajeswara Sarma and Yaduendra Sahai, "Gushing Mercury, Fleeing Maiden: A Rasaśāstra Motif in Mughal Painting," *Journal of the European Ayurveda Society* 4 (1995): 162.

3. The chronology of five of these works is discussed in White, *Alchemical Body*, 158–59 and 167–69.

4. *Rasendracūḍāmaṇi* 15.13–15, in *Rasendracūḍāmaṇi of Somadeva*, ed. Siddhinandan Misra with Hindi tr. (Varanasi: Chowkhambha Orientalia, 1984), 289–90.

5. *Rasaprakāśasudhākara* 1.13–16, in *Rasaprakāśa Sudhākara*, ed. and tr. Damodar Joshi (New Delhi: Indian National Science Academy, 2011), 10.

6. *Rasaratnasamucchaya* 1.85–88, in *Rasaratnasamucchaya*, ed. Dharmananda Sharma (Varanasi: Motilal Banarsidass, 1962), 14. G. Jan Meulenbeld (*A History of Indian Medical Literature*, 4 vols. [Groningen: Egbert Forsten, 2000], vol. 2A, 670–71) dates this work to the sixteenth century. While this is likely the case for the iatrochemical chapters found in the latter part of this work, I find chapters 1–11 to be substantially earlier.

7. *Ānandakanda* 1.53b-62a, in *Ānandakanda*, ed. S. V. Radhakrishna Sastri (Tanjore: TMSSM Library, 1952), 6.

8. Anup Sanskrit Library, Bikaner, mss. 4349, fol. 2v1–4. Since this and virtually every alchemical manuscript in the Anup Sanskrit Library were collected by the Bikaner Mahārāja Anup Singh (1669–1698), this work's terminus ante quo is the late seventeenth century.

9. Anup Sanskrit Library, Bikaner, mss. 4203, fol. 4r.6–9. The date of this work has been established by Dominik Wujastyk, *Mathematics and Medicine in Sanskrit* (Delhi: Motilal Banarsidass, 2008), 150, n. 24.

1709 C.E. *Śivatattvaratnākara* of Keḷadi Basava.[10] Both Śivanātha's and Mallārinābha's narratives are virtual copies of Vāgbhaṭṭa's account; Keḷadi Basava transcribes the *Ānandakanda*'s description verbatim.

Somadeva, who likely hailed from Gujarat,[11] provides the following account. After describing the various wells in which mercury is naturally found, he writes

> *snātām ādyarajasvalāṃ hayagatāṃ prāptāṃ jighṛkṣuś ca tāṃ/*
> *so 'py āgacchati yojanaṃ hi paritaḥ pratyeti kūpaṃ punaḥ//*
> *tanmārge kṛtagartake ca bahuśaḥ saṃtiṣṭhate sūtarāṭ/*
> *so 'yaṃ tatra nivāsibhiḥ khalu janair evaṃ samānīyate//*[12]
> [A maiden] who has had her first menstrual bath has approached [a well of mercury] mounted on a horse, and he who wishes to take her hand in marriage (*jighṛkṣuḥ*)[13] pursues her everywhere for a full *yojana*.[14] Then he returns to the well, but King Mercury (or the Prince Royal, *sūtarāṭ*) often settles (*saṃtiṣṭhate*) into the hollow [previously] dug along his path. Then he is collected there by the people living in that place.

The two verses that follow refer to the country in which said mercury is found:

> *nīyamānas tu gaṅgāyā vāyunā gauravena yat/*
> *apatad dūradeśe vai sa deśaḥ pāradaḥ smṛtaḥ//*
> *tat tato mṛdgataḥ sūtaḥ pātanavidhinā khalu/*
> *ānīyate sa vijñeyaḥ pārado gadapāradaḥ//*[15]
> Now, that mercury was being carried by the Ganges [River], the wind, and [its own] mass;[16] and since it fell in a truly distant land (*dūradeśe*), that country is known as 'Setting the Limit' (*pārada*). The mercury (*sūta*) that is in the clay (i.e., mercury ore) is indeed extracted through the sublimation method. Setting the limit to diseases (*gadapārada*), [mercury] is to be known as 'setting the limit' (*pārada*).

The Gujarati author Yaśodhara Bhaṭṭa, whose RPS was either coeval with or slightly later than Somadeva's work,[17] offers a rather laconic description, sans reference to the maiden's menstrual bath.

> *himalāyāt paścimadigvibhāge girīndranāmā ruciro 'sti śailaḥ/*
> *tat sannidhāne 'tisuvṛttakūpe sākṣād rasendro nivasaty ayaṃ hi//*
> *kumārikā rūpaguṇena yuktā svalaṃkṛtā vāhavare 'dhirūḍhā/*
> *tatrāgatā kūpam avekṣamāṇā nivartitā sā mahatā javena/*
> *pradhāvitaḥ sūtavaraś caturṣu kakupsu bhūmau patito hi nūnam//*
> *kūpasya paritaḥ samyak kṣetraṃ dvādaśayojanam/*
> *vistīrṇaṃ ca suvṛttaṃ hi pāradasya samīritam//*
> *tanmṛdaḥ pātane yantre pātitaḥ khalu rogahā/*
> *jāyate ruciraḥ sākṣād ucyate pāradaḥ svayam//*[18]

10. *Śivatattvaratnākara* 6.33.45–50, in *Śivatattvaratnākara*, 2 vols., ed. R. Rama Shastry (Mysore: Oriental Research Institute, 1969), 2:169. For the date of this work, see M. Krishnamachariar, *History of Classical Sanskrit Literature* (Delhi: Motilal Banarsidass, 1937 [1989]), 272.

11. White, *Alchemical Body*, 158.

12. RCM 15.13.

13. *Jighṛkṣuḥ* may also be read as 'he who wishes to catch her'. See below n. 20.

14. About nine miles: Monier Monier-Williams, *A Sanskrit-English Dictionary* (London: Oxford Univ. Press, 1899; reprint Delhi: Motilal Banarsidass, 1984), 858, s.v. *yojana*.

15. RCM 15.14–15.

16. This is a reference to the origin myth of mercury, which is found a few verses earlier (RC 15.4–12). Mercury is produced from Śiva's semen, which he ejaculates into the mouth of Agni, who flies on the wind to the Ganges River. There, the mercury falls from his mouth. The river goddess Gaṅgā pushes the mercury to her shore, from which, due to its mass, it burrows down into a well. See below n. 25.

17. White, *Alchemical Body*, 117, 160–61.

18. RPS 1.13–16.

West of the Himalaya there is a beautiful peak named "Lord of the Hills." In close proximity to that [peak], the Champion of Minerals (*rasendra*)[19] dwells in bodily form (*sākṣāt*) inside a perfectly rounded well. A beautiful, well-adorned young maiden mounted upon the finest of horses [once] came there. Looking down into the well, she [then] very speedily turned back. Most excellent Mercury (*sūtavara*)[20] rushed [after her and] fell to the earth in the four directions. Nowadays there is a perfectly circular field, which, stirred up by Mercury [at that time], is evenly spread out for twelve *yojana*s around the well. Sublimated in a sublimation apparatus, the clay (i.e., mercury ore) of that field is truly [a] disease killing [agent]. The mercury that is produced [through sublimation] is manifestly beautiful. It is itself called 'setting the limit' (*pārada*).

One to two centuries later, Vāgbhaṭṭa's account is slightly more prolix:

prathame rajasi snātāṃ hayārūḍhāṃ svalaṃkṛtām/
vīkṣamāṇāṃ vadhūṃ dṛṣṭvā jighṛkṣuḥ kūpago rasaḥ//
udgacchati javātsā'pi taṃ dṛṣṭvā yāti vegataḥ/
anugacchati tāṃ sūtaḥ sīmānaṃ yojanonmitam//
pratyāyāti tataḥ kūpaṃ vegataḥ śivasambhavaḥ/
mārganirmitagarteṣu sthitaṃ gṛhṇanti pāradam//
patito darade deśe gauravādvahnivaktrataḥ/
sa raso bhūtale līnastattaddeśanivāsinaḥ/
tāṃ mṛdaṃ pātanayantre kṣiptvā sūtaṃ haranti ca//[21]

A well-adorned maiden who has bathed on the occasion of her first menstrual period is mounted upon a horse, [and] looking [all around]. Beholding her, Mercury (*rasa*), who is situated in a well, wishes to take her hand in marriage (*jighṛkṣuḥ*). He suddenly rushes forth, but seeing him, she swiftly takes flight. Mercury (*sūta*) follows her for the distance of one full *yojana*. Then He Who Was Born from Śiva quickly returns to the well [but] he [ends up] settled (*sthita*) in hollows that have been fashioned along his path. [That is how] they catch the mercury (*pārada*). That mercury, because of its mass, fell from the mouth of Agni in Darada country. It was absorbed into the surface of the earth. The people of this and other countries cast that clay (i.e., mercury ore) into a sublimation apparatus and extract the mercury.

About a century later, the *Ānandakanda*, a work likely compiled in the southwestern part of the subcontinent,[22] adds several details:

prathamārtavasusnātā surūpā śubhalakṣaṇā//
śuddhāmbaradharā mālyagandhaliptā subhūṣitā/
uttamāśvasamārūḍhā ratisaṅgavivarjitā//
abharcya gaṇanāthaṃ ca bhairavaṃ ca guruṃ purā/
rasendrabhairavaṃ dhyātvā kūpasthaṃ pāradaṃ priye//
paśyec chīghraṃ tato gacchet na punaḥ pṛṣṭham īkṣayet/
ekayojanamātreṇa kumārī hayasādhanā//
tadānīm āharet tat tu kumārī saṅjighṛkṣayā/
kūpamadhyāt samutpatya so 'nudhāvati tāṃ prati//
yāvad yojanam āgatya punaḥ kūpe viśet kṣaṇāt/
paritaḥ kṛtagarteṣu teṣu teṣu ca saṃsthitam//
taṃ rasendraṃ śucir bhūtvā gṛhṇīyād rasadeśikaḥ/
gauravād agnivadanāt patito daradāhvaye/

19. Here I am translating the name Indra in the more generic sense of "champion." The semantic field of *rasa* is not limited to "mineral"; however, that is the specific sense of the term here.

