

Translated excerpt

**Jürgen Goldstein**  
***Die Entdeckung der Natur. Etappen einer Erfahrungsgeschichte***

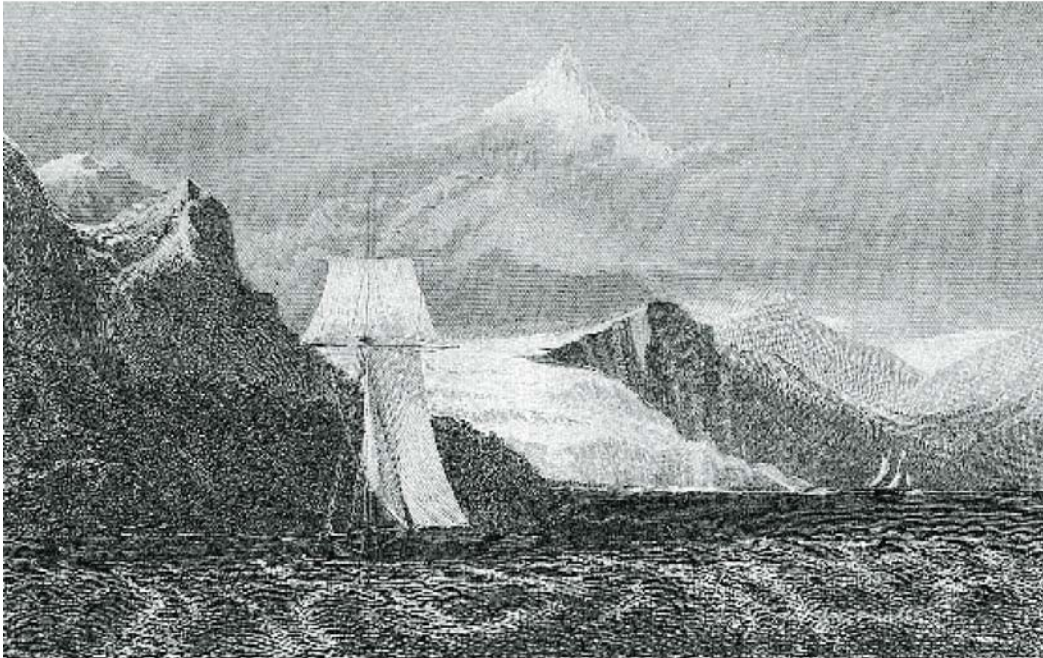
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**Jürgen Goldstein**  
***The discovery of nature. Highlights of a history of experience***

Translated by David Brenner





*Am Ende der Welt – Darwin an Bord der ›Beagle‹ vor der Küste Feuerlands*

"Man is a creature who sees above and far around himself"

#### On Mountain Climbing and Ocean Crossings

The sight shocked him more than anything he might have imagined. He must have been thinking: if these are human beings, then everything we think we know about man is mistaken. It was the 18<sup>th</sup> of December, 1832, and Charles Darwin was standing at the southernmost shore of Patagonia, encountering the native inhabitants of Tierra del Fuego. For him, they were savages. Yet that word was insufficient for describing what he saw. One was, after all, acquainted with *savages*: hadn't Georg Forster had described the natives of Tahiti half a century earlier? The exotic allure of strangers was not unfamiliar. However, the figures Darwin now encountered--painted, dressed only in fur cloaks, miserable, scared, and suspicious--didn't have anything in common with the "noble savage," as Jean-Jacques Rousseau had portrayed him. To Darwin, these were not archetypes of humanity uncorrupted by civilization but rather on the borderline of what he was prepared to acknowledge as human. Looking back on it, he wrote: "It was without exception the

most curious and interesting spectacle, which I had ever seen: I could not believe how wide was the difference between savage and civilized man: it is greater than the difference between a wild and domesticated animal, inasmuch as in man there is a greater power of improvement." The savages looked filthy; their hair was unruly, their voices discordant, their gestures violent, and their cries fierce. Were they truly human? Going through Darwin's head was: "Viewing such men, one can hardly make oneself believe that they are fellow-creatures and inhabitants of the same world."

Their strangeness prevailed and remained with him. As the devout Christian he was at that point, Darwin must have asked himself: are not all human beings [Page 10] creatures of God and thereby related and familiar, linked by the bonds of their ancestry? But a feeling of connection did not take hold. "We can hardly put ourselves in the position of these savages, and understand their actions." Yet how was such a gaping abyss possible between these European world-travelers and those creatures standing just an arm's length away on that South American beach? Darwin was unprejudiced enough not to look down on them in an imperial mindset. Yet he is surprised—indeed, bewildered--by them. Do they perhaps mark the point from which an "improvement" or development of humanity began? At one of the most remote points of the world (known at the time), he is shown the extreme limit of what was human, which only seemed separated from the animal by a finely-drawn line. Darwin has reached the limns of civilization, for "in this extreme part of South America, man exists in a lower state of improvement than in any other part of the world." It takes him aback: "The Fuegians are in a more miserable state of barbarism, than I had expected ever to have seen a human being."

