Planetary Awareness in Adelbert von Chamisso

> Cast out from human society because of my early trespasses, I had been sent back to nature, the realm I have always cherished; the earth had been given me as a fertile garden to tend, the study of which was henceforth to be the direction and motivating force of my life, a life wholly devoted to science (*Peter Schlemihl*)

ABSTRACT

The critical reception of Adelbert von Chamisso's work, best known for *Peter Schlemihl*, has recently started to draw attention to his importance as a naturalist and botanist. His participation in the Rurik expedition between 1815–18 can be viewed through categories of the global, as it cannot be extricated from colonial politics and attempts to forge economic networks. The following argument reads Chamisso's later account of this journey, *Reise um die Welt* instead through the lens of the planetary. This reveals how his text is replete with metacritical observations about the production of scientific knowledge and is shot through with a keen awareness of the fragility of humankind in its imbrication with the non-human world. Whilst Chamisso may not represent a radical or revolutionary position vis-à-vis scientific practices and discourses, *Reise um die Welt* opens up the question of how to legitimately gather knowledge -- as well as the epistemological uncertainty brought forth by scientific habits of thought.

Keywords: Adelbert von Chamisso, global voyages, scientific practices, aesthetics of the sublime, the planetary turn

I. Botanizing the Globe

Of all Romantic writers, Adelbert von Chamisso has the unusual honor that his most canonical work happened to anticipate his own biography. The concluding chapters of *Peter Schlemihls wundersame Geschichte* (1814) stage a series of botanical peregrinations. In the

first edition, these take place primarily across the breadth of the African continent, while in the revised edition, Schlemihl traverses the globe. The magical seven-league-boots may suggest a compression of scale that would allow Schlemihl an appreciation of the totality of the planet. Yet Chamisso refrains from indulging in a fantasy of scientific omnipotence and omniscience. Instead, the titular naturalist is thwarted in his travels, and with that, so too is his completionist impulse to systematize botanical knowledge:

> Ich verfolgte durch beide Amerika die Bergkette, die die höchsten Unebenheiten unserer Kugel in sich faßt. […] ich versuchte, selbst oft mit Gefahr, und dennoch immer vergebens, mir über die kleinern Inseln und Felsen, wovon dieses Meer starrt, einen Übergang […] zu bahnen. […] Das merkwürdige, zum Verständnis der Erde und ihres sonnengewirkten Kleides, der Pflanzen- und Tierwelt, so wesentlich notwendige Neuholland und die Südsee mit ihren Zoophyten-Inseln waren mir untersagt, und so war, im Ursprunge schon, alles, was ich sammeln und erbauen sollte, bloßes Fragment zu bleiben verdammt. (Chamisso 1: 61–62)
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> I followed the mountain chain with the highest known elevations on earth through both Americas. […] I attempted repeatedly, at considerable risk, though always unsuccessfully, to ford across the smaller islands and promontories that speak the sea in these parts […] New Holland, that remarkable place, and the South Sea islands, whose sun-bathed cloak of flora and fauna are so essential to a complete picture of the earth's life forms, would be forever off-limits to me, and thus, in essence, all that I could possibly collect and comment upon was doomed to remain a mere fragment of the whole. (*Peter Schlemiel* 80–81)

Schlemihl's path proves to be fragile, too. It is brought to a premature and bathetic end through an accidental plunge into the ocean. This closing section of *Peter Schlemihls*

wundersame Geschichte inadvertently points forward into biography, including in the specific mention of the South Sea islands. Chamisso himself would go on to embark on his own voyage as the resident botanist onboard the Rurik between 1815 and 1818. The Rurik was a modestly sized Russian two-mast ship that undertook an expedition to discover a route through the Northwest Passage via the Bering Strait. It ranks as one of the most significant of the approximately thirty Russian expeditions that sailed from the Baltic to the Pacific in the early nineteenth century (Williams 236). Funded by the Russian statesman Nicolai Petrovich Rumyantsev with the support of Tsar Alexander I, the ship included a crew of German naturalists, with Otto von Kotzebue, the son of August von Kotzebue, assuming its command (Görbert 99). The expedition had a clear colonial and commercial aim to further Russia's interests in the region, particularly in the fur trade, and in securing Alaska against other colonial powers.

Whilst the expedition did not achieve its stated goal, it proved important for the production of botanical, cartographical, and ethnographic knowledge. Chamisso's accounts of the journey have thus far been primarily viewed in Anglophone German Studies through the lens of its colonial critique. Others have deployed the important analytical construct of transculturality to understand Chamisso's accounts, and attention has been paid as well to his linguistic studies of Hawaiian and Polynesian languages (Weinstein 380–81; Oksiloff 108; Zhang 46–47). Privileging the intercultural and ethnographic commentary in Chamisso's accounts, whilst doubtless productive, nonetheless risks obscuring the significance of the scientific observations made in these texts. I will focus here on one account in particular – Chamisso's diaristic *Reise um die Welt mit der Romanzoffischen Entdeckungs-Expedition in den Jahren 1815–18* (1835), which offers the most consistent commentary on how scientific knowledge is generated. In this context, it is significant that Chamisso also embarked on the voyage with the express aim of making a name for himself as a naturalist. This did not escape comment

among his peers. Art pre-empting life is central to E. T. A. Hoffmann's response to the voyage. In his sketch of Chamisso's circumnavigation of the world, Hoffmann, a friend of Chamisso's, playfully alluded to the identification of Peter Schlemihl with his creator. In this, Chamisso's ship, with a "Schlemihl for ever" flag on its prow, is cheerily greeted by the personification of the North Pole (Dickson 343–44).