20. While "most excellent Mercury" is the literal reading of *sūtavara*, it may be that a double entendre is intended here, with the compound also denoting the maiden's "mercurial suitor." Such would align with the use of desiderative forms of the verb √*grah* in the three other Sanskrit-language accounts translated here. See above, note 13 and below n. 102.

21. RRS 1.85–88.

22. White, *Alchemical Body*, 168.

deśe sa sūto bhūlīnaḥ tantrajñai rasakovidaiḥ//
nikṣipya mṛttikāyantre pātanākhye samāgataḥ/
pārado gṛhyate devi doṣahīnaḥ sa ucyate//
evam evaṃ tatra tatra siddhavidyādharaiḥ sadā/
nikṣepitaḥ pāradendro vidyate devi siddhidaḥ//[23]

An attractive, fine-featured [maiden], well-bathed after her first menstruation and wearing fresh clothing, fine ornaments, and anointed with fragrant garlands, is mounted upon the finest of horses. She has shunned sexual intercourse. After reverencing Gaṇanātha and Bhairava, and contemplating the ancient guru Bhairava the Lord of Minerals (*rasendrabhairava*), she should, O my darling, quickly gaze upon Mercury (*pārada*), who is dwelling in a well. The equestrian maiden should then make off over the distance of one *yojana*, without once looking back. But now the maiden should bring that [Mercury] home [as her bridegroom] (*āharet*). Out of a desire to take her hand in marriage (*saṅjighṛkṣayā*), he rises up from the heart of the well and chases after her. When he has covered a *yojana*, he will suddenly [attempt to] re-enter the well; but a native from the Land of Mercury shall, after purifying himself, take hold of that Champion of Minerals who has settled into hollows [previously] dug on all sides [of the well]. That mercury (*sūta*), because of its mass, fell from the mouth of Agni in the country called Darada. [There] it was absorbed into the ground. Cast into the earthen apparatus called "Sublimation" by alchemists conversant in the Tantras,[24] the collected mercury (*pārada*) is extracted. O Goddess! It is said to be flawless. O Goddess! Perfected Ones (*siddha*) and Wizards (*vidyādhara*) everywhere have always inscribed [its name as] 'the champion among those setting the limit' (*pāradendra*) and known it as a provider of supernatural powers.

The mytho-logic behind this extraction technique is clear. The Hindu alchemical tradition identifies mercury as the phallic god Śiva's semen in mineral form. Sulfur, which is mercury's principal chemical reagent, is the mineral form taken by the uterine or menstrual blood of Śiva's divine consort. The origin myths for the two minerals, found in a number of alchemical works, depict them as the only slightly altered sexual emissions of the primal dyad of Hindu Tantra.[25] This conceptual interplay between sexual fluids and minerals is sufficient for understanding the attraction that a menarcheal maiden would have on mineral semen. Its eruption out of a subterranean well would appear to be orgasmic in everything but name—but to what end? The hollows dug in its path constitute a novel form of contraception.

As for the detail that the maiden is mounted on a horse, this would appear to be a piece of South Asian exotica. Traditional South Asian women did not ride horseback. However, women from faraway lands, west of the Himalayas, situated at the limit of the world, apparently could. Such may be seen in a half-dozen extant Mughal miniatures, wherein the landscapes across which mercury is pursuing the maiden on horseback feature groups of figures wearing exotic European-style cloaks and hats.[26] The matrimonial language of these accounts also brings equestrianism into the picture, since in traditional Indian weddings the groom rides to the house of the bride to fetch her back to his home. Here as well, the reversal of roles would once again be of a piece with the exotic venue of these unconsummated alchemical marriages.

23. ĀK 1.53b-62a.

24. I have emended Sastri's reading of *rasakovidaḥ* to *rasakovidaiḥ*.

25. For mercury: RC 15.4–12, in Misra, *Rasendracūḍāmaṇi*, 287–88; RRS 1.60–66, in *Rasaratnasamucchaya*, 9–10; ĀK 1.8–15, in *Ānandakanda*, 2. For sulfur: *Rasārṇava* 7.57–66, in *Rasārṇava*, ed. Prafulla Candra Ray and Hariscandra Kaviratna (Calcutta: Baptist Mission Press, 1910), 101–2; RRS 3.2–12, in *Rasaratnasamucchaya*, 38–39; and *Kākacaṇḍīśvarakalpatantra* 46.2–3, in *Kākacaṇḍīśvarakalpatantra*, ed. Gyanendra Pandey (Varanasi: Chowkhamba Sanskrit Series Office, 2003), 131–32. See above n. 16.

26. For a discussion, see Sarma and Sahai, "Gushing Mercury," 155–60.

A few notes on terminology are in order here. These accounts enshrine all of the principal Sanskrit terms for mercury: *rasa* ('essential element'), *rasendra* ('champion of minerals'), *sūta(ka)* ('he who was born'), and *pārada* ('setting the limit'). However, the reader will also have noted that in my translation I have alternated between using the masculine ("he") and neuter ("it") pronouns for mercury. In the first part of each narrative, in which Mercury actively pursues the equestrian maiden, indicating agency, mobility, and volition (*jighṛkṣu*, 'wishing to take her hand in marriage [or to catch her]'), I call mercury "he" or "him." The language of the RC, which refers to him as King Mercury or the Prince Royal (*sūtarāṭ*); as well as that of the RPS, which speaks of the Lord of Minerals as dwelling 'in bodily form', even 'in person' (*sākṣāt*) at the bottom of his well, is particularly significant. In the RRS Mercury is referred to as He Who Was Born from Śiva, a reference to the fact that these same alchemical sources identify mercury with Śiva's semen, which was 'engendered' (*sūta*) after an interminable bout of sexual intercourse with the great Goddess. Mercury is a son of god of sorts, and as such, one should perhaps translate the term *sūta* as '(the) Son' in these accounts. But are these sources imagining him simply as animated "semen" or as something more divine, albeit anthropomorphic? In the second part of each narrative, which describes how the metal is extracted from its ore, I call mercury "it," because what is being described is the treatment of a non-sentient, although volatile, mineral.[27] This is not a conceit on my part. In fact, it is the point upon which this entire study hinges.

Finally, it is significant that the later RRS and ĀK transform the 'distant land' (*dūradeśa*) of Somadeva's account into 'Darada Country' (*darada-deśa*) and the 'Country called Darada' (*daradāhvaya deśa*). Identified with the modern-day Dardistan—a region to the west of the Himalayas,[28] between the headwaters of the Kishen Ganga and the Indus River and bordering northern Pakistan, Afghanistan, Kashmir, and Ladakh—this land and its people were known as Darada(s) in the South Asian record from the time of Pāṇini down through the medieval period.[29] As for Somadeva himself, he identifies this distant land by another name, Pārada, which he etymologizes as "Setting the Limit." Like Darada, Pārada was a name both for a mineral and for a faraway land and its people: medieval traditions placed the Pāradas or Pārada country on the Makran coast of southern Baluchistan.[30] Also located in this region is the ancient shrine of the "Red Goddess" Hiṅglāj Devī, whose name is derived from the Sanskrit *hiṅgula* ('red cinnabar'). In the vicinity of her shrine is a site called Candrakūp ('Moon Well'), to which I will return in my conclusion.[31]

Like *hiṅgula*, *darada* is a Sanskrit term for cinnabar, mercuric sulfide, the red-colored ore (the "clay" of our narratives) from which mercury is commonly extracted. While Dardistan is

27. Although the ĀK calls mercury *pāradendra* in the final verse of its flowery account.

28. This is where the RPS locates its well. See above n. 19.

29. Joseph Schwartzberg, ed., *A Historical Atlas of South Asia*, second impression, with additional material (New York: Oxford Univ. Press, 1992), 109 and 168, and maps on pages 13, 14, 15, 16, 27, 31, 32, and 137 (map quadrant 2CD); André Wink, *Al-Hind: The Making of the Indo-Islamic World*, vol. 1 (Leiden: Brill, 1990; rpt. Delhi: Oxford Univ. Press, 1990), 232; and Dinesh Candra Sircar, *Studies in the Geography of Ancient and Medieval India*, 2nd rev. ed. (Delhi: Motilal Banarsidass, 1990), 34, 35, and 68. These are likely the same people as Ptolemy's Daradrai: White, *Alchemical Body*, 205.

30. Schwartzberg, *Historical Atlas*, 14, 27, and 137 (map quadrant 4AB).

31. David Gordon White, "Mercury & Immortality: The Hindu Alchemical Tradition," in *Alchemical Traditions: From Antiquity to the Avant-Garde*, ed. Aaron Cheak (Melbourne: Numen Books, 2013): 222–23; and Devadatt Shastri, *Āgneyatīrth Hiṅglāj* (Bombay: Lokalok Prakashan, 1978), 29–47, esp. 44–45. See below nn. 108–12.

not particularly rich in cinnabar (the same may be said for the entire Indian subcontinent[32]), Darada Country is identified in a number of South Asian alchemical works as the site of a "northern well" of mercury. One of a set of five directionally distributed wells of mercury, the mercury of this well is notable for its red color and high level of purity.[33] It is nonetheless possible that these sources identified cinnabar with this country because mercury ore (whose other names include *cīna-piṣṭa* ['Chinese powder'] and *carmāragandhikā* ['that which makes hides stink']) was carried into the subcontinent from mines in East and Inner Asia via trade routes running through Dardistan.[34] But these routes were also conduits of information, which in some cases traveled more extensively than the trade goods themselves. Such was possibly the case with the information embedded in these Sanskrit-language mercury extraction accounts.