This discovery at the lower threshold of what is human struck Darwin with full force. He could not have been prepared for it. Like a meteor, these impressions shattered his assumptions about man, eliciting the intellectual equivalent of an earthquake. To him, the natives of Tierra del Fuego—sitting on stones, waving their arms wildly above their heads, their long hair flying"—appeared to be "troubled spirits from another world." Darwin felt he had been exposed to the "[f]irst sight of man in his primitive wildness." The entire knowledge of tradition, inscribed in books, could no longer be brought into line with such a sight. It signaled the triumph of experience over everything learned or read, a "spectacle . . . which cannot be well imagined until it is experienced." At this moment, as his knowledge is faltering because of what he'd seen, Darwin thinks something scandalous: "One's mind hurries back over past centuries, and then asks, could our progenitors have been men like these?--men whose very signs and expressions are less intelligible to us than those of domesticated animals; men who do not possess the instinct of those animals, nor yet appear to boast of human reason, or at least of arts consequent on that?"

This idea, dictated by the fear of a highly unsettling sight, marked the deepest caesura in the history of anthropology, the most fundamental shift in the doctrine of man. Having withstood the spectacle of these repulsive creatures without denying them their humanity, but instead recognizing his own ancestors in them, Darwin came to the dizzying conclusion that "all civilized nations were once barbarous." When such a great distance was possible between civilized [page 11] and barbarian men (as seen on the coast of Tierra del Fuego)--a distance that

opened Darwin's eyes to the depths of history, as if the Fuegians were living fossils of a lower stage of civilization--why should one look back even further for earlier forms of these savages? If the savage was the precursor of the civilized, wasn't there a precursor of the savage?

Nearly four decades passed until Darwin was publicly willing to draw the conclusions of his encounter with the Fuegians. In the meantime, he had published his theoretical basis for evolution, *On the Origin of Species by Means of Natural Selection* (1859), where only a single sentence touched on the origins of mankind. There Darwin looks forward to the prospect of illuminating the issue, as a revelation that is inevitable: "Much light will be thrown on the origin of man and his history." It was not until 1871 and his *Descent of Man* that Darwin disclosed the conviction he'd reached through his life's work, "that man is descended from a less highly organized form." That was the forging of a link between nature and man. If Darwin had earlier merely seen the history of civilized man as dependent on a less sophisticated form of the savage, he now claimed that man descended from animals. In his development, man was thus "the co-descendant with other mammals of a common progenitor." If on that beach in Patagonia Darwin had defended the unity of mankind--even though he found it difficult to view the Fuegians as coinhabitants of the same world--he was now claiming that humankind had a natural origin. "[W]ith his god-like intellect which has penetrated into the movements and constitution of the solar system—with all these exalted powers--Man still bears in his bodily frame the indelible stamp of his lowly origin." That made man comparable to the animals. And Darwin had written an entire book about the clear proximity of human and animal, entitled *The Expression of the Emotions in Man and Animals*.

What then distinguished humanity at all from the animals? After all, man was inserted into the general development of nature by Darwin's theory of evolution, thereby losing the special status he'd enjoyed for nearly two millennia—derived from the assumption that he'd been introduced to the world by God. Darwin could "not any longer believe that man is the work of a separate act of creation." Humanity was instead the result of an incredibly extended development in the history of biological organisms. But that was just too much for mankind to take, in its tradition-directed self-consciousness. Sigmund Freud would speak of Darwin as having "destroyed man's supposedly privileged place in creation and proved his descent from the animal kingdom and his [Page 12] ineradicable animal nature." Alongside the Copernican humiliation—of being banished from the center of the world--and the psychoanalytic affront--of the ego no longer being master in its own house—there was now the biological degradation of modern man, deemed to have descended from apes. The criteria that determined what was human were threatening to become permeable, losing all their bearing capacity. Certainly man had reason, language, moral aptitude, and free will--all of which distinguished him from animals. But where was one supposed to make the cut, separating the development of *Homo sapiens* from its predecessors? What had been necessary for the transition from one to the other, thereby establishing the range of natural history and its temporal threshold? Which criterion was appropriate for distinguishing human beings from the not-yet-human while at the same time not relegating them--as Darwin had in his initial encounter with the Fuegians--to the most distant members of one's own species?