Looking at Chamisso's accounts of the voyage with specific attention to his self-presentation as a scientist will allow for a nuanced account of the process of gathering scientific knowledge, practices that are not necessarily reducible to the categories of extraction or domination that may be suggested by the colonial aims of the voyage. In the following, I wish to closely read the scientific observations contained in Chamisso's account of the voyage through the lens of the recent planetary turn, which in part focuses on the human as creaturely life rather than possessing elect authority over the earth (Chakrabarty 90). Chamisso's self-presentation is far from that of a self-confident scientist. Instead, Chamisso's account of his travels continually manifest a tension between naturalist practices, such collecting and ordering, and the awareness of embodied, human vulnerability. In addition, his metacritical reflections on scientific observations problematize how knowledge is produced and consistently open up a sense of how intractable the planet is to human intellect. I will proceed by introducing Chamisso's self-critical observations on scientific practices in his poetry. In a second step, I ask what is gained by perceiving Chamisso's accounts of his voyage through the planetary turn. The final and most substantial section examines his third and final account of the voyage – the *Reise um die Welt* – in detail, with particular attention given to Chamisso's reflections on the positionality and aesthetic biases of the scientific observer. Looking at Chamisso in planetary terms, I argue, brings sustained attention to the narrative strategies used to discuss scientific ways of knowing. To be sure, it may be a well-known function of travel literature to familiarize the reader with the unknown. Yet there is a specific

advantage to proceeding in planetary terms: it brings into focus Chamisso's metacritical examination of how knowledge is produced (Eldridge 165).

Chamisso's scientific endeavors were undoubtedly pursued with forthright ambition, yet his commentary on his own practices is partly colored by doubt. The poem "Aus der Beeringstraße," composed during the voyage of the Rurik in the summer of 1816, questions what the meaning of the naturalist's taxonomies might be with a distinct note of self-abnegating skepticism. The awareness of scalar oscillations between the individual human and the vast sea- and landscape, which threaten to empty human endeavor of meaning, belie such skepticism. In a tone of melancholic introspection, Chamisso makes neat use of the tropes of life as *navigatio* and the pathetic fallacy to convey the speaker's mental desiccation, which verges on *acedia*:

> Das tat ich sonst, das tu ich annoch heute
>
> Ich pflücke Blumen und ich sammle Heu;
>
> Botanisieren nennen das die Leute,
>
> Und anders es zu nennen trag ich Scheu;
>
> So schweift das Menschenkind nach trockner Beute
>
> Das Leben und die Welt hindurch, die Reu
>
> Ereilet ihn, und, wie er rückwärts schaut,
>
> Der Abend sinkt, das Haar ist schon ergraut.
>
> So, Bruder, schaudert's mich auf irrer Bahn,
>
> Wann düstre Nebel ruhn auf trübem Meer;

Beeiste Felsen ruf ich liebend an,

Die kalten Massen widerhallen leer

That I did otherwise, and I do so today,
I pluck flowers and collect hay,
People call this “botanizing”
Too shy I am to call it anything else;
Thus the child of man roams for dry plunder,
Through all life and the world, regret
Befalls him, and, as he casts his eye back,
The evening dims, his hair already grey.

So, brother, I shudder on this false path,
When dreary mists rest on a gloomy sea,
I call out, in affection, to icy cliffs,
The cold masses give out but an empty echo (Chamisso 1: 145–146)

Here, Chamisso effectively marshals the standard *topoi* of lyric poetry to depict a projection of an emotional landscape. Equally, “Aus der Beeringstraße” also recalls *Peter Schlemihl* in its play with scale. What is missing, by comparison, is Schlemihl’s unbridled ambition (Nitschke 234). In particular, there is a keen sense of the naturalist being absorbed within, and conditioned by, overwhelming telluric forces. The physical vulnerability of the speaker parallels their mental torpor. What remains a lacuna, or a moment of skeptical *epochē*, are what the fruits of botanizing might be – that is, the acts of collecting and preserving dried

samples of plants. To be sure, Chamisso's botanizing, rhetorically cast in modest terms in the poem, was of considerable scientific significance. It consisted of an eventual herbarium of some 60,000 samples (Glaubrecht 529–32; Beidleman 51–53). In addition, Chamisso made a notable zoological discovery over the course of the voyage: that the life cycle of salps involves an alternation of sexual and asexual generations (Glaubrecht and Dohle). The relative value of Chamisso's discoveries may be beyond doubt, but "Aus der Beeringstraße" equally opens up the potential for a metacritical approach to scientific knowledge. How scientific knowledge might be gathered was an acute question in a period where scientific methods were yet to be formalized or fixed in distinct disciplines. In particular, botanizing was a middle-class social practice and still in the process of being professionalized (see Mücke; Rüppel). To return briefly to the parallel with Peter Schlemihl: Schlemihl's frustration at the failure of his botanical systematizing aligns with a triumphalist cultural imagery of the "politico-epistemological project of mapping, measuring and mastering" (Radisoglou and Schaub 126). By contrast, Chamisso's own reflections on the project of scientific sense-making call into question any claim of human mastery or domination over the planet.[i]