Slightly later than the Mahābhairava who compiled the ĀK but similarly hailing from South India was another alchemical author who also located a mercurial well in a distant country and described the mercury in that well as a living, sentient being. This was the fifteenth- to seventeenth-century Sittar (Siddha) alchemist Irāmatevar, a Tamil Hindu who converted to Islam (and changed his name to Yakoob or Yakoppu) in order to further his alchemical quest.[35] The most salient portion of Yakoppu's account involves his journey to a fabled well of mercury located some 500 kosas[36] from "Mecca." As he relates,

> I went to Mecca to find the mercury well about which the Arabs spoke with much authority. I swallowed some *kulikai* and set off to the mountainous region when I came across some Nabis, the alchemy masters. I stopped there for a while, served them and then asked for the exact location of the well. They let me know the place and I with one more tablet of mercury went to the location with a gourd pitcher. On seeing the well I slowly lowered the vessel. But I was assaulted by the mercury. I had to fly high and with mercury I went back to Mecca, pretending to be innocent. I treated the mercury with blue vitriol and other chemicals and stabilized the mercury. I thus prepared many kinds of pills. I kept one under my tongue, one in my palm and one in

32. There are virtually no native sources of mercury ore in the Indian subcontinent, although Sharma (*Rasaratnasamucchaya*, 199) speaks of mercury tailings in the Chitral River in Pakistan's Khyber Pakhtunkhwa state, near that country's border with Afghanistan, and S. R. Murthy ("An Occurrence of Cinnabar in *Rasārṇavakalpa*," *Indian Journal of History of Science* 14:2 [1979]: 83–86) argues, on the basis of textual data, for the presence of mercury ore in the Siddhipur region of the western Indian state of Gujarat.

33. The five wells are discussed in the ĀK (1.15–23), *Śivakalpadruma* (fol. 2r10), *Rasakautuka* (fol. 3r1–5), and the fifteenth-century *Rasasindhu* of Viṣṇudeva (Anup Sanskrit Library, Bikaner, mss. no. 4276, fol. 1r10–2v2). The same sources identify *pārada* as the white-colored mercury of the *eastern* well (even if geographers placed Pārada Country at the westernmost extremity of the Indian subcontinent, in Baluchistan.

34. Sharma, *Rasaratnasamucchaya*, 207; White, *Alchemical Body*, 66. Important Asian cinnabar deposits are found at Khaidarkan in southern Kirghizstan, a few hundred miles to the northwest of Dardistan, as well as Wuchuan and Wanshan in the Guizhou province of southwestern China, far to the east of the Indian subcontinent: Giulia Pattelli et al., "Effects of the November 2012 Flood Event on the Mobilization of Hg from Mount Amiata Mining District to the Sediments of the Paglia River Basin, *Minerals* 4.2 (2014): 243, fig. 1. See also White, *Alchemical Body*, 380–81 nn. 94–95. However, it cannot be known whether mercury was being extracted at these specific sites as early as the thirteenth to fifteenth centuries. See below nn. 53–54.

35. Kanchana Natarajan, '''Divine Semen' and the Alchemical Conversion of Iramatevar," *The Medieval History Journal* 7.2 (2004): 256–57 and n. 10.

36. An uncertain unit of measurement whose etymology is contested. Most sources equate it to somewhere between two and three miles: Col. Henry Yule and A. C. Burnell, *Hobson-Jobson, A Glossary of Colloquial Anglo-Indian Words and Phrases, and of Kindred Terms, Etymological, Historical, Geographical, and Discursive*, ed. William Crooke, 2d. ed. (London: John Murray, 1886; rpt. Delhi: Munshiram Manoharlal, 1968), 261–62 s.v. "*coss*."

> my hip. Thus with a wrapping of mercury, I flew over several mountains, several countries, and met many alchemists. I exchanged my knowledge and learnt many new techniques from them.[37]

On the basis of the vocabulary and other data found in Yakoppu's accounts of his travels, I believe his mercurial well was located far closer to the Indian subcontinent than it was to "Mecca"; in fact, there is some evidence that his mercurial well was none other than the Candrakūp situated in the region of Hiṅglāj Devī.[38]

Regardless of its location, the mercury found in this well, like that of the extraction accounts, appears to be sentient, mobile, and possessed of free will. However, rather than pursuing a virginal human female, even a prospective bride, out of attraction to her, he here assaults a human male on the basis of some other motivation. Yakoppu's testimony has yet another wrinkle to it, since in another of his works, the *Tantakam 110*,[39] he identifies Valai as the patron goddess of Tamil alchemists. However, as Kanchana Natarajan has noted in her study of this alchemist, the Tamil term *valai* denotes both a pre-pubescent maiden and mercury.[40] This is of course at variance with the Sanskritic alchemical canon, which identifies mercury as the semen of the phallic god Śiva, and Yakoppu makes a point of using the male Sanskritic term *sūta* for the mercury that "assaulted" him.[41] These "reversals," as structuralists of yore would have called them, turn out to be quite significant when viewed in wider geographical and historical context.

What are we to make of this seeming humanization, if not divinization, of King Mercury or the Prince Royal (*sūtarāṭ*), or of He Who Was Born from Śiva (*śivasambhava*), who rushes out of the well in which he dwells "in person" in order to pursue menarcheal maidens and assault foreign alchemists? Its possible human qualities aside, the mercury of South Asian alchemy, was, in its purest form, assumed to be possessed of the power of flight (*khecaratvam*).[42] This power is referred to throughout the alchemical canon, and also appears in the yogi lore of pre-modern India. We find the technical term for such mercury in Yakoppu's account: the Tamil *kulikai* is a cognate of the Sanskrit *guṭikā* ('globule', 'pellet', 'pill'). In its most highly refined state, alchemical mercury becomes a solid pellet, possessed of the autonomous power of flight. When held in the mouth of an alchemist—a practice called *guṭikābandha*—it allows him to fly.[43] An amusing seventeenth-century tale features a yogi who, possessed of just such a pellet, once flew into the Emperor Akbar's harem and promptly fell asleep. While he was sleeping, the mercurial pellet fell from his mouth. Akbar, learning of the situation, nonetheless showed himself to be more interested in the pellet than any liberties the yogi might have taken with his women.[44]

37. *Yakoppu Cunnam* 151–60, translated in Natarajan, "Divine Semen," 264–65.

38. White, "Mercury & Immortality," 222. See above n. 31 and below nn. 108–12.

39. It is a commonplace of medieval Tamil works to include the number of verses in the title. The *Tantakam* is 110 verses in length.

40. Natarajan, "Divine Semen," 260–61.

41. Natarajan, "Divine Semen," 265 n. 37.

42. *Rasārṇava* 2.89; 3.9,17–20; 11.98–107,162–63, in Ray and Kaviratna, *Rasārṇava*, 25, 36–38, 172–73, and 182. See also White, *Alchemical Body*, 487 n. 220.

43. *Rasārṇava* 12.336–37, 380, in Ray and Kaviratna, *Rasārṇava*, 262 and 272. See also White, *Alchemical Body*, 487 n. 220.

44. Shafaat Ahmad Khan, *John Marshall in India: Notes and Observations in Bengal 1668–1672* (London: Oxford Univ. Press, 1927), 371.

2. THE MERCURY EXTRACTION ACCOUNT IN TWO NON-SANSKRIT SOURCES

In an 1895 article M. F. De Mély discussed the possibility of exchanges in matters alchemical between medieval China and Greece. By way of making his point, De Mély described a mercury extraction technique reported in nearly identical terms in a circa 800–1000 C.E. Syriac work attributed to Zosimus of Panoplis on the one hand,[45] and on the other an entry in the *Ho han sans ts'ai t'ou hui*, a seventeenth-century Chinese encyclopedia.[46] These accounts are nearly identical in all their details to those found in our Sanskrit sources. De Mély's Chinese source is in fact a relatively late reworking of a description found in several earlier works, including the *Bencao Gangmu* of Li Shizhen, a sixteenth-century Ming anthology.[47] However, the earliest extant Chinese version, which appears in Zhu Derun's 1347 C.E. *Cun fuzhai wenji*, dates from about the same period as the Sanskrit-language RC, RPS, and RRS. As Zhu explains, he learned of this mercury extraction technique in 1345 from two former Yuan imperial guards, to whom it had been described by members of an embassy from Fo-lin some time between 1314 and 1320.[48] Zhu's narrative, titled "Accounts of Foreign Lands,"[49] reads as follows:

> . . . 其域當日沒之處，土地甚廣， 有七十二酋長 。地有水銀海，周圍可四五十里，國人取之之法：先於近海十里掘坑井數十，然後使健夫駿馬馳驟可逐飛鷹者，人馬皆貼以金薄，迤邐行近海 。日照金 光晃曜，則水銀滾沸，如潮而來，勢若粘裹 。其人即迴馬疾馳，水銀隨後趕至，行稍遲緩，則人馬俱爲水銀撲沒 。人 馬既迴速，於是，水銀之勢漸遠 、力漸微，卻復奔回，遇坑井則水銀溜積其中 。然後其國人旋取之，用香草同煎，皆花銀也 。其地又能撚毛爲布，謂之梭福，用密昔 丹葉染成沉緑，浣之不淡 。其餘氈氍 、錦疊，皆常産也 。[50]
>
> Their country lies in the region where the sun goes down. The land is extremely vast and has seventy-two tribal elders. There is in this country a sea of quicksilver, spanning about forty to fifty *li* in circumference.[51] The way in which the inhabitants extract [the quicksilver is the following]: First they dig several tens of well shafts at a distance of ten *li* from the shore, and after that they dispatch strong men [to that place] on horses that are so light-footed that they can keep up with a flying falcon. The men and the horses are all covered in gold leaf and ride abreast in tight formation skirting along the meanders of the sea's shoreline. When the sun shines off the gold, [it emits] a dazzling brilliance; then the quicksilver boils up like a tidal wave and comes forth, as if it were intending to cling fast [to the gold leaf] with the strength of a viscous glue. Thereupon, the men immediately turn their horses around and ride off with the greatest of speed, and the quicksilver pursues them. Were they to move only slightly more slowly, then the quicksilver would strike and drown them. By the time the men and horses have raced back, the quicksilver's strength has receded and its vigor diminished. As they retreat further back to the well shafts, the quicksilver trickles and accumulates therein. Then the inhabitants immediately fetch it out. They boil it down with aromatic herbs, such that it all turns into fine silver [lit. "flower silver"].