For Darwin, there was a telltale sign that might just assist in making the distinction. He found it precisely in the physical constitution of hominids. It may not be unreasonable to speculate that Darwin's willingness to acknowledge the native savages of Tierra del Fuego as members of his own species depended intuitively on an essential fact: they were *standing* when he extended his hand to them. To him, the upright carriage of the body, as a form of presentation and organization, had the unmistakable stamp of arriving at something higher. Despite his willingness to consider man a relative of the animals, Darwin clung to a symbol that granted the hominid distinction: "Man alone has become a biped; and we can, I think, partly see how he has come to assume his erect attitude which forms one of his most conspicuous characters."

It would be rash to think of this as a residual convention that Darwin was unable to overcome, an anthropological vanity that had escaped the Enlightenment's biologism. For there was a long tradition of associating man's upright position with a form of distinction. Even Aristotle considered man's verticality a sign of his uniqueness, "for he is the only living to stand upright, because his constitution and his essence are divine." According to Ovid's *Metamorphoses*, while other animals "lean forward and look down toward the ground," man was the recipient of a gift from the creator god, who presented him with "a face that is uplifted / and ordered him to stand erect / directly up into the vaulted heavens / and turn his countenance to meet the stars." Johann Gottfried Herder too would write in his *Reflections on the Philosophy of Human History* of 1784, "the posture of man is upright, making him among the creatures of the earth." Because of this special status, man might be termed "the God of the animals." But at the end of the 18<sup>th</sup> century, no one could utter such things without running the risk of being parodied. Forster thus made fun of Herder's equation of walking upright and grandeur [page 13]: "Don't all birds carry their heads high, especially the most stupid of them all, the penguins?"

Since Darwin, disillusion has taken hold concerning the position of man in the universe. Nevertheless, man's enduring bipedalism remains a remarkable fact. The attainment of an upright posture presupposed serious anatomical changes in the skeleton that had enabled the earliest forms of man to have an upright stance and gait. According to current estimates, *Australopithecus* emerged over 4 million years ago; *Homo habilis*, perhaps 2.5 million years ago; and *Homo erectus*, around 1.6 million years ago. This anatomical exceptionalism was therefore not self-evident. Herder knew nothing about these vague prehistoric stages of development but was shrewd enough to realize that man's "artificial stance and gait" had only become possible "through a countless number of strenuous activities."

There are many indications that humans became bipedal due to the requirements of a transformed environment. It appears to have been a response to changing climatic conditions and the associated retreat of extensive forests. Once open savannas had materialized, they were available to be roamed. It may thus have been advantageous to be able to walk upright while having one's hands free. Whatever the case, hominids would have embarked on the difficult path to vertical balance because of its role in survival. Seen historically, because this shift in hominid organic constitution occurred immediately before *Homo sapiens* appeared,

it represents an anthropogenic feature that is rife with symbolism. From that moment on, we can speak of “man”—at the point when he began to stand.

This stage nonetheless resulted in more than in gaining an advantage in survival. We shouldn't be too conservative in gauging its consequences. Perhaps the most important and lasting effect of this vertical reorganization of the human organism was the modification in its optics. The relevant formulation for this was quite simple: whoever is standing can see farther. Although a standing creature didn't see as far as an ape that climbed up a tree, he could better respond to what he saw, moving closer or further away from it. The upright position was optimized to provide the maximum ability to see while one was also moving. This discovery cannot be overstated. Compared to the limitations on sight set by a ground-oriented posture or having to see past the branches of a tree, standing freely made unobstructed views possible.

Until the first hominid could see far around himself, he was not open to leaving behind the boundaries [Page 14] of his life-world habitat. The view across enormous landscapes must have been an experience that made boundaries (begin to) dissolve. A space developed that reached beyond one's vicinity, beyond what was immediately demanded for survival. A routine of seeing far thereby took shape. It may have been the same experience of suspended boundaries that triggered the management organ of “reason” in *Homo sapiens*. For the amplified field of vision was consistent with a need for a more wide-ranging intellect. Standing erect increased the number of possible objects of knowledge. Now able to see further, man would have scanned the horizon and observed the day and night sky while looking upwards. By having stood up, he'd raised himself up in the world, thus bringing himself on a par with it. “Man observes the world because of his upright posture and his uplifted face,” according to Lactantius, one of the Christian patristic writers. The optics that accompanied man's orthograde posture seem to have accelerated the process of humanization, granting *Homo sapiens* one of its basic features. In the the ever-sound judgment of Herder, man was “a creature who sees above and far around himself.”