It is this tension between the politico-epistemological project of the Rurik expedition and the keen awareness of potential failures in gathering scientific knowledge that informs Chamisso's *Reise um die Welt*. Despite the canonical status of *Peter Schlemihl* and the historical importance of Chamisso as botanist, Chamisso still cuts a rather neglected figure in literary Romanticism. He ranks as one of a number of popular poets who otherwise remains little read when compared to contemporaries such as Hoffmann or Brentano (Osterkamp 31). It is only recently that Chamisso's voyage around the world has become the subject of sustained scholarly attention. This has been aided, in part, by the bicentenary of both *Peter Schlemihl* and the voyage itself. Philological work, too, has been undertaken with the aim of

making Chamisso's *Nachlass*, held in the Staatsbibliothek in Berlin, more broadly accessible, including in digital form (Erhart and Sproll 8–9). I wish to draw on this current strand of research on Chamisso, spanning both literary studies and the history of science, and which focuses on his activities as a botanist during the three-year voyage. Such scholarship casts Chamisso as the self-consciously late, even epigonal, global circumnavigator. He was the last to write up the narrative of his journey after the travels of Georg Forster and Alexander von Humboldt (Berbig et al; Erhart; Drews et al). With a view to the planetary turn, it must be stressed that Chamisso's scientific practice, whilst of historical significance (Maaß; Federhofer), does not stretch far beyond humanist considerations. Nor should it be considered methodologically radical for his time, as an oft-quoted passage in *Reise um die Welt* helps elucidate:

> Ich habe wohl in meinem Leben Märchen geschrieben, aber ich hüte mich, in der Wissenschaft die Phantasie über das Wahrgenommene hinaus schweifen zu lassen. Ich kann in einer Natur, wie die der Metamorphosler sein soll, geistig keine Ruhe gewinnen. Beständigkeit müssen die Gattungen und Arten haben, oder es gibt keine. […] – Ich sehe in meinen Algen nur einen Spaerococcus, der auf einer Conferva gewachsen ist, nicht etwa wie die Mistel auf einem Baume wächst, nein, wie ein Moos oder eine Flechte.
>
> I have indeed written fairy tales in my life, but, in science, I take care not to allowing my imagination to drift beyond what I can perceive. I cannot find any peace of mind in the metamorphosist's understanding of nature. Genera and species must be constant, otherwise they do not exist. […] – In my algae I only see *sphaerococcus* that has grown on *conferva*, not, for example, like mistletoe growing on a tree, no, rather more like moss or lichen (Chamisso 2: 243)

Chamisso's recourse to the fixity of Linnaean taxonomic ranks, a staunch *apologia* for both *historia naturalis* and the *systema naturae*, might be – somewhat uncharitably – brought in line with the early modern scientific worldview that is the object of critique by Bruno Latour. That is to say: Chamisso's move to fix genera and species risks stripping the natural world of both historicity and narrativity. Equally, Chamisso falls foul of linear chains of causality that occlude a more nuanced understanding of reciprocal forms of agency within the natural world (Latour 71–72). Latour's broad characterization risks giving a reductively negative take on Chamisso; once resituated within its own context, however, Chamisso can be seen to adopt a strictly empiricist position that significantly differentiates his scientific self-understanding from strains of Romantic *Naturphilosophie* and Lamarckian evolutionary thought (Bangert 602–03; Sproll 152). His *Reise um die Welt* is both evidence of and is concerned with competing scientific discourses and paradigms. Moreover, Chamisso shies away from the synthesizing style of *Naturgemälde* familiar from Humboldt's accounts of his scientific travels – and of the kind made famous in his ecology in *Ansichten der Natur* from 1808 (Nassar 216–17, Schönberg and Holmes 382). Instead, Chamisso's account of his voyages is not concerned with expressly theorizing the aesthetic depiction of the natural world. Instead, it offers a certain generic instability, intermixing a personalized narrative mode with positivist detail more in line with the objective Otto von Kotzebue's official report of the voyage, first published in 1821.