45. My dating of this work is based on an email communication from Matteo Martelli, July 31, 2014. See also M[arcellin] Berthelot, ed., *Histoire des Sciences: La chimie au Moyen Âge* (3 vols.), vol. 2: *L'Alchimie syriaque*, introduction, text, and translation by Rubens Duval (Paris: Imprimerie Nationale, 1893; rpt. Osnabrück and Amsterdam: Otto Zeller and Philo Press, 1967), v. See below nn. 57–58.

46. M. F. De Mély, "L'alchimie chez les chinois et l'alchimie grecque," *Journal asiatique*, 9th series, vol. 6 (Sept.–Oct. 1895): 332–34.

47. Email communication from Ulrike Unschuld, February 19, 2014.

48. Zhu Derun, *Cun fuzhai wenji*, 10 vols. (Ji'nan: Qi Lu shushe, 1997), vol. 5, fol. 14b.

49. 異域說

50. *Cun fuzhai wenji*, vol. 5, fol. 14b-15a. I am grateful to my colleague Dominic Steavu-Balint for his translation of this passage.

51. The traditional Chinese *li* measured approximately one-third of a mile or half a kilometer.

Although the virginal maiden on horseback has been replaced here by a band of male riders, most of the details of the Sanskrit-language narratives are present in this Chinese account. The process takes place in a distant land far to the west, and mercury, after pursuing its quarry over a specific distance, is captured and immobilized by means of well shafts dug across its return path. It too is processed through sublimation ("boiling"), and the "flower silver" into which it is transformed is evocative of refined quicksilver. This being a sea rather than a well of mercury, it boils up "like a tidal wave," but as in the South Asian accounts, it is possessed of volition, "intending" as it were to cling fast to the gold leaf. Here, however, the attraction is chemical rather than sexual: when mercury amalgamates with gold, it truly appears to cling to it prior to consuming it entirely. When it amalgamates, mercury's viscosity is comparable to that of a thick glue-like or binding material.[52]

Walter Fuchs, who in 1958 published the earliest transcription and (German) translation of this account, argued that the envoys in question were from Moorish Granada, and that the mercury source to which they were referring was none other than the Almadén mine, famous then as now for the abundance and quality of its mercury ore.[53] However, Fuchs also noted that in Zhu's time Asia's mercury supply came from "China, Persia, Transoxiania and the Near East," an indication that Zhu's account perhaps was more an "alchemical fable" than a source of useful economic or geological information. This being said, Zhu's title includes the toponym Fo-lin, a likely variant on Fu-lin, the standard Chinese term for Byzantium or Roman Syria.[54] Elsewhere, as De Mély noted in his 1895 study, Bir es Zeibaq ('Well of Mercury'), the site named in his seventeenth-century Chinese source, was a contemporary Syrian toponym.[55] At the same time Zhu's account places his sea of mercury "in the region where the sun goes down." Are we to read this as an equivalent of Somadeva's 'distant land' (*dūradeśa*) known, according to his folk etymology, as 'Setting the Limit' (*pārada*)? Or did Zhu's envoys, some three decades after its story had been communicated to them, report some more precise location to him?

Here, we should recall that Irāmatevar-Yakoppu related that he "went to Mecca to find the mercury well about which the Arabs spoke with much authority."[56] By his time, Mecca, Antioch, and the former Byzantium had long since been absorbed into the Ottoman Empire. But world geography may not be the key to this puzzle, for, as De Mély noted in 1895, the Chinese account just reviewed appears to have been derived from a narrative embedded in a circa 800–1000 C.E. Syriac version of the *Treatise* of Zosimus of Panoplis, a work translated into French by Rubens Duval in 1893. This version is presumably a translation of an earlier Greek-language work, but because that work is no longer extant, one cannot

52. This dramatic process may be viewed on line: https://www.youtube.com/watch?v=gKxCw889qck (accessed on October 1, 2017).

53. Walter Fuchs, "Ein Gesandtschaftsbericht über Fu-lin in chinesischer Wiedergabe aus den Jahren 1314–1320," *Oriens Extremus* 5/6 (1958–1959): 127–28. Fuchs's transcription and translation are at pages 124–26.

54. Joseph Needham, Ho Ping-yu, Lu Gwei-djen, and Nathan Sivin, *Science and Civilisation in Ancient China* (Cambridge: Cambridge Univ. Press, 2000), vol. 5, pt. 4:337. De Mély ("L'alchimie," 333) identifies it with Syria. For the uncertain location of Fu-lin in three late thirteenth-century Chinese sources, see "From the *Sung-shih,* ch. 490"; "Ma Tuan-lin, *Wen-hsien-t'ung-k'ao***,** ch. 330"; and "Chao Ju-kua, *Chu-fan-chih,*" in J. S. Arkenberg, "East Asian Sourcebook: Chinese Accounts of Rome, Byzantium and the Middle East, c. 91 B.C.E. – 1642 C.E." On line at: http://depts.washington.edu/silkroad/texts/romchin1.html (accessed on November 5, 2015). These sources situate Fu-lin in the region of Cilicia, Armenia, and the Black and Mediterranean Seas, and identify Antioch as its capital. These documents appear to reproduce the data found in far earlier Chinese histories, dating from as early as the fifth-sixth centuries C.E..

55. De Mély, "L'alchimie," 334.

56. Yakoppu is likely referring here to the Arabic-language work titled *Muṣḥaf aṣ-ṣuwar* ("The Book of Pictures"). See below n. 58.

know whether it included the following narrative.[57] I am grateful to Dr. Matteo Martelli of University of Bologna for his translation of this passage, which, based on his own concise edition of the *Treatise*, is superior to the Berthelot edition upon which Duval had based his 1893 translation:

> ܒܐܬܪܐ ܓܝܪ ܒܪܝܐ ܕܟܠܗ ܡܥܪܒܐ ܒܪ ܕܗܘܐ ܙܘܣ ܥܝܢܐ ܐܝܬ ܕܡ̈ܝܐ ܕܢܒܥܐ ܘܡܣܩܐ ܠܗ ܐܝܟ ܡ̈ܝܐ.
> ܘܡܐ ܕܚܙܝܢ ܠܗ
> ܥܡܘܪ̈ܘܗܝ ܕܐܬܪܐ ܗ̇ܘ܆ ܕܡܛܝܒ ܕܢܦܘܩ ܡܢ ܥܝܢܐ. ܒܬܘܠܬܐ ܚܕܐ ܕܡܝܬܪܐ ܒܫܘܦܪܗ̇ ܡܩܝܡܝܢ ܠܗ̇
> ܥܪ̈ܛܠܝܬܐ ܠܘܩܒܠܗ ܠܬܚܬ ܠܬ̈ܘܦ ܐܪܘܚܐ ܒܚܫܘܠܬܐ. ܐܝܟ ܕܢܬܪܓܪܓ ܡܢ ܫܘܦܪܗ̇ ܕܥܠܝܡܬܐ.
> ܘܫܚܠ ܥܠܝܗ̇ ܒܫܘܪܐ. ܟܕ ܪܓܝܓ ܕܢܫܬܠܛ ܒܗ̇. ܗ̇ܝ ܕܝܢ ܒܪܗܛܐ ܩܠܝܠܐ ܡܬܡܪܢܐ. ܟܕ ܥ̈ܠܝܡܐ ܩܝܡܝܢ
> ܠܘܬܗ̇ ܕܫܩܝܠܝܢ ܢܪ̈ܓܐ ܒܐܝ̈ܕܝܗܘܢ. ܘܡܚܕܐ ܕܚܙܝܢ ܕܐܬܩܪܒ ܠܗ ܠܘܬܗ̇ ܕܒܬܘܠܬܐ. ܡܚܝܢ ܠܗ
> ܘܦܣܩܝܢ ܠܗ. ܘܐܘܪܚܗ ܐܬܐ ܠܥܘܡܩܐ ܗ̇ܘ. ܘܒܢܦܫܗ ܓܠܕ ܘܡܬܩܫܐ. ܘܠܗ ܠܗܢܐ ܦܣܩܝܢ ܠܗ ܡܚܝܢ ܘܐܦ
> ܡܬܚܫܚܝܢ. ܘܡܛܠ ܠܗܘ ܕܗܘܐ ܡܢ ܐܢܟܐ ܡ̈ܝܐ ܢܗܪܐ ܩܪܐܘܗܝ܂ ܡܛܠ ܕܐܝܟ ܡ̈ܝܐ ܕܡܬܐܫܕܝܢ
> ܒܚܩ̈ܠܬܐ ܪܗܛ. ܘܐܝܟ ܬܢܝܢܐ ܡܪܘܕܐ ܘܢܗܝܪܐ. ܗܟܢܐ ܗ̇ܘ ܒܕܡܘܬܐ
>
> In the furthest region of the West,[58] where *zws* (‘tin’; lit. ‘Zeus’] is located, there is a spring of water[59] that gushes out and pulls him [i.e. Zeus] up[60] like water. When the inhabitants of this region see that he is ready to overflow out of the spring, they have a virgin girl of outstanding beauty stand naked in front of him; she [stands] in a depression, in front of a deep hole in the field, so that he lusts after the beauty of the young girl; for he rushes upon her in a leap with the desire to take possession of her. But she is accustomed to running quickly, and there are young people standing next to her bearing axes in their hands. As soon as they see him draw near to the virgin girl, they beat and cut him; and he goes his way into that deep hole, and he congeals by himself and hardens. They cut this *zws* into pieces [lit. into nodules or lumps] and make use of it. That is why they give the name of “river water” to the mercury that comes from tin (*onko*). They use this name because it runs like the water that flows away in the fields and it is similar in shape to a rebel and bright dragon.