Viewed in the context of natural habitats and evolutionary niches, man is like an animal with “borderline” symptoms. His relationship to natural boundaries is a troubled one. For he is not satisfied with the biotope of his immediate life-world. Even his anatomical verticality is an organic metaphor for the dynamic of striving upwards--and outwards. What man's body completed after thousands of centuries was sustained once he left the space of familiar surroundings, despite also (like Odysseus) longing to return homewards. With his formula of a creature “who sees above and far around himself,” Herder made it possible for this organic image to be interpreted long after its pathetic glory had faded. This pronouncement was not so original, however. In ancient times, man already understood himself as an observer of the stars and everything terrestrial. Yet Herder's wording was effective, combining both perspectives—looking above and around—and thus encapsulating the optical effects of the hominid's bipedalism. The reduction to a visual advantage was a felicitous one, since it gave full consideration to another significant feature: man is the most visually curious of animals.

The world is his "object of observation." Plato had Socrates profess that "the earth has many and wonderful places, which are pleasurable to look at." Such is the good fortune of the observer of the world, the *contemplator mundi*, that the earth is not barren like the surface of the moon. Instead, it exemplifies a variety that not even the longest life can fully grasp. The earth's inexhaustible wealth makes man into an observational nomad. It is "immense," and Socrates lets his contemporaries know that the [Page 15] residents of the Mediterranean lived "around the sea" but "only in a very small portion, like ants or frogs around a marsh." The enormity of the unexplored world became a challenge--and the height of the vista the perfect perspective. For Socrates, that's why "the earth is to be regarded as if someone were looking down on it from above."

Mountain climbing and ocean crossings are therefore not just arbitrary movements in space. They are also always an expression of a fundamental anthropological desire to move higher up or further away. Reinhold Messner has claimed that "the horizon" accounts for his "strongest experience when climbing." The vistas revealed by climbing higher were akin to a primal experience for him:

When a child like me had lived for ten years in a narrow valley surrounded by steep ascending forests and stony limestone ridges, the day on which he saw the expansive sky above him would be a central one in his life. Long before I could leave that valley and enter even deeper landscapes, I had experienced this unlimited horizon from atop the mountains. The overwhelming impression when ascending them--the stone walls were much larger than I'd remembered when looking up from the village square--was surpassed by the colossal vastness that opened up at each summit: a dream landscape.

Like the panoramic view from the mountaintops, the horizon of the sea also exemplifies the suspension of boundaries. "A new world was upon us," writes Forster when looking at the sea with Alexander von Humboldt. "In our thoughts, we sensed the opposite shore and the distant coasts that the ocean makes accessible to man's bold diligence." To leave behind one's ancestral coast and travel the seas expresses the will to engage the promise of the unadorned horizon.

At the outset, we would do well to disregard the motivations of athletes, such as extreme climbers or around-the-world sailors. It's better not to let the anthropological significance of centuries of mountain climbing and ocean travel be displaced by obsessions with world records, or the self-affirmations of those who pursue them. When Francesco Petrarca ascended the 1,912-meter-high Mont Ventoux in Provence on 26 April 1336, what drove him was "only the desire to acquaint myself with the unusual height of this spot on earth, with my own eyes." Furthermore, Darwin noted in the course of his circumnavigation that "Africa" and "North [or] South America" were "well-sounding names and easy to pronounce; but it is not until having sailed for weeks along small portions of their coasts, that one is thoroughly convinced what vast spaces on our immense world these names imply." These two men were concerned with global exploration and enhanced observation--not some form of athletic achievement or quest for self-discovery.

Neither traveling on the seas nor climbing [Page 16] of the mountains were self-evident things to do. Two major centuries-old arguments spoke against such an

idea. For one, many thought that man had a proper location from which he should not stray—a notion deeply rooted in the cultural memory of Europe. As Pomponius Mela in the 1<sup>st</sup> century C.E. undertook a description of the earth in his *De Chorographia*, he referred to the unexplored (albeit not unknown) region beyond the familiar world as "*situs incognitus*." It would later be labeled "*terra incognita*." Traveling there was inconceivable after the mythical "Pillars of Hercules" began to designate a boundary not to be crossed. These "pillars" stood for the rock formations at the Straits of Gibraltar where the European and the African continents met. To pass through this strait of the Mediterranean and reach the open seas was deemed to be impossible.

Nonetheless, the Western tradition was familiar with the promise implied by this possibility for just as long as it had known its explicit prohibition. Seneca had already declared that "[t]he time shall come when the years have passed, where the ocean's current will rupture the earth's ring and a vast terrain will be extended . . . and land's end will no longer be Thule." The ancients regarded Thule as an island at the northernmost edge of the world. Christopher Columbus was supposed to be the one to fulfill the promise of the open seas west of Gibraltar. What he thought was India was instead a new continent, a fact that unsettled the epistemological structures of the Old World. More significant than the discovery itself was the acknowledgment that there was something new to be discovered in the first place.