II. Chamisso and the Planetary

Over and above the more formal and scientific parameters in which Chamisso operates, the account of his voyage round the world between 1815 and 1818 offers a somewhat unlikely candidate for planetary thinking. The focus is less on scientific practices than it is on intercultural encounters and complex political dealings, including on Hawaii. Chamisso also inserts asides on how concepts of civilization are mediated through intersecting lines of

commerce and economic production. Thinking about Chamisso in planetary terms appears, at first glance, rather misplaced, if not downright misguided. The features listed above would very much fall under the scope of the global, from which planetary thinking takes its point of departure, and from which it differentiates itself (Spivak 338).[ii] This focus on the global also goes some way to explaining why previous scholarship has privileged analyses of intercultural encounters in Chamisso over natural phenomena. A similar binary is also present in scholarship on Humboldt (Schaumann 104).[iii] Yet paying attention to the potential of planetary awareness in Chamisso's account – here, I will concentrate, albeit with one exception, on the *Reise um die Welt* – exposes a category of relationality. Relationality, in Amy J. Elias' and Christian Moraru's suggestive reading, is part of the heuristics of the planetary:

> planetarity opens itself […] to the nonhuman, the organic, and the inorganic in all of their richness. Informed by an ecocritical perspective, it affirms the planet as both a biophysical and a new cultural base for human flourishing. Accordingly, planetarization and its outcome, planetarity, trace a three-layered process whereby (1) the earth *qua* material planet becomes visible to theory and its abstractions as the non-negotiable ecological ground for human and nonhuman life; (2) individuals and societies of the earth as cosmo-polis heed an imperative to "worlding," that is, the creation of an ethical, "diversal," and relational ensemble so as to guarantee the survival of all species; and (3) the phenomenal earth seeps into our conceptual elaborations and ways of seeing the world, thus refounding our interpretative categories, our aesthetics, and our cultural lives (Elias and Moraru xxiii)

Concepts of the planetary and planetarity are intentionally proposed to be fluid, capacious, and exploratory (Elias and Moraru xxv). But they can offer a productive lens through which to re-read historical texts alongside thinking through the present-day challenges posed by

climate change. As Bruno Latour notes, recent discussions of ecology exist in a "strange reflexive loop" that find echoes in early criticisms of the industrial revolution (Latour 137). Alongside its ethnographic observations, Chamisso's *Reise um die Welt* is shot through with a consciousness of the planet in its shifting biological and geological processes. Chamisso's planetary impulse, as it were, is not transformative. Rather, it involves drawing attention to how the scientist-as-subject is embedded in the phenomenal world. Planetary awareness finds expression, too, in reflexive self-consciousness about scientific ways of perceiving and interpreting the natural world. It is therefore a more modest mode of the planetary that can be located in Chamisso – not one that purports to revolutionize interpretative, cultural, or aesthetic categories, but that nonetheless offers a more grounded point of departure for epistemic critique.

Before turning to this account in greater detail, it is worth briefly elaborating on the textual complexity of Chamisso's three accounts of his voyage on the Rurik. Such a brief philological excursion points to the shifting narrative modes and models of subjectivity across these texts. The original diaries and notebooks Chamisso composed during the voyage have only recently been published as an edited scholarly edition (Sproll et al vol. 1). These are also integrated, in part, in Chamisso's scientific account of the voyage – the *Bemerkungen und Ansichten auf einer Entdeckungs-Reise*, which was itself originally published in truncated form as the third volume of the official voyage report in 1821. The *Bemerkungen und Ansichten* detail, in a series of essays, the cartographic, ethnographic, botanical, zoological, and meteorological knowledge gathered during the voyage. Stylistically speaking, Chamisso tends to retreat into a generalized and depersonalized subjectivity of the European scientific observer who synthesizes knowledge through comparing phenomena across the globe (Peters 287–89). The final and most well-known account by Chamisso, the *Reise um die Welt*, was published as part of an edition of his collected works in 1835. When compared

to the flatter, lapidary, tone of the *Bemerkungen und Ansichten*, Chamisso's popularizing style in *Reise um die Welt* consciously foregrounds his authorial presence. This is especially evident in in its paratexts, which contain a programmatic gesture towards its own intended reception aesthetics:

> Ich habe schon oft Gelegenheit gehabt, jüngeren Freunden einen Rat zu erteilen, den noch keiner befolgen mochte. Ich würde, sagte ich ihnen, wenn ich von einer wissenschaftlichen Reise zurückkehrte, über die ich berichten müßte, in der Erzählung derselben den Gelehrten ganz verleugnen und nur das fremde Land und die fremden Menschen, oder vielmehr nur mich selbst in der fremden Umgebung dem teilnehmenden Leser zu vergegenwärtigen trachten; und entspräche der Erfolg dem Willen, so müßte sich jeder mit mir hinträumen, wo eben uns die Reise hinführte.
>
> I have often had the opportunity of giving younger friends of mine counsel that none might wish to follow. I would, I told them, if I were to return from a scientific voyage for which I must provide a report, deny my status as a learned scientist in my account of it, and would endeavor to allow the active reader to visualize nothing but the foreign lands, and the people of these lands, or rather only myself in those foreign surroundings. If my intention were to be successfully realized, then every reader would daydream along with me, wherever the journey may lead us. (Chamisso 2: 8)

Chamisso's claim, couched in expected terms of *humilitas*, to be able to simply divest a popular or literary travel account of scientific content is perhaps dubious at best. Indeed, all three of his accounts of the voyage can be best characterized as formal composites. *Reise um die Welt,* for example, reformulates extracts from his letters to his friend Hitzig written during the voyage. Yet foregrounding a subjective persona is particularly useful for the present analysis, and in the following I will offer close readings from such sections of the *Reise um*

die Welt. What Chamisso's popularizing style brings to the fore is, on the one hand, a phenomenological account of scientific practices of collecting and preserving botanical and biological samples. On the other hand, *Reise um die Welt* opens up narrative space for how an individual might relate to the more than – and indeed greater than – human world that surrounds it. In short, Chamisso offers a metacritical and self-reflexive account of scientific practices of observation, description, and collecting. To be sure, Chamisso upholds a firm distinction between the human and animal. He grants a certain Aristotelean exceptionalism to the human being as an intellectual animal. This stands in tension with moments in the account that highlight the vulnerability of humankind when subject to the vicissitudes of natural forces.