In his 1893 summary of this passage, Duval indicated that “they offer a virgin girl to the deity of this spring, in order to draw him outside.”[61] This of course brings us back to the nature of the fluid entity contained in its spring, well, or sea: was it a living god or a flowing metal? It is for this reason that Martelli has employed the personal pronoun “he” for the tin of this account: the Syriac term for “tin” is *zws*, which is also the transcription of the Greek “Zeus.” This is quite common in Syriac alchemical works, where the name of the Greek god (or better still, the planet) is usually used to refer to as “tin.”[62] However, at the end of the

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[57] As Duval notes (in Berthelot, *Histoire des Sciences*, 2: xxiii), only a short passage from Zosimus of Panoplis’s original Greek-language *Treatise* has survived, in the form of a transcription. If the mercury extraction account found in the Syriac were to have existed in the Greek original, it could be dated back to as early as the fourth to sixth century C.E., Zosimus’s traditional dates.

[58] A circa 850–1000 C.E. Arabic translation of, or compilation based upon, this Syriac version calls this distant land *magrib*, i.e., the Magreb, Mediterranean North Africa: Theodor Abt, ed. and tr. (with Salwa Fuad), *The Book of Pictures Muṣḥaf aṣ-ṣuwar by Zosimos of Panopolis* (Zurich: Living Human Heritage Publications, 2011), 458. This Arabic version, which is found on fol. 161v of Istanbul Arkeoloji Müzesi, mss. 1574, generally hews very closely to the Syriac account.

[59] The expression “of water” is not completely clear in the manuscript, since the ink is quite faded. Email communication from Matteo Martelli, September 17, 2015.

[60] The verb *sleq* (‘to go up, ascend’) seems to be a technical term; in the *aphel* form (*’aseq*) it means also ‘to distill, sublimate”’: Email communication from Matteo Martelli, September 17, 2015.

[61] Duval, in Berthelot, *Histoire des Sciences*, 2: xxxii.

[62] Email communication from Matteo Martelli, September 17, 2015. See also Rubens Duval, “Notes de lexicographie syriaque et arabe,” *Journal asiatique*, n.s. 2 (1893): 1888–1901.

passage, when Zosimus discusses the extraction of mercury from said tin, he uses a different term, *onko*, which unambiguously refers to the metal alone.[63] We have already seen the same alternation in terminology in the South Asian versions of this extraction account: when mercury is pursuing the maiden, it is a living being, whereas when its sublimation is being described, it is treated as a volatile metal.

As was the case in both the South Asian and Chinese accounts that were posterior to it, Zosimus attributes volition, emotion, and mobility to the fluid deity: he "lusts after the beauty of the young girl" and "rushes upon her in a leap with the desire to take possession of her." This version also provides us with a possible explanation for the Sanskrit verbal constructions based on the root √*sthā* ('stand', 'settle') in the four accounts: drawing on a narrative that was likely their common source, these were explaining how mercury, once trapped in hollows in the ground, "congeals by itself and hardens." Now, it is true that the fluid deity or metal of Zosimus's narrative is tin—which only yields up mercury after it has been processed by the youthful natives of the place—but as I will show, this in fact strengthens the text-historical argument I will come to momentarily. Finally, we cannot overlook the fact that, while Zosimus's virgin isn't riding horseback as she does in the Sanskrit accounts, she is naked, standing in front of the hollow that will trap the fluid deity who lusts after her. Here we are far from Zhu's or Yakoppu's accounts of male mercury assaulting male humans. As in the South Asian extraction narratives, the attraction here is patently sexual, a male deity streaming out of the ground in pursuit of a naked maiden. Here as well, the fluid metal's capture involves catchment basins and, in this case, chopping.

3. THE INDO-EUROPEAN "FIRE IN WATER" MYTHEME

Let us summarize the mercury extraction narrative as we have it from these four sources, which I will indicate hereafter as **SAN** (Sanskrit), **T** (Tamil), **C** (Chinese), and **SYR** (Syriac):

> In a distant western land, a (naked [**SYR**]) maiden (on horseback [**SAN**]; or else a mounted band of men clad in gold leaf [**C**] or a lone male alchemist [**T**]) attracts the attention of a living, sentient being having the form of a fluid metal by passing (or standing [**SYR**] or flying [**T**]) in proximity to the well [**SAN**], spring [**SYR**], or sea [**C**], in which he resides. Possessed of a desire or intention to marry, catch [**SAN**], possess [**SYR**], cling to (the golden armor of [**C**]), or assault [**T**] the approaching human(s), that living being (who is identified with a deity [**SAN**, **SYR**]) rushes after her [**SAN**, **SYR**](or him [**T**], or them [**C**]). He pursues his quarry, but when, after a specific distance he turns around and attempts to return [**SAN**, **C**], he is trapped in a naturally occurring depression [**SYR**], or hollow(s) [**SAN**] or well shafts [**C**] that have been dug to that end by the natives of that land. Now reduced to the state of an inert mineral or metal, he/it is no longer referred to as a living sentient being or deity [**SAN**, **C**, **SYR**]. The natives of the land then process or extract that mineral in order to stabilize and optimize it.

While the manuscript sources for the **SYR** account can be firmly dated to an earlier time than those of the **SAN**, **C**, or **T** accounts, it is unlikely that any of these borrowed from it directly (although it was likely that **T** was directly inspired by **SAN**). I say this because of a number of significant divergences between the four versions. Why, for example, is the virgin maiden naked in **SYR** and clothed in **SAN**; and replaced by "strong men" in **C**? Why is the fluid entity's attraction amorous in **SAN** and **SYR**, but strictly chemical in **C**? Why do **SAN**

63. In this case we find the Syriac term *onko* that refers to 'tin'. This term, whose common meaning is 'tin', does not have any connection with Zeus: email communication from Matteo Martelli, September 17, 2015.

and **C** speak of the fluid entity's attempt to return to its source after pursuing its quarry for a specific distance, while **SYR** says nothing of the sort? Finally, why do **SAN** and **C** feature horses, when none are present in **SYR**?

For all this, their similarities far outweigh their differences. Clearly we are in the presence of cultural diffusion, of the adstratal transmission of a tradition across linguistic and cultural boundaries, in all probability via the same medieval trade routes as those over which mercury and other minerals were transported. It would appear that the original source of these four versions was located somewhere in western Asia. As has been noted, nearly every one of these alchemical accounts locates its well in a "western" locale. However, as I will argue, the geographical location of this primal mercurial source is largely irrelevant. These mercury extraction accounts are quite possibly variants on a complex and far more ancient, substratal mytheme, attested in detail in five different Indo-European sources dating from as early as 2000 B.C.E.. This complex proto-myth was extensively (although not exhaustively) treated by Georges Dumézil in part one of the third volume of his *Mythe et épopée*, in a study entitled "La Saison des Rivières" (1973).[64] Dumézil's findings were later summarized by Jaan Puhvel, in the "Fire in Water" chapter of his 1987 *Comparative Mythology*.[65] In the years that have followed, their data and conclusions have been further expanded by Heinrich Wagner,[66] Dominique Briquel,[67] Claude Sterckx,[68] Bernard Sergent,[69] and others.[70] The myths contained in that Indo-European dossier bear uncanny similarities to the alchemical accounts detailed above. Here I review the most important extant witnesses to the proto-myth, which appear in a) a set of Vedic hymns of praise to the god Apām Napāt; b) the Old Iranian mythology of the god Apąm Napāt; c) Roman accounts of the overflowing of the waters of the Alban Lake; d) the Irish mythology of Nechtan's well; and e) a Greek account of an Arcadian sanctuary dedicated to Poseidon.

a) In two Ṛg Vedic hymns (2.35 and 10.30),[71] a divine figure named Apā́m Napāt ("Descendant of the Waters") is related to horses (RV 2.35.1, 6) and possessed of igneous properties (2.35.4,11). The hymns link him to women in three ways: "three women goddesses" wish to provide him with food (2.35.5); he is "kindled by youthful women" (2.35.11); and he is described as "stretching himself out in the waters as if toward just 'made' (*kṛ́tā*) [=deflow-

64. Georges Dumézil, *Mythe et épopée*, 3 vols. (Paris: Gallimard, 1968–73), vol. 3, "Histoires romaines" (3d ed., 1981), 21–89.

65. Jaan Puhvel, *Comparative Mythology* (Baltimore: Johns Hopkins Univ. Press, 1987), 277–83.

66. Heinrich Wagner, "Origins of the Pagan Irish Religion," *Zeitschrift für celtische Philologie* 38 (1981): 1–28.

67. Dominique Briquel, "Sur un passage d'Hérodote: Prise de Babylone et prise de Véies," *Bulletin de l'Association Guillaume Budé* 3 (October 1981): 293–306.