Nowadays it is difficult to understand the physical and mental efforts required to cope with the distances that were becoming accessible at that time. On 10 August 1519, when Fernando Magellan departed with five ships from Seville to the West to open a pathway to the Spice Islands for the Spanish Crown (the eastern route was under the jurisdiction of the Portuguese), he had no idea how long his journey would last. To be sure, he discovered what he could hardly have dared to hope: a South American passage from the Atlantic to the "Mare Pacifico" (Magellan's name for that storm-free sea). This passage made it unnecessary to journey around the hazards of Cape Horn. However, crossing the Pacific was an experience that went beyond his worst fears. From his chronicler, Antonio Pigafetta, we know something of the rigors of that voyage:

On Wednesday, the 28<sup>th</sup> of November [1520], we said farewell to the strait and entered a sea in which we sailed for three months and twenty days without partaking of the slightest fresh nourishment. The biscuits we ate were no longer biscuits, but only dust commingled with worms and the filth of mice; they had an unbearable stench. Even the water we were compelled to drink was foul and putrid. So as not to die of hunger, we ate the leather in which the large mast yard had been wrapped so as to protect the ropes.

In addition, scurvy broke out on the ship. Of the [Page 17] five vessels with 256 sailors and officers on board, only one would return to the port of Seville on 8 September 1522—with just eighteen survivors.

Magellan himself died on the journey. The distance covered in this first circumnavigation of the earth (calculated at 46,300 nautical miles) was so inconceivable that it was hard to believe it would be repeated. The crew reached its homeland as "[e]xhausted as humans could be," wrote captain Juan Sebastián del



Cano in a letter to the Spanish king. Pigafetta regarded it as divine providence that they did not all die of hunger on that "broad, boundless sea." Although they had reached the "Spice Islands," sailing for "27 months less two days under great hardships and losses on unknown seas," hadn't they paid too high a price in human lives? "I am convinced," Pigafetta recorded in his ship's log, "that such a trip will never be made again." It would take a long time for people to get accustomed to such distances and periods of time. One needed a good dose of "courage," the equivalent of a second sun, to "sail around the earth" again. In Forster, one even senses an echo of the sanction on passing the Pillars of Hercules, the excitement of having ventured into the unimaginable. When he and his shipmates reach that point in the Pacific furthest from London (its antipodes) in December 1773, he remarks that "[w]e were the first Europeans and, I might as well add, the first human creatures who have arrived at this point, which perhaps no one after us will visit again."

Yet in the representations of mountainous regions, one can also identify the sense of needing boundaries alongside the gradual appeal of transgressing them. The peaks of the Alps had long been regarded as the quintessence of the undiscovered world. "No one dares to approach them," observed Michel de Montaigne in his *Diary of the Trip to Italy via Switzerland and Germany from 1580 to 1581*. In 1786 Horace-Benedict de Saussure was compelled to establish a prize--using his own funds--to motivate the native inhabitants of the Alps to make the first ascension of the 4810-meter-high Mont Blanc. Saussure records that one of the local farmers referred to the "lovers of ice-peaked mountains" as "complete fools." Why should anyone climb mountains unless it was necessary? When climbing Pico de Teide on Tenerife, Humboldt was stunned when informed by the guides he'd hired that "none of them had been on the volcano's summit" until then.

The metaphor of the Pillars of Hercules had proven flexible enough to indicate not only the natural boundaries of navigation but also the threshold not to be crossed in mountaineering. Together with Aimé Bonpland and Carlos Montúfar, Humboldt climbed Chimborazo (in Ecuador) on 23 June 1802. According to the estimates he recorded in his diary, the peak was 3036 toises, about 5915 meters high, making it "the greatest height that we ourselves--and humanity generally--had scaled." Only when a [Page 18] deep fissure prevented him and his companions from ascending further, forcing them to turn back, Humboldt averred: "It was *our* Pillars of Hercules." It thus marked for him the boundary of what could be achieved, while also symbolizing the tangible appeal of going beyond it. For "it would be interesting to go all the way to the top." Humboldt apparently thought it impossible to get higher on Chimborazo. It wasn't until 1880 that Edward Whymper completed the first ascent of the 6267-meter-high peak. In 1922, George Leigh Mallory, Edward Felix Norton, and Howard Somervell became the first to surpass the 8000-meter limit on Mount Everest. On 29 May 1953, Edmund Hillary and Tenzing Norgay finally stood atop its summit, the highest on earth.