III. From the Limitless Ocean to Exotic Sublime

Reise um die Welt explores the question of how the individual scientist relates to the surrounding world through shifts between terrestrial and oceanic spaces. The focus on successful cross-cultural communication in Chamisso in previous scholarship privileges the terrestrial elements of the voyage – and indeed situates Chamisso as an heir to Georg Forster's cosmopolitanism in the South Seas. Forster, too, is present in the intertextual allusion in its title (May 18). Yet Chamisso also attends to body of the ocean throughout. Historically, this proved by far the most disruptive force, since the voyage was thwarted by a major storm in April 1817 which injured both Kotzebue and Chamisso. In addition, impassable sea ice rendered further exploration of the Northwest Passage unfeasible. By looking again at the *Reise um die Welt,* Chamisso presents the ocean as an ambivalent space – both a source of wonder and of arbitrary destruction – that necessarily circumvents anthropocentric habits of thought (Schluter, 147–48). For Chamisso, the ocean harbors both the wonders of natural phenomena, such as maritime bioluminescence, but also a threateningly elastic sense of its limitlessness. In an opening description of the voyage upon

joining the Rurik at Copenhagen, Chamisso alludes, in a tone of relaxed amusement, to the oscillations in scale that suspend the brig in isolation:

> Es ist hier der Ort, von der abgesonderten kleinen Welt, zu der ich nun gehörte, und von der Nußschale, in der eingepreßt und eingeschlossen sie drei Jahre lang durch die Räume des Ozeans geschaukelt zu werden bestimmt war, eine vorläufige Kenntnis zu geben. Das Schiff ist die Heimat des Seefahrers; bei solcher Entdeckungsreise schwebt es über zwei Drittel der Zeit in völliger Abgeschiedenheit zwischen der Bläue des Meeres und der Bläue des Himmels
>
> This is the place to take a moment to consider the isolated, tiny world, that I now belonged to, and the nutshell that this world was pressed and locked into, and that was destined to be rocked back and forth through the oceanic realms for three years. The ship is seafarer's home on such a voyage of discovery, and for two thirds of the that time it floats in complete isolation between the blue of the sea and the blue of the heavens (Chamisso 2: 20)

This introductory passage juxtaposes the deracinating effect of the ocean with the spatial compression on the ship. The account does not substantively explore this thought further. Later, during the cross-Pacific voyage from Chile to the Kamchatka peninsula in Russia, Chamisso attests that there was no spatial disorientation engendered by the blank space of the ocean, devoid of sea traffic, seabirds, and even islands purported to exist (Kotzebue had, at this point in the voyage, elected to avoid standard shipping routes to conduct a hydrographic survey). But the question of scale remains of interest to Chamisso. For example, he expressly interrogates scale within the framework of scientific habits of thought that would conventionally proceed by analogy and comparison (Müller 76). Specifically, Chamisso chafes against the limits of empiricism in interpreting natural phenomena when approaching,

via Tenerife, the Southern hemisphere for the first time in the Atlantic. In the following, a certain interpretative modesty characterizes Chamisso's claims about the positionality of the scientist. The passage highlights the difficulty brought forth by the dialectical movements of such comparative analysis:

> Man möchte erwarten, daß auf Reisende, die aus einer nordischen Natur unmittelbar in eine südliche versetzt werden, der unvermittelte Gegensatz mit gleichsam märchenhaftem Reiz einwirken müsse. Dem ist aber nicht also. Die Reihe der im Norden empfangenen Eindrücke liegt völlig abgeschlossen hinter uns; eine neue Reihe anderer Eindrücke beginnt, die, von jener ganz abgesondert, durch nichts mit ihr in Verbindung gesetzt wird. Die Zwischenglieder welche beide Endglieder zu einer Kette, beide Gruppen zu einem Bilde vereinigen würden, fehlen eben zu einem Gesamteindruck.
>
> One might expect that the unmediated opposition between North and South must have a virtually magical effect on travelers who move straight from one hemisphere to the other. But this is not the case. The series of impressions that can be experienced in the north have been completely left, secluded, behind us; a new series of impressions begins, entirely segregated from the former, and which cannot be connected to them in any way. The intermediate stages which would unite the final links to form a causal chain, and would unite both groups in one image, are precisely the aspects that are lacking which would create an impression in its entirety. (Chamisso 2: 40)