68. Claude Sterckx, "Nûtons, Lûtons et dieux celtes," *Zeitschrift für celtische Philologie* 46 (1994): 39–79.

69. Bernard Sergent, "Maponos: la malediction," in *La magie, du monde babylonien au monde hellénistique*, vol. 1, ed. Alain Moreau and Jean-Claude Turpin (Montpéllier: Université de Montpéllier, 2000), 197–218; idem., "Maponos et Nechtan," in *Dieux des Celtes – Götter der Kelten – Gods of the Celts*, Charles-Marie Ternes and Hartmut Zinser (Luxembourg: Association européenne pour l'étude scientifique des religions, 2002)(=Études Luxembourgeoises d'Histoire & de Science des Religions 1), 81–97; and idem., *Le livre des dieux: Celtes et Grecs, II* (Paris: Payot, 2004), 475–81.

70. Several of the entries in *L'Eau et le feu dans les religions antiques*, ed. Gerard Capdeville (Paris: De Boccard, 2004) treat of this mytheme.

71. Edition: Barend A. van Nooten and Gary B. Holland, *Rigveda: A Metrically Restored Text with Introduction and Notes* (Cambridge, MA: Harvard Univ. Press, 1994), 133–34 and 494. Translation: Stephanie W. Jamison and Joel P. Brereton, *The Rigveda: The Earliest Religious Poetry of India*, 3 vols. (New York: Oxford Univ. Press, 2014), 1:452–54 and 3:1422–24.

ered] women" (*kṛ́tā ivópa hí prasarsré apsú*: 2.35.5c).[72] While this detail (together with Apā́m Napāt's equine connections) is evocative of Mercury's attraction to the equestrian menarcheal maiden as found in all of the **SAN** mercury extraction accounts, as well, perhaps as *[Z]ws*'s attraction to a naked virgin in the **SYR** account, they are far from identical. On the one hand, a "just deflowered woman" is the opposite of a virgin maiden, and on the other, it is the Descendant of the Waters who is the master of horses in the Vedic account, not a female equestrian. Furthermore, whereas in the Vedic account he is the descendant of a group of goddesses, in the alchemical account Mercury is the son (*sūta*) of his father Śiva.

b) The Vedic Apām Napāt's Iranian cognate—a deity whose name Apąm Napāt also means "Descendant of the Waters"—is glorified in a myth from the *Zamyād Yašt* of the Younger Avesta.[73] Here, the *xᵛarənah,* the luminous glory or majesty that haloes the head of Iran's divinely sanctioned Kayanid or Kavyan kings, has absconded from the royal person of the sacrilege Yima. That fallen glory, now become an object of contention between the cosmic forces of Good and Evil, withdraws to the waters of the Vourukaša Sea, where

> *ā.dim haθra haŋgəruuaiiaṭ / apąm napå auruuaṭ.aspō; /*
> *taδaca iziieiti / apąm napå auruuaṭ.aspō: /*
> *aētaṭ xᵛarənō haŋgrəfšāne/ yaṭ axᵛarətəm /*
> *bun<e> zraiiaŋhō gufrahe / bune jafranąm vairiianąm. /*
> [T]hen Apąm Napāt of swift horses reached for it, and in doing so, Apąm Napāt of swift horses urgently wishes (*iziieiti*), "I want to gain hold of this Glory (*hangrəfšāne xᵛarənō),* which is unappropriated, (lying) at the bottom of the abyssal sea, at the bottom of the deep lakes.[74]

This he does, following which Ahura Mazdā enjoins all mortals to strive after the same *xᵛarənah*, which is a source of abundance, fortitude, and martial valor.[75] The *Zamyād Yašt* next introduces a new antagonist, "the Turanian scoundrel [named] Fraŋrasiian," who sacrilegiously attempts to lay hold of the *xᵛarənah* for himself. Three times Fraŋrasiian throws off his clothes in his attempt to carry off the *xᵛarənah*, and three times he fails, with new outlets to the Vourukaša being created with each attempt.[76] The last of these, Lake Haētumant,[77] which continues to harbor the *xᵛarənah* down to the mythic present, feeds back into the Vourukaša, making that sea both the source and reservoir of all earthly watercourses.[78]

72. This is the interpretation of Hermann Oldenberg (*Ṛgveda: Textkritische und exegetische Noten*, Abhandlungen der Königlichen Gesellschaft der Wissenschaften zu Göttingen, Philologische-Historische Klasse, n.s. vol. 11 [Berlin: Weidmann, 1909; rpt. Nendeln, Liechtenstein: Kraus Reprint, 1970], 1:217) and, most recently, of Jamison and Brereton, *Rigveda*, 1:453. It should nonetheless be noted that there is no scholarly consensus on the meaning or form of *kṛ́tā*: for a summary of other interpretations of *kṛ́tā*, see Jamison's on-line commentary to her translation of this verse: http://rigvedacommentary.alc.ucla.edu/wp-content/uploads/2015/04/II-5–8–16.pdf.

73. The complete narrative appears in *Zamyād Yašt* 19.45–69. See Helmut Humbach and Pallan R. Ichaporia, *Zamyād Yasht: Yasht 19 of the Younger Avesta. Text, Translation and Commentary* (Wiesbaden: Harrassowitz Verlag, 1998), 126–43, and Almut Hintze, *Zamyād Yašt*: *Introduction, Avestan Text, Translation, Glossary* (Wiesbaden: Dr. Ludwig Reichert Verlag, 1994), 25–32.

74. 19.51, in Humbach and Ichaporia, *Zamyād Yasht*, 130–31. Humbach and Ichaporia note the change of tense in the clause introducing the direct discourse, but offer no explanation for it.

75. 19.53, ibid., 132.

76. 19.56–64, ibid.,135–40.

77. This is the Helmand River, which forms the border between Afghanistan and Iran: "Helmand River," *Encyclopedia Iranica*, vol. 12, fasc. 2, 170–76. On line at: http://www.iranicaonline.org/articles/helmand-river (accessed on August 11, 2015).

78. 19.66, with the commentary of Humbach and Ichaporia, *Zamyād Yasht*, 141. Cf. Puhvel, *Comparative Mythology*, 278–79.

c) A possibly cognate Roman myth, which Dumézil explored in particular depth, features Neptūnus, a god of the waters. Dumézil's primary focus was the prodigy of the Lacus Albanus, as recounted by six different Roman authors.[79] In spite of the Roman historicization of the myth, it is at bottom an account of a sacrilege perpetrated by Roman officials with respect to Jupiter Latiaris and what Dionysius of Halicarnassus termed the local deities (τοὺς κατέχοντας τὸν τόπον θεοὺς καὶ δαίμονας) of the Alban Lake.[80] The lake, a water-filled volcanic crater, suddenly overflows its banks, and its floodwaters threaten to engulf Rome itself. Both the Delphic oracle and an Etruscan diviner are called upon to interpret the will of the gods, concurring that Rome will fall to its enemies if the outflow is allowed to reach the sea. Following their counsel, the Romans are able to save their city through a lightning feat of hydraulic engineering, thanks to which the floodwaters are harmlessly channeled into the countryside through a network of canals and trenches.[81]

If only by virtue of his close identification with the highly hippic Greek Poseidon, about whom more shortly, Neptūnus was, like the Vedic Apām Napāt and the Avestan Apąm Napāt, a water god closely associated with horses.[82] Furthermore, as Dumézil has noted, certain features of his cult indicate that, more than merely a god of the waters, Neptūnus was "an active and violent force indwelling in the waters," a feature also related to the name of one of his female consorts, Salācia. While this water goddess's name is derived from the Latin *saliō*, to 'leap' or 'bound', its sense might also be illuminated by another derivative of the verb, the adjective *salax*, whose primary sense is "salacious." These etymological associations recall the behaviors of the (male) deities of the **SAN** and **SYR** mercury extraction accounts, as well, perhaps, as Apām Napāt's tendency to stretch himself out in the waters "as if toward just 'made' women."[83] But was there fire in Neptūnus's water? As Puhvel has noted, there was embedded in Livy's version of the prodigy a "formulaic petrifact . . . an ancient versified formula in the indigenous Saturnian meter" scripted by that historian into the Delphic oracle's pronouncement:

> *Romane, aquam Albanam cave lacu contineri,*
> *cave in mare manare suo flumine sinas.*
> *Emissam per agros rigabis dissipatamque*
> *rivis extingues.*[84]
> Roman, beware of keeping the Alban water confined in the lake,
> beware of letting it flow by its own stream into the sea.
> You should send it out through the fields to water them;
> you shall scatter it in channels and put it out.

The oracle's juxtaposition of the terms *aquam* and *extingues* brings us back to the igneous nature of the fluids in the reconstructed Indo-European proto-myth: the waters of the lake

79. Livy, Plutarch, Dionysius of Halicarnassus, Cicero, Valerius Maximus, and Zonaras: Puhvel, *Comparative Mythology*, 280.

80. Dumézil, *Mythe et épopée*, 3:50–51 (quoting Livy, *History of Rome* 5.16.9–5.17.3) and 59 (quoting Dionysius of Halicarnassus, *Roman Antiquities* 12.16).

81. Ibid., 49–50, 53–54.

82. Ibid., 40.

83. See above n. 72. On the etymology of Salācia's name, see A. Ernout and A. Meillet, *Dictionnaire étymologique de la langue latine: Histoire des mots*, 4th rev. ed. (Paris: Klincksieck, 1959), 590, s.v. *saliō*. See also Dumézil, *Mythe et épopée*, 3:41.