Yet the limits of what could be traversed were not only marked by cultural reservations about leaving one's ancestral habitat. The other powerful influence was theological disapproval, which placed human curiosity under the general suspicion of sinfulness. In his *Confessions*, which he began at the end of the fourth century, St. Augustine branded the "concupiscence of the eyes" (*concupiscentia oculorum*),

issuing a warning that would mean something to Petrarch almost a millennium later. In Book Ten of the *Confessions*, Augustine comments: "And people are going off to admire the heights of mountains, the mighty waves of the sea, the broad slope of the streams, the vastness of the ocean, and the transitions of the stars--thereby taking leave of themselves." That sounded like a prohibition, the declaration of a taboo, and that's how Petrarch understood it as well. It was a vice to want to climb mountains and explore the sea torrents, merely to satisfy the "pleasure of the eyes." At the same time, Augustine's warning can also be regarded as merely the downside of an intellectual revolution. For Augustine had discovered human inwardness [*Innerlichkeit*], the infinite riches of man's inner self. To him, the encounter with the "inner man" (*homo interior*) should be more important than registering the external world of appearances, because truth and the tangible God were present within each of us. Consequently, he insisted, "Do not go outside; return again to yourself: the truth abides in the inner man." However imposing the mountains or tremendous the seas, what did these heights and distances mean compared with the vastness and depth of one's own self? Augustine had also seen the mountains and seas, but they elicited less reverence in him than his ability to shut his eyes and remember them. "*Memoria*" as an immense span of memory was a power of mind that outweighed the externals of the world. Augustine accordingly became the Columbus of the inner self. In the vast spaces of his internal world [*Innerlichkeit*] he discovered his own private "continents." His biographical confessions thus represent the travel diary of his inner life.

For Petrarch, then, it was just as unusual to climb a mountain for the sake of the vista [Page 19] as it was for Columbus to cross a vast ocean on a route that "according to our knowledge, no one had traveled until now." All sensory observations of the world had been overshadowed by Augustine's moral censure. Yet in the light of the resurgent examination of nature, a newly attuned description of the world ensued, as well as a longing to breach the enormous heights and depths of the (still largely unknown) earth. Previously, there had doubtless been observations and depictions of what was perceived as nature. But the (re-)discovery of the natural world was conveyed by an awareness of finally doing what the ancients seemed to have wanted yet been unable to accomplish. As a result, the young Forster embarked upon an ocean voyage with James Cook, with the aim of sailing as far as was possible into Antarctic latitudes—an expedition "that no one before us had attempted." Darwin was astounded at the strange wealth that lay beyond the Old Continent because "for every person in Europe, one may say justly, the splendor of another world is opening up at only a slight distance of a few longitudinal degrees from his native soil." Equally novel were the impressions now offered by the alpine worlds that were gradually beginning to be explored. Conrad Gesner, a naturalist born in Zurich in 1516, had effectively made it his objective to climb mountains after his first overwhelming impressions of them. In a letter dated June 1541, he professes, "I decided from now on to climb some mountains--or at least one--every year, at the time when the plants were at their most vital; I was motivated in part by knowledge, and in part by the honorable exercise of the body and the indulgence of the mind. For how great is the pleasure, how great the joys of the mind thus engaged, just as (is it not true?) admiring the enormous scale of the mountains and raising one's head, in matter of speaking, between the clouds?" His mind was "dazed by the incredible elevations." The spell had been broken.

For all of their precursors, these new world-explorers regarded themselves as pioneers of a revolutionary observation of nature. Even where they were seeking orientation from the models of antiquity, they were also developing a new way of seeing. If for theologians everything in nature was a hint of God's creative power, these innovators were trying to get at nature's "naturalness" (in a manner of speaking). Humboldt's grand *Cosmos*, despite its historicizing title, was the (somewhat crazy) modern attempt to describe the entire physical world. There was no mention made of God. In the first century C.E., Pliny the Elder had already composed an encyclopedic natural history in thirty-seven volumes. His *Naturalis historia* would supply Humboldt and his contemporaries with a framework of how to cope with such masses of knowledge. Beyond that, it served as an incentive to take up the ancient repository of knowledge and outdo it with new insights.

Even if the new way of seeing nature was scientific, it was also attempting to be more than [page 20] the empirical foundation of a modern theory of the physical world. Since ancient and medieval theories about nature had generally been alleged after Copernicus to truck in falsehoods--there were often no alternative scientific interpretations to draw upon--these new observers of nature decentered traditional learning as much as they could. At first they strove to let books be books and describe what they saw without prejudice. In the case of Georges Louis Leclerc Buffon, author of a monumental, widely-read natural history (*Histoire naturelle générale et particulière*, 1749-1804) in forty-four volumes, this fresh approach to observing nature makes it "necessary to put away all our prejudices for a moment, to even reject our preconceived notions." He aimed instead for the evidence of the moment: "A beginner must therefore not only see much but must also see things virtually free of intentions." In a certain sense, they were all beginners, advocating a sensual perception that was more than just a transitional stage on the road to some abstract knowledge.