Any posited Archimedean point, a totalizing view from without, is nothing but a chimera for Chamisso. Such a totalizing view would do without the conditions of subjectivity and would allow for a perfect, synthesizing impression. As he goes on to elaborate, his skepticism is informed by what might be termed the problem of familiarity's aesthetic bias:

Wenn wir nach unserm Winter die Bäume langsam zögernd knospen gesehen und sie auf einmal nach einem warmen Regen Blüten entfalten und Blätter, und der Frühling erscheint in seiner Pracht, – dann schwelgen wir in dem Märchen, das die Natur uns erzählt. Wenn wir in unsern Alpen von der Region der Saaten durch die der Laub- und Nadelwälder und die der Triften zu den Schneegipfeln hinan- und von diesen wiederum in die fruchtbaren Täler herabsteigen, haben die Verwandlungen, die wir schauen, für uns einen Reiz, dessen der Gegensatz der verschiedenen Naturen entbehrt, welchen uns das Schiff entgegenführt. […] Ich füge erläuternd eine andere Beobachtung hinzu: Wir können auf einem hohen Standpunkt schwindlig werden, wenn unser Blick an der Mauer des Turmes oder an Zwischengegenständen in die Tiefe unter uns hinabgleitet; der Luftschiffer aber mag auf die Erde unterwärts blicken, er ist dem Schwindel nicht ausgesetzt.

When we start to see trees slowly beginning to bud after the winter and when, all of a sudden, the leaves and blossoms unfurl after warm rain, and spring appears in all its majesty – then we are indulging in the fairy tale that nature is telling us. When we roam in our Alpine regions from fielded areas onward to those with deciduous and pine forests, and on to the meadows, up to the snowy peaks, and then back again into the lush valleys, then the transformations we see on the way have an appeal for us which the opposition between the different natural landscapes over the course of the voyage does not have. […] By way of explanation, I would like to add a further observation. When standing at a great height, we can become faint when our gaze is cast downwards, along the wall of a tower or along any objects in-between, into the depths below us; the aeronaut, however, may look down on earth from above, but they would not succumb to feeling faint (Chamisso 2: 40)

At stake for Chamisso is the impossibility of a systemizing mode of scientific knowledge production. To bolster his argument rhetorically, he deploys dense lyricism. Even if there were perceptible continuities between the hemispheres, Chamisso closes down any overhasty claim of absolute knowledge in both similes. His metacritical understanding is bound up with an understanding of the relational, culturally contingent imaginary of the observer. By emphasizing positionality, Chamisso's text contains the incipient suggestion that knowledge production must necessarily be pluralistic, perhaps even fragmented. To be sure, his *Reise um die Welt* has its own strategy of legitimation by entering into dialogue with other scientific authorities, as I will detail below. Equally, Chamisso's other accounts consciously interweave different modes of knowledge and their correspondent positionalities. In his *Bemerkungen and Ansichten*, for example, he includes commentary from Kadu of Ulea in the Caroline Islands, who spent seven months on the Rurik, becoming a good friend of Chamisso's. In the section above, Chamisso's awareness of the scientist's positionality is coupled with a certain *aporia*, in a rhetorical sense, of what observation can do and what its limits might be. This is epitomized by the concluding simile of the aeronaut, as an ostensibly objective observer who would lack the insights generated by the subjective, affective attachment to Alpine or mountain landscapes in the first example. At the same time, the unavailability of such an astronautical view from above does not amount to an epistemological defeat. Chamisso pushes against an absolute separation between Northern and Southern hemispheres, which is manifest in other moments of comparative analysis across the text.

When approaching the island of Santa Catarina, off the eastern coast of Brazil, Chamisso's attention to the embodied and affective state of the observer emphasizes scale of a different quality, namely an excess of scale. Chamisso's account frames this in exoticizing terms, intermixing his affective response to the island with empirical observation:

> Die Insel Santa Catharina liegt in der südlichen Halbkugel außerhalb des Wendekreises, in derselben Breite, wie Teneriffa in der nördlichen. […] Hier umfängt eine neue Schöpfung den Europäer, und in ihrer Überfülle ist alles auffallend und riesenhaft.
>
> Wenn man in den Kanal einläuft, der die Insel Santa Catharina von dem festen Lande trennt, glaubt man sich in das Reich der noch freien Natur versetzt. Die Berge, die sich in ruhigen Linien von beiden Ufern erheben, gehören, vom Urwald bekleidet, nur ihr an, und man gewahrt kaum an deren Fuß die Arbeiten des neu angesiedelten Menschen.
>
> The island of Santa Catarina is in the southern hemisphere beyond the tropic of Cancer, at the same latitude as Tenerife in the northern hemisphere. […] Here the European finds himself embraced by a new form of creation, and everything is remarkable and gigantic in its abundance.
>
> When you enter the bay that separates the island of Santa Catarina from the mainland, you feel as if you have been transported in the realm of nature, still unfettered. The mountains that rise in smooth lines from both shores are covered with primordial forests, and exclusively belong to the island, and it is barely possible to perceive, at the foot of these mountains, the labours of the people who are newly settled there. (Chamisso 2: 47)