84. Livy, *History of Rome* 5.16.9–11, quoted in Jaan Puhvel, "Aquam Exstinguere," *Journal of Indo-European Studies* 1.3 (1973): 384.

must be "put out," extinguished. In Puhvel's words, the oracle's language is "a phraseological survival from the ritual of the Roman protomyth . . . originally indicating what to do when there was eruptive fiery water pouring forth and running amuck from Neptūnus's mythical lake."[85]

d) As Dumézil has argued, nearly all the elements of the proposed proto-myth reappear in an account, found in the ca. 1150 C.E. manuscript known as the "Rennes *Dindshenchas*,"[86] concerning the name and origin of Ireland's greatest river, the Boyne. Here Nechtan is the name of the infernal lord of a mound that encloses a "well of truth," a site of ritual ordeals.[87] However, Nechtan's mound is found in the house of another figure, named Elcmaire, whom the poem identifies as a "lord of horses."[88] Apart from Nechtan and his three cup-bearers, the poem tells us, any person who approaches his well suffers bursting of the eyes, due to a deadly source of heat or light in its depths. Either out of hubris or in order to absolve herself for having cuckolded her husband, a woman named Boand approaches the well "to make a trial of its power."[89] She circles it counterclockwise three times, upon which three waves rise from the well and break over her, severing a thigh, a hand, and an eye. The disfigured Boand flees with Nechtan's igneous fluids pursuing her, thereby creating a river in her wake, until she drowns in its estuary by the sea, some seventy miles away. This river (the Boyne), which bears her name, then takes a subterranean course, reemerging to give rise to many of the world's great rivers, all of which ultimately flow back into Nechtan's mound.[90]

e) In his circa 175 C.E. *Description of Greece* Pausanias speaks of a sanctuary dedicated to Poseidon at Mantineia, a site located in a landlocked Arcadian plain some thirty miles inland from the Aegean shoreline.[91] After describing the sanctuary's construction by Agamēdes and Trophōnios and their placement of a woolen thread across its entrance, Pausanias relates that a certain Aipytus, the son of Hippothous, entered the sanctuary by cutting through that thread. For this sacrilegious act, he was blinded by a wave (κῦμα) that dashed into his eyes and killed him. Pausanias concludes his account by evoking an old legend according to which the seawater that rises at Mantinea does so "through divine will" (κατὰ τοῦ θεοῦ γνώμην).[92]

Like the Roman Neptūnus and the Irish Nechtan, the Greek Poseidon was, from Mycenean times, a god of all waters—not only of the sea, but also of freshwater springs, and subterranean waters in general.[93] The sanctuary at Mantinea, which had a hippodrome located nearby, was dedicated to Poseidon Hippios, the "Equine Poseidon," making the name of the

85. Ibid., 385.

86. Transcribed and translated in Whitley Stokes, "The Prose Tales in the Rennes Dindshenchas," *Revue Celtique* 15 (1894): 315–16. A poetic work, known as the "Metrical *Dindshenchas*," contains additional detail on this episode. It has been translated in Edward Gwynn, "The Metrical Dindshenchas, III" (*Todd Lecture Series* 10)(1913): 27–32 ("Boand I) and 37–38 ("Boand II"). Online at: http://www.ucc.ie/celt/online/T106500C/ (accessed July 15, 2016).

87. Dumézil, *Mythe et épopée*, 3:30.

88. Gwynn, "The Metrical Dindshenchas," 38.

89. Ibid., 31.

90. Ibid., 29.

91. Viewed at https://www.google.com/maps/place/Mantineia (accessed October 7, 2015).

92. Edition and translation: Pausanias, *Description of Greece* 8.10.2–4, in *Pausanias Description of Greece*, vol. 3, ed. and tr. W. H. S. Jones (Loeb Classical Library, vol. 272; New York: G. P. Putnam's Sons, 1933), 392–93. Pausanias repeats this information in an abridged form at 8.5.5. Discussion: Wagner, "Origins," 17–22.

93. Ibid., 11; Dumézil, *Mythe et épopée*, 3:40.

sacrilegious Aipytos's father, Hippo-thous, something more than mere coincidence.[94] As Heinrich Wagner has argued, like the Roman Neptūnus, the Greek Poseidon gushes up out of his sanctuary as the result of a violation of its sacred precincts; like the Irish Nechtan, he takes the form of a wave that blinds and kills its perpetrator. However, there is no trace of fire in Poseidon's blinding and fatal waters.

4. IMPLICATIONS

A synoptic reading of these five narratives yields an Indo-European proto-myth comprised of the following mythemes:

> 1) A local deity, 2) whose name **nep(ō)t* means "Descendant (of the Waters),"[95] 3) is embodied as a fluid numinous being immersed in a body of water. 4) This deity is frequently associated with horses. He is 5) provoked by a sacrilegious act 6) committed by a man, (or men,) or a woman 7) who approaches or circles his abode. 8) After rushing upward from his basin, well, or depths, the 9) deity in his caustic, fiery, superheated, or volatile form 10) blinds, maims, and in some cases kills the sacrilegious individual(s)—or else he flees. 11) The advancing igneous fluid (deity) may be neutralized or drained off through channels, which in some cases redirect him/it back to his/its source.[96]

While we can be certain that the mercury extraction account was spread by cultural diffusion, the dynamic of transmission of this Indo-European proto-myth was of another order—what has been termed "monogenesis."[97] Here, a primordial myth, shared among the original speakers of the proto-Indo-European language living in their trans-Caucasian homeland some time prior to the third millennium B.C.E., would have been carried eastward and westward as those people migrated outward across Europe and much of Asia. In this case, transformations of the myth would not have been the result of adstratal transmission across cultural and language barriers, but rather the effects upon the substratal proto-myth of thousands of years of retelling, as well as of interactions between the custodians of this mythology and the non-Indo-European speakers with whom they cohabited or intermarried or whom they conquered.

With this, I believe we can draw a number of conclusions concerning the Sanskrit, Syriac, Chinese, and Tamil mercury extraction accounts with which I began this study. These are adstratal traditions that would have drawn upon a now lost version of an Indo-European proto-myth of "fire in water."

The ambiguous nature of mercury in the extraction accounts reproduces that of the Indo-European deity: he is at once a "son" (*sūta*, in **SAN**), a local divinity, and a volatile, molten fluid. Most interesting is the adaptation, in the **SAN** and **C** versions of the mercury extraction account, of the proto-myth's description of the return of the Indo-European divinity to his

94. Wagner, "Origins," 18. Also according to Pausanias (1.5.2 in Jones, vol. 1 [Loeb Classical Library, vol. 93, 1918], 24–25), Poseidon was himself the father of a certain Hippothoōn, whom he sired on Alope, the daughter of Kerkuonos.

95. This is manifestly the case for the Vedic Apām Napāt and the Avestan Apąm Napāt. As Dumézil argued (*Mythe et épopée*, 3:36–38), it may also apply to the Roman Neptūnus. Cf. Ernout and Meillet, *Dictionnaire*, 438, s.v. "Neptūnus": "Bien que la derivation de 'Neptūnus' ne s'explique pas par là, on ne peut s'empêcher de penser à l'importante figure religieuse indo-iranienne de véd. *apā́m nápāt*, av. *apąm napå* 'descendant des eaux' . . . le mot relèverait du vocabulaire religieux commun à l'indo-iranien et à l'italo-celtique."

96. My summary is adapted from that found in Puhvel, *Comparative Mythology*, 279.

97. Dumézil, *Mythe et épopée*, 3:35. Cf. *Mythe et épopée*, 2:78–80. In both places, he speaks of a "common heritage."

original dwelling place. In the former, when Mercury attempts to return to his well he is stymied by his capture in man-made hollows or well shafts. As we saw in the Iranian version of the proto-myth, the successive outflows provoked by the *xᵛarənah*'s flight carved out a series of new channels that looped the waters of the Vourukaša Sea back to their source, making it both the source and catchment basin of all earthly watercourses.[98] In the Irish narrative, the outflow from Nechtan's well that became the River Boyne then connected to the great rivers of the world via submarine channels, which also circled back to their source.[99] While the waters of the Alban Lake did not return to their source, the act of channeling was present, in this case through a feat of the hydraulic engineering for which the ancient Romans were so renowned. Here, the floodwaters were released through a system of canals and trenches that emptied into farmer's fields, an echo of which is found at the conclusion of the **SYR** mercury extraction account, when it identifies the fluid mercury with "river water . . . because it runs like the water that flows away in the fields."[100]

The most striking set of variations on a principal theme of both the Indo-European proto-myth and the mercury extraction accounts concerns the impetus, even motivation, behind the divinity's eruption from his underground abode. In the Irish source, the context appears to be one of ritual ordeal, of the testing of a wife's fidelity. In the Greek and Roman versions, the fatal waters rush up out of their basins to punish a sacrilegious act. This also appears to be the impulse behind the mercury that pursues Yakoppu in the **T** version of the mercury extraction account: the mercury assaults him when he attempts to lower a gourd pitcher into its well. In the balance of the mercury extraction accounts, the operative principal is one of attraction: purely chemical, in the **C** version, but erotic in the **SYR**, as well, perhaps, in the **SAN** versions. However, in this last case, the language also verges on the matrimonial: the menarcheal maiden's dress, finery, and equine mount all appear to indicate that she is inviting Mercury to marry her—even if that is but a ruse for capturing him. Here, the possible ancient Vedic reference to Apām Napāt as "stretching himself out in the waters as if toward just 'made' (*kṛ́tā*) [=deflowered] women" is highly evocative, as it seems to indicate the sort of sexual attraction found in the **SAN** and **SYR** narratives.

The Iranian version of the Indo-European proto-myth is exceptional inasmuch as it comprises three separate episodes. The first explains how the fiery *xᵛarənah* abandoned the sacrilege king Yima; the second how said *xᵛarənah* came into the possession of the divine Apąm Napāt who "urgently wishes" (*iziieiti*) to seize it; while the third describes its flight from a human usurper attempting to do the same.[101] Here it is also worth noting that Apąm Napāt*'s* statement "I want to gain hold" ([*han*]*grəfšāne*) is a present subjunctive form of the root √*grab*,[102] and thus a match for *jighṛkṣu*, the desiderative form of the Sanskrit root √*grah* (earlier √*grabh*, a direct cognate of the Iranian root), which I translated in the South Asian mercury extraction accounts as "wishing to take her hand in marriage [or to catch her]."