Darwin was thus a genius of pure observation, concluding that "[I]ogical thinking is a fatal error during observation--but just as necessary before it as it is useful after it." Pure intuition was therefore an ascetic act in which one disregarded (if at all possible) one's own interests. Its goal was to challenge received knowledge and start by being mindful of nothing but what could be seen. Disregarding oneself meant respecting what was observed. As Maria Sibylla Merian was studying a tropical butterfly in the rainforest of Suriname through her magnifying glass, the animal disclosed itself as "wonderful, and worth looking at closely, since its beauty cannot be described in writing." In later describing the metamorphosis of the insects that she'd examined in South America, Merian abstained from exuberant theorizing: "I could have made the texts" that accompanied her illustrations "more detailed, but since the world today is very complex and the views of scholars so different, I'm simply sticking with my observations." In short, the best thing to do--in Forster's words--was to "observe attentively and recount faithfully what one has seen."

Putting intuition before theory—as well as the senses before ideas and description before abstraction—is something also defended by those who expose themselves to nature without being naturalists. The protagonist of Peter Handke's novel *Der Chinese des Schmerzes* has to be told: "You always want to immediately know something instead of starting out by observing." This unwillingness to let experience come before knowledge or intuition come before an idea illustrates the

art of becoming aware. Looking, observing, and experiencing without intentions—not to speak of opening up or closing oneself off—are equivalent to the contemplative ability to be completely immersed in something else. [Page 21]

Whoever is capable of that is handsomely rewarded. One of the most beautiful endorsements of this new way of attending to the world can be found in the works of Johann Wolfgang von Goethe. One evening in 1779, when visiting the snow-capped Swiss Alps, he is overwhelmed by a mountain panorama, unable to let go of the sublime sight: "Again and again the eye and the soul beheld the ice peaks. As the sun began to set, their great surfaces were illuminated in front of us. Looking at them from the lake, black stone ridges, teeth, towers and walls rise up in multiple rows! Vast, wild, and impenetrable precincts are forming! . . . [T]hey linger in the purity and clarity of the open air, various and sundry." Moved by this sight, Goethe adds another sentence, avowing nature to be a heaven on earth. With those words, he releases himself from a sense of the supernatural: "One is happy to give up any claims to the infinite because it's not possible to handle all the finite thoughts and views one has there." The world is enough: such is the happiness of he who beholds it.

The world-travelers whose voices we hear in this book were also writers—some of them brilliant--and they were guided by a longing for sensory immediacy and the pleasure of looking. The experiences opened to them were then able to find their resonance in words, in a new language, a living expression. The language of the traditional world of books rapidly appeared too outmoded to be able to capture the fascination of these new impressions. In expressing the glory of discovered nature, words soon escaped them. Petrarch's description of the view from the summit of Mont Ventoux is effectively written in shorthand. Rather than find his own terms for them, Columbus preferred to cite more ancient notions of idyllic landscapes. In a state of resignation, Darwin confessed that it was useless to try to describe tropical scenery to those who had remained back home: "[I]t would be as profitable to explain to a blind man colours, as to a person who has not been out of Europe, the total dissimilarity of the tropical view." Forster also lamented that the "paltry twenty-four *characters*" of the alphabet were inadequate for reproducing one's impressions of nature. That's exactly why a descriptively precise language was understood to be a serious desideratum for any observation. "When quietly walking along the shady pathways," writes Darwin, "and admiring each successive view, I wished to find a language that can express my ideas." This desire is what makes the travel diaries, letters, and memoirs of the writers surveyed here especially appealing: they are documents of an attempt to uncover a new language.

That attempt includes a mindfulness toward those sensations aroused by nature. When looking out from the summit of Mont Ventoux, Petrarch responded as if he were stupefied. Both Forster and William Weike were fascinated by the captivating beauty of the ice-peaked mountains. [Page 22] The observation of the smallest insects elicited pure admiration from Jean-Henri Fabre. Nature as described is always nature experienced sentimentally. "To portray nature in all its sublime greatness," Humboldt stipulates, "one should not dwell on its external appearances alone; nature must also be depicted as it is mirrored inside of man." The history of observing nature therefore offers much more than a chronicle of geographical discoveries made on foreign shorelines or previously unclimbed peaks.

In the succession of such reported experiences over the years and centuries, a transformation of humanity's self-conception also made its mark on its perception of nature. Just which "mirrorings" someone was (or is) capable of were the result not just of individual differences in character (Forster's descriptions are much more enthusiastic than Darwin's!) but also of the historico-cultural coloring of their respective views. Johann Caspar Goethe and François-René de Chateaubriand had both climbed Vesuvius. Yet during the good half a century between their two ascensions, a fundamental shift in mood had taken place. Whereas the elder Goethe was a classical educated traveler of the eighteenth century, who mastered the rigors of conscientiously observing the volcano with his humor intact, Chateaubriand was completely under the influence of Romanticism, seeing everywhere on Vesuvius only death and destruction. Karl Philipp Moritz prefaced his *Travels of a German in England in 1782* by discerning that "everyone has his own standard by which he measures things outside himself, as well as his own standpoint from which he observes matters." The diversity of these measures and the shifts in perspective comprise the history of observing nature. The discovery of nature in the course of centuries goes hand-in-hand with this disclosure of mankind's changing modes of perception.