There is a certain sublime aesthetics of the wilderness to this section. Indeed, Chamisso's encounter with Santa Catarina Island and Brazil in general does amount to an epistemological defeat. The scale of Santa Catarina itself makes it impenetrably alien. The corresponding description in the *Bemerkungen und Ansichten* unusually highlights the specific aesthetic response to Santa Catarina, which firmly roots the description in the vocabulary of the

sublime. Bearing witness to Santa Catarina brings forth wonder (Chamisso 13), a category which goes hand-in-hand with the experience of the sublime in eighteenth-century discourses on affect and aesthetics (Matuschek, 188–89, Gess 15–16). In addition, Chamisso's account follows the lines of response that only in part echo the Kantian sublime: that the viewing subject is overwhelmed by the unbounded vastness of the natural world, although Chamisso stops short of the element of horror central to Kant's formulation of the sublime (Kant, vol. 5, 269). What is lacking is the following step in the Kantian account: Chamisso does not argue for the superiority of reason relative to sensibility. Instead, Chamisso makes recourse to the mode of strained empirical observation to evoke the exotic grandeur of the island and to suggest how its experiential intensity cannot be linguistically contained. What is notably lacking is any sensual language common to exoticizing discourse in the scientific literature of the period (see Bergmann).

IV. Metacritical Reflections on Scientific Practice

Chamisso's reflections do not stop at alluding to the physical and affective dimensions that contribute to scientific ways of knowing. He equally considers the limitations of scientific practice, shuttling between Schlemihlian triumphalism and critically questioning its epistemic validity. Upon docking in Plymouth in 1815, on the southwesterly tip of Great Britain, Chamisso recalls being struck by the flora and fauna in the temperate climate along the Cornish shore. His aesthetic and intellectual fascination resolves into retrospective self-remonstration, since he failed to collect and describe the flora he encountered: "Ich habe erst später erfahren, daß wirklich die mehrsten unbekannt und unbeschrieben sein mußten. Ich habe im Verlauf der Reise manches auf diese Weise versäumt […] Beobachtet, ihr Freunde, sammelt, speichert ein für die Wissenschaft, was in euren Bereich kommt" ("I only found out later that the majority really must have been unknown and not yet been described. Throughout the voyage, I managed to miss quite a few things in this way […] Make sure you

observe, friends, collect, and preserve whatever you encounter in your surroundings for science;" Chamisso 2: 26). Chamisso's maxim is, however, later met with complication. As a naturalist, Chamisso may reify botanical and zoological samples into taxonomized objects for collecting. Yet but this stands alongside skepticism about this very process, for example, as evinced in the bleaching and drying of coral in the Ratak Chain of the Marshall Islands. Such an action was necessary and intended as preparation for the scientific study of the coral. Equally, it unfolded as a collaborative process, performed by the ship's doctor Johann Friedrich von Eschscholtz. Yet this act brings about a self-defeating decontextualization and moribundity:

> Die Korallen selber und Madreporen hätten zu ihrem Studium ein eigenes ganzes Menschenleben erfodert. Die gebleichten Skelette, die man von ihnen in den Sammlungen aufbewahrt, sind nur geringen Wertes, doch wollte ich sie sammeln und mitbringen. Eschscholtz hatte beim Baden alle vorkommenden Formen und Arten zusammen zu bringen sich bemüht, auserwählte kleine Exemplare von denselben auf das Schiff gebracht, und sie zum Bleichen und Austrocknen in den leeren Hühnerkasten untergebracht.
>
> The coral itself and the madrepores would have required an entire lifetime to be properly studied. The bleached skeletons that are preserved of them in collections are of little value, but I wanted to collect them and take them with me. Whilst bathing, Eschscholtz had undertook to completely bring together all the most developed forms and species, brought small, select samples of them onto the ship und put them in the empty chicken crates so they could be bleached and dried. (Chamisso 2: 156)

Botany becomes a matter of subjecting nature to the ossifying gaze of the naturalist. There is a delicate tension in this passage. Chamisso issues a somewhat strained defense of scientific

collecting in this context, consciously framed as little more than a self-justifying habit ("but I wanted to collect them and take them with me"). The logic of natural history may necessarily involve objectification, but this process is inherently lossy – here, bluntly so: the dried coral is inadvertently destroyed by the Rurik's sailors. Chamisso juxtaposes the loss of the collection with quotidian scenes of both himself and Eschscholtz bathing amidst the coral reef in its full complexity as a living organism. Both men thereby partake of its ecology, all whilst keenly observing the "coral gardens in bloom" (Chamisso 3: 156). To be sure, Chamisso's and Eschscholtz's combined observations on how coral reefs and atolls might form proved to be of considerable scientific value (Bowen and Bowen 177–78). At the same time, the metacritical tenor of this episode contrasts the collecting of samples as an extractive, highly limiting ordering of knowledge with the quiet attention to the relational ecology of coral.