As for the Indo-European Descendant of the Waters' equine associations, these have been transferred, in the **SAN** and **C** versions of the mercury extraction account, to the persons who

98. See above n. 78.

99. See above n. 90. Another recension of the Boand narrative evokes the channeling of the waters of her river: Dumézil, *Mythe et épopée*, 3:70.

100. See also above n. 78.

101. As Humbach and Ichaporia (*Zamyād Yasht*, 15–18) note, the issue is complicated by the fact that there are two *xᵛarənah*s at play in the *Zamyād Yašt*. These are the Kavyan Glory (*kauuaiia xᵛarənah*) and the Unappropriated Glory (*axᵛarəta xᵛarənah*).

102. Humbach and Ichaporia, *Zamyād Yasht*, 182, s.v. √*grab*. See above n. 20.

approach his well—the equestrian maiden or the "strong men." At present, I am at a loss to explain the presence of the horse in the reconstructed proto-myth. Why would a deity embodied as fire in water have had such strong equine connections? Would the hippodrome at Poseidon's shrine in Mantinea be an indication that horse racing had a place in his cult? The Roman October Horse and the Vedic horse sacrifice do not appear to be relevant to this question.

At this point, I must bring my analysis down to earth—or, perhaps more accurately, up to the surface of the earth. If we accept Dumézil's theory of a common heritage for the Indo-European mythological corpus, then we must also allow that our proto-myth took shape or was poetically composed in a specific geographical location—the "Indo-European homeland" of the trans-Caucasus region north of the Black and Caspian Seas—where a specific geothermal phenomenon would have constituted what Mircea Eliade long ago referred to as a "hierophany," a manifestation, if not an eruption, of "the sacred" into profane existence. That remarkable presence, of a "fire" burning in the midst of a body of water, might have spurred some segment of the population of that place and time to innovate a body of ritual practice, together with a corresponding liturgy and mythology, constructed around unpredictable geothermal eruptions that occurred at that location. Then, as those proto-Indo-European speakers fanned deeper into the Asian and European continents in the centuries following 4000 B.C.E., they carried that local tradition with them, such that, whenever they came upon a similar geothermal site, their descendants would have recognized it as the same divine presence, a local instantiation of the original "Descendant of the Waters." There, they would have attached their portable myth with its attendant rituals to the geothermal divinity of the newly discovered site. These are, at least, the possible implications of the spread of the "fire in water" mytheme.

In his fifth- to sixth-century *Lexikon*, Hesychius of Alexandria defines the obscure Greek term νάπας as "an oil-producing well in the mountains of Persia":

Νάπας. ἡ κρήνη ἐπὶ τῶν ὀρῶν τῆς Περσίδος ἱστορεῖται, ἡ φέρουσα τὰ ἄφοδα[103]

Working from Hesychius's entry, Puhvel has suggested that "perhaps oil seepage and oil flares on the Caspian shores were not unknown to the Indo-European proto-habitat."[104] I believe one can go further still. With the exception of the Vedic account, every version of the Indo-European proto-myth is linked to a specific site and to the local deity of the site: Mantineia in Greece, the Alban Lake in Italy, the source of the River Boyne in Ireland, as well, perhaps, as the Helmand River in Afghanistan.[105] Mantinea in Greece is the site of a cavern from which "a stream strongly impregnated with salt gushes copiously . . . and flows in a large body into the sea."[106] Trinity Well in County Kildare is the source of the Boyne, Ireland's greatest river. The Lake Alban of Roman tradition is also a crater lake, and it bears

103. For (the unlikely) τὰ ἄφοδα Kurt Latte (*Hesychii Alexandrini lexicon*, vol. II; Copenhagen: E Munksgaard, 1966) conjectures τὴν ἄφθα, while the much earlier edition of Mauricius Schmidt (Jena: Sumptibus F. Maukii, 1868) suggests rather its equivalent, τὸ νάφθα. It is likely that Puhvel was working with the Schmidt edition, based on his comment ". . . judging from Greek *Nápas* (glossed by the lexicographer Hesychius as 'an oil producing well in the mountains of Persia') and the borrowed Greek term *náphtha* . . ." (*Comparative Mythology*, 279), but he gives no references. In either case it should be noted that the "oil" in "oil-producing" is based on a conjecture, though a plausible one.

104. Puhvel, *Comparative Mythology*, 279–80.

105. See above n. 77.

106. Sir James Frazer, ed. and tr., *Pausanias's Description of Greece*, 6 vols. (Cambridge: Cambridge University Press, 1898), 3:421.

noting that the "Dog Days" of summer, during which the overflowing of the lake is said to have occurred, were framed in the ancient Roman calendar between the Neptunalia (July 23) and Volcanalia (August 23) festivals.

With this, let us return to South Asia, and specifically to Hiṅglāj Devī, long regarded as the westernmost extension of the Hindu ecumene as well as the cult site of a local "Red Goddess" whose name may be construed as 'She Who Was Born from Red Cinnabar' (*hiṅgula-jā*), the prime mercurial ore.[107] Her name is also related to that of the river (today called the Hingol) that flows by the shrine, a site that draws Hindu pilgrims—and recently, since the opening of a modern highway through the region, Pakistani tourists—to what was formerly an extremely remote and inaccessible spot. This opening of the Makran Coast has, over the past two years, generated a wealth of Internet postings of photographs of the Hiṅglāj Devī shrine and other sites of interest. These generally confirm the data found in Persian and British travel accounts dating from the first decades of the nineteenth century.

Travelers' descriptions of the region also mentioned Candrakūp, the "Moon Well" referred to at the beginning of this study. None has described the site more richly than a 1978 Hindi-language travelogue by Devadatt Shastri titled *Āgneyatīrth Hiṅglāj* ("Hiṅglāj, Pilgrimage to Fire"). Shastri, whose journey was undertaken in the old-fashioned way (a camel caravan lasting forty-five days from Karachi to Hiṅglāj and Chandrakūp, and back), speaks of Chandrakūp in the following terms. It is a terrifying three hundred foot-tall mountain that constantly boils and belches superheated mud, and into whose sludge (*kīcaḍ*) pilgrims offer chunks of country bread (*roṭ*), coconuts, and chillum pipes packed with marijuana. These offerings[108] are made to pacify the temperamental Bhagavān Candrakūp ("Almighty Lord Moon Well")—or more familiarly, "Candrakūp Bābā" ("Father Moon Well")—as well as offerings for the absolution of sins.[109] Elsewhere, Shastri cryptically notes that "although it was called a fire pit, no fire burned there,"[110] and less cryptically that "there was not the slightest whiff of the divine in Moon Well; rather, it appeared to be a massive demon."[111]

In fact, Candrakūp is not a well: rather, it the world's highest mud volcano.[112] The word *kūp*[*a*] here does not mean 'well', but rather 'crater', and as such Candrakūp is an alloform of the Italian Lake Alban. Thus, the pilgrimage to Candrakūp instantiates a living tradition of an ancient hierophany: a superheated fluid that, dwelling in a "well" or crater, is venerated as a fearsome local deity, who makes his presence—and his mood—known when he boils up to the surface. Candrakūp may also be the actual site of the **SAN** accounts of Mercury, whose "perfectly rounded well" is situated in the western land of the Pāradas on the Makran Coast.

107. James Hastings, ed., *Encyclopedia of Religion and Ethics*, 13 vols. (New York: Charles Scribner's Sons, 1914), 6:715, s.v. Hinglāj (entry written by William Crooke). A new and highly suggestive article on Hiṅglāj Devī, which only came to my attention when this article was in its final stages of pre-publication, is Francesco Brighenti, "A 'Sulfurous' Śakti: The Worship of Goddess Hiṅgulā in Baluchistan," in Fabrizio M. Ferrari and Thomas Dähnhardt, eds., *Soulless Matter, Seats of Energy. Metals, Gems and Minerals in South Asian Traditions* (Sheffield, UK: Equinox, 2016), 28–50.

108. Devadatt Shastri, *Āgneyatīrth Hiṅglāj* (Mumbai: Lokalok, 1978), 45: *devatā ko bhog arpit kartā rahā*.

109. Ibid., 45.

110. Ibid., 44: *use agnikuṇḍ kaheṃ to āg nahīṃ jaltī thī*.

111. Ibid., 44: *candrakūp meṃ devatvakā leś nahīṃ wah to mahādānav-sā pratīt ho rahā thā*.

112. Bashir Osman's outstanding photomontage of the Candrakūp crater and its associated pilgrimage may be viewed on line at:
http://www.gettyimages.com/search/more-like-this/536199579?excludenudity=true&family=creative&photographer=bashir%20osman%27s%20photography&sort=best#license. Accessed March 3, 2017.

As it happens, traces of mercury naturally occur at sites of geothermal activity. The *Shorter Oxford Economic Atlas* notes that "almost all the world's mercury is obtained from the red sulphide mineral cinnabar, HgS, but a little of the metal occurs naturally as small globules associated with cinnabar in certain rocks in the neighborhood of old volcanic regions where the minerals were deposited from hot aqueous solutions during volcanic activity. Many hot springs in such regions are still depositing some cinnabar." Even in places like South Asia, where no mines of mercury were to be found, trace quantities of the "Champion of Minerals" could be extracted from the land around geysers, hot springs, volcanoes, and sites where underground superheated fluids, "fire in water," boiled up to the surface.[113] As such, the medieval mercury extraction accounts, whose mythology drew upon a far more ancient Indo-European proto-myth, also had a basis in ancient scientific knowledge.

113. *Shorter Oxford Economic Atlas of the World*, 2d ed. (London: Oxford Univ. Press, 1959), 88. Cf. Pattelli et al., "Effects," 244. Interestingly, the mercury-rich area surveyed in this study of central Italy is located slightly to the north of Lake Alban and its surrounding region of extinct volcanic craters.