Hence, what man understands (and has understood) under *nature* is itself subject to cultural-historical transformations. Based on significant milestones, a development can be discerned. First, there is Petrarch's programmatic initial observation of a landscape and the earliest discoverers' Columbus-like inability to describe what they had seen. Then, there are the impressive deliberations on nature by Forster, Humboldt and Goethe. Finally, there is the modern-day failure to observe the world without filters, thereby giving adequate expression to what is experienced (as diagnosed by Lévi-Strauss and Handke). The starting and end point of these developments seems to consist in the inability to observe. While those first innovators of postclassical natural discovery still had too many books in their heads to register (beyond their received knowledge) the new in all its otherness, our view of nature today is concealed [Page 23] by too many images that impede our impressions. Too many of our expectations are predetermined, too great our desire to experience the self. As a result, "our eye has lost its freshness, we are no longer able to look at things." In that way, Lévi-Strauss gets at the heart of our present-day observational fatigue. We know everything and see nothing. The discovery of nature as a history of experience commencing in the fourteenth century appears to have reached its end. This crucial trajectory comes into relief when we progress through the centuries using the reports of encounters situated where man's experience of nature and his self-expression intersect. The present work thus deals with the nascent recognition, gradual development, and impending loss of our ability to experience nature.

*The Discovery of Nature* cannot and does not aim to be an exhaustive work. By limiting itself to archetypal experiences of nature, it is consistent with guiding principles of mountain climbing and oceanic voyages. Accordingly, a great deal is left out of this account. For instance, the book omits the crossing of North America by Meriwether Lewis and William Clark between 1804 and 1806, in which they traveled 6500 kilometers from St. Louis to the mouth of the Columbia River. It additionally excludes David Livingstone's discovery of Victoria Falls when passing

through the African continent in 1855. Ludwig Leichhardt's penetration of the Australian interior in 1848--a failed attempt to negotiate that continent from east to west which cost him his life--is also neglected. Lastly, it leaves out the arrival at the South Pole by Roald Amundsen on 14 December 1911 and by Robert Scott a month later. Other matters that have found their way into the annals of sea navigation or the history of mountaineering aren't touched on at all, such as Ernest Shackleton's spectacular expedition to Antarctica on the *Endurance* from 1914 to 1916, or the first ascent of Nanga Parbat by Hermann Buhl on 3 July 1953.

As a result, this work is emphatically not a chronicle of the "Age of Discovery." For it hardly matters who discovered what, where, or first—at least not for an anthropology (within the broad field of the human sciences) that seeks to confirm aspects of humanity using the experience of nature, or for a history of experiencing nature that depends on humanity's changing image of itself. If the discovery of nature is simultaneously an exploration of what it means to be human, then the essential questions are how succinct an experience is and how it is expressed in language--not how it might represent a pioneering achievement. Hence, each of the authors treated here provides an irreplaceable perspective that enriches the history of man's experience of nature. Each travel report I draw on has managed to express in unique fashion one of the possible mirrorings of humanity in nature. This is why the book also addresses both Georg Christoph Lichtenberg's trip to Helgoland and Peter Handke's climbing of Sainte Victoire, [Page 24] even though these men's willingness to open themselves to nature has not earned them recognition in the annals of great achievements.

Compared to libraries and their abundance of intellectual and scientific works, these travel notes, expedition diaries, letters, and memoirs make a rather humble impression. Their characteristic style is narrative. And one would misunderstand how unique they are, if one examined them merely as precursors to later theoretical elaborations (as in the case of Humboldt or Darwin) or if one dismissed them as subjective reports of experience with no value as knowledge (as in the case of Edward Whymper). Rather, narrative itself should be rehabilitated as a form of knowledge. It is a medium for capturing experiences that cannot be identified conclusively. If what is narrated in the travel reports is reduced to a chronicle of factual discoveries, then their distinctiveness gets lost in the process. To cite Forster once more, it is therefore important to maintain "the eloquent simplicity of expression" as a "direct description of one's own observations." Nonetheless, that can only be achieved if one recounts the experiences of nature wrested from the adversities of the journeys by means of the original reports—that is, with fondness for their wording. Yet why should these written travel experiences be remembered? For those of us who engage with them, this question no longer needs to be asked.