Beyond the atolls of the Pacific Ocean, Chamisso also points to a sense of the historicity and mutability of the earth, which comes to the fore in his account of collecting mammoth teeth and fossils in Alaska. Once more, Chamisso's analysis adopts a metacritical tone, but one only made possible by his retrospective gaze on the voyage after eighteen years had passed since the Rurik expedition. On the one hand, Chamisso expresses puzzlement over a later, 1826 account by Frederick William Beechey of the alleged destruction of yedoma, a fusion of ice and rock that comprises a type of permafrost. The Rurik's journey had led to the discovery of a bluff of yedoma, some thirty meters high, in what is now Eschscholtz Bay in Alaska. Quite how to interpret yedoma became a point of contention: scientific interpretations of its composition and genesis were both numerous and contradictory over the course of the following century (Shur et al 6). Chamisso is at pains to defend his reading of yedoma, which he had seen in 1816, as a solid mass. By contrast, Beechey's account had proposed that it was an admixture of soil, sand, and ice. Chamisso contests Beechey's view,

claiming that it would only be possible if the yedoma had undergone considerable decline over the course of the decade. In this, Chamisso draws inferences to 'fix' the geological earth and render it comprehensible by attempting to account for the inconsistency between his interpretation and Beechey's. At the same time, Chamisso is happy to cede ground to the notion of the Earth's historical geo-instability. Yedoma, as permafrost deposits dated to the Pleistocene era, can make manifest interacting geological processes of deposition and erosion. Chamisso writes on the temporal inconsistencies in the competing strata of this permafrost landscape, where the ice deposits yield prehistorical finds that cannot be found in the neighboring sand:

> Ich zweifle nicht, daß die Mammutzähne, die wir hier sammelten, aus dem Eise herrühren […] Ist es aber das Eis, welches die Überbleibsel urzeitlicher Tiere führt, so möchte es älteren Ursprungs sein, als der Sand, in dem ich nur Renntiergeweihe und häufiges Treibholz angetroffen habe, dem völlig gleich, das noch jetzt an den Strand ausgeworfen wird. Daß dieses Eisufer sich zwischen dem Urgebürge und dem Sande erstreckt, ist auch nicht zu übersehen.
>
> I have no doubt that the mammoth teeth that we collected here came from the ice […] But if it is the ice that bears the remains of primeval creatures, then it must be far older in origin than the sand, in which I could find merely reindeer antlers and plenty of driftwood, quite identical to that which still washes up on the beach today. The fact that the ice shore lies between the ancient mountains and the sand should not be overlooked. (Chamisso 2: 95)

Chamisso is happy to entertain the primordial, geological instability and ruptures of the earth that allows for competing layers of different temporal origin. Yet Chamisso's remarks remain bound to the level of scientific observation and inference without making recourse to a notion

of geological "deep time" that, as is well-known, was beginning to coalesce in the early nineteenth century (Beer 17). Whilst confronted with the hermeneutic problem of reading strata, Chamisso's tone remains one of bluff confidence in the scientist's gaze. Indeed, in these brief geological observations from Alaska, Chamisso undoubtedly upholds a subject-object distinction between human and nature, which is part and parcel of the scientific gaze and analytic intellect – and which is, by and large, typical for his 1835 account, *Reise um die Welt*.

If Chamisso does overall write with the self-assurance of a scientific observer, then what is to be gained by viewing his *Reise um die Welt* in planetary terms? To be sure, his recourse to the scientific gaze is far away from ideas of the natural world as addressed in, say, Schelling's *Naturphilosophie*. One might refer, as well, to Karoline von Günderrode's poetics of the earth in the Romantic period, which collapses the individual subject into the monism of a spiritualized and metaphysical nature. Chamisso's planetary awareness is, I submit, a specific form of attention to the contingency of how knowledge is produced. Whilst his tone does not deviate from rhetorical self-confidence in the *Reise um die Welt*, Chamisso is attentive to the lossiness that attends all gathering of biological samples, as well as to the cognitive and aesthetic difficulties confronted before the exotic sublime. The consciously subjective style of *Reise um die Welt*, compared to the earlier report of *Betrachtungen und Ansichten*, involves a continued strategy of metacritical reflection, a strategy that stages moments of tension to hint at inconceivably complex interrelations between natural processes. In addition, the commentaries, as well as the scenes of scientific collecting and practice, focus on embodied human existence and how it both constitutes and contributes to iterative, scientific ways and practices of knowing. Chamisso's account, much as its state-sponsored and political impetus was originally a global one, points beyond this frame – in manner that assumes planetary contours.

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[i] Chamisso draws on a well-worn repository of poetic tropes in “From the Bering Strait”, yet by intertwining doubt over scientific practice with both the question of individual purpose and the relation between the individual nature, the poem leans into cosmological territory which is a point of departure for planetary thinking (Hanusch et al, 16–17).

[ii] Planetarity can, in other contexts, come closer to an expansive sense of cosmopolitanism, in Susan Stanford Friedman’s account, it comprises “a polylogue of languages, cultures, viewpoints, and standpoints on modernism/modernity. It requires attention to modes of local and translocal meaning making and translation, to processes and practices of perception and expression on a global scale.” (Friedman 79)

[iii] This tension has its origins in the same scholarly tradition, namely the importance of Mary Louise Pratt’s influential study, *Imperial Eyes. Travel Writing and Transculturation* (1992).