

AT HOME IN THE FIELD:  
SMITHSONIAN TROPICAL SCIENCE FIELD  
STATIONS IN THE U. S. PANAMA CANAL ZONE  
AND THE REPUBLIC OF PANAMA\*

By the 1960s many biologists affiliated with North American institutions were intent upon establishing a new kind of field station within tropical America. Conditions at such new stations contrasted with those at tropical medicine research centers, commodity-oriented agricultural research stations like those run by the United Fruit Company, or established botanical centers such as the Atkins Garden and Research Laboratory in Cuba.<sup>1</sup> Absent were the arboreta, the crop demonstration plots, full-scale expatriate residences and most home comforts. Absent too were the nearby plantations served by the economic botany practiced at the agricultural stations.

Location, in isolation, was everything. Convenient daily access to remote and relatively undisturbed tropical environments was essential to the scientific undertaking of these new stations. In the 1953 first edition of his pioneering ecology textbook, Eugene P. Odum had written, "Field work is the

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<sup>1</sup> For many years the Atkins Garden and Research Laboratory was closely affiliated with Harvard University. In 1959 Harvard lost its access to the facility, now known as Cienfuegos Botanical Garden; Donald Stone, "The Organization for Tropical Studies (OTS): A Success Story in Graduate Training and Research," in Frank Almeda and Catherine Pringle, eds., *Tropical Rainforests: Diversity and Conservation* (San Francisco: California Academy of Sciences, 1988), pp.144-145; National Academy of Sciences-National Research Council, *A Report on the Conference on Tropical Botany, Fairchild Tropical Garden, May 5-7, 1960* (Washington, D.C.: National Academy of Sciences-National Research Council, Division of Biology and Agriculture, 1960), pp. i-iii.

heart of any ecology course and is the basis on which the unique features of the science rest.”<sup>2</sup> By the 1960s, Odum’s North American colleagues were determinedly extending tropical research agendas well beyond medical or commodity-based projects or specimen collection for taxonomic studies. The new stations provided improved fieldwork opportunities for long-term hypothesis-driven basic research into the origins, evolution, and natural dynamics of diversity in tropical environments and tropical ecosystems. Just as important, they provided venues for undergraduate and graduate training in field biology.<sup>3</sup> To an outsider’s eye one of these stations might have resembled an isolated squatter’s shack, minus even the squatter’s small farming plot. To its scientific clientele, it was a shelter surrounded by a stimulating outdoor laboratory of largely intact tropical forests or marine environments.

This new direction of Neotropical field research and the consequent surge of interest in biological field stations was furthered in a series of meetings and conferences held in Florida, Costa Rica, Trinidad, and Jamaica between 1960 and 1963, mainly supported by the U.S. National Science Foundation (NSF).<sup>4</sup> These meetings resulted in the establishment of the Association for Tropical Biology (ATB), founded in 1962 as a professional and publishing association focused on tropical field science, and the Organization for Tropical Studies (OTS), created in 1963 as a field-based educational consortium, with almost entirely North American institutional membership.<sup>5</sup> Researchers at the meetings, most of them U.S.-based or U.S. expatriates, assessed contemporary needs and opportunities in Neotropical field science. They concluded that appropriately located field stations—ensconced in nature and isolated from other land uses—were a pressing requisite for advancing research and for training students, mostly North Americans, particularly in new areas of ecological and evolutionary inquiry.<sup>6</sup>

Isolated wilderness “laboratories” greatly amplified possibilities for long-term biological research. In many cases the new biological stations also relied on their physical remoteness to safeguard the wilderness status and

<sup>2</sup> Eugene P. Odum, *Fundamentals of Ecology* (Philadelphia: W.B. Saunders, 1953), p. vi.

<sup>3</sup> NAS-NRC, *Conference on Tropical Botany*, p. 2, pp. 7-8.

<sup>4</sup> As with other areas of science, funding for the upturn in these activities was partly driven by the psychological fallout on America from Sputnik; A. C. Smith memorandum to Mrs. Ann S. Campbell through Dr. Kellogg, 11 April 1962, Smithsonian Institution Archives [SIA] Record Unit [RU] 50, Box [B] 216, Folder [F]: Tropical Biology; Association for Tropical Biology, “Minutes of the Regular Meeting of Council,” Barro Colorado Island, 4-8 November 1963, SIA RU 50, B216, F: Tropical Biology; Ira Rubinoff, interview by Pamela M. Henson, 21 April 1989, SIA RU 9582.

<sup>5</sup> Stone, “OTS,” pp. 144-151.

<sup>6</sup> NAS-NRC, *Conference on Tropical Botany*, p. 4, pp. 6-8; A. C. Smith memorandum to Dr. [Leonard] Carmichael, 18 Dec 1962, “Official detail of October 15-31, 1962, for South American trip, SIA RU 50, B32A, F: CZBA 1928-63; Association for Tropical Biology, “Minutes,” 4-8 November 1963.

associated scientific utility of their outdoor “laboratories.” But because these tracts rarely belonged outright to a station’s sponsors, scientists associated with them were often destined to an eventual reckoning with issues of local resource use and land allocation. Rapidly rising populations and agrarian reform, squatter invasions, and resource depletion all soon threatened the scientific research value of these tropical environs. These field scientists thus found themselves drawn into environmental and political issues that were unexpectedly germane to the preservation of their natural laboratories. For example, by the late 1960s scientists at the Rincón field station on Costa Rica’s Osa Peninsula were among those forced to such reckonings. Around 1962, Rincón had become one of the first new tropical stations established on this impetus. Two U.S. expatriate scientists had an opportunity to build a small field station as the invited tenants of U.S. based timber company *Osa Productos Forestales* (OPF), which held title to much of the peninsula. Short- and long-term research from the station, and field courses mostly run by OTS, utilized the largely uninhabited peninsula’s many undisturbed ecosystems, from lowland wet forests and mangrove swamps to upland and cloud forests. But by the late 1960s, invasions by untitled squatters and the timber company’s large-scale clearing plans were each threatening these ecosystems. To counter these other land-use imperatives, by 1969 several foreign scientists associated with the Osa station reluctantly took on new roles as conservation advocates.<sup>7</sup>

In 1972, confidence artist and erstwhile second manager of OPF, Donald Allen, while perpetuating a real-estate scam, actually forced Rincón field station to close, terminating several long-term research projects and the scientific training. (About a year later Allen burned all OPF’s timber cruise records, cleared out the till, and absconded over the border to Panama.) Nonetheless, a significant group of U.S. scientists remained engaged in the Osa conservation battle, even as they began new research projects elsewhere. In 1975, after years of fact-finding, lobbying and coalition building, an alliance of North American and Costa Rican scientists and park administrators convinced the country’s president to designate about a third of the

<sup>7</sup> Dr. Leslie Holdridge and Dr. Joseph Tosi founded the Rincón station shortly after together co-founding the Tropical Science Center (TSC) in San José, Costa Rica, which administered it. Holdridge had attended the 1960 meeting in Miami, and TSC staff remained active in ATB and associated (often contentiously) with OTS. NAS-NRC, *Conference on Tropical Botany*, p. iii; for more on this station’s history and its role in Osa conservation, see Catherine A. Christen, “Development and Conservation on Costa Rica’s Osa Peninsula, 1937-1977: A Regional Case Study of Historical Land Use Policy and Practice in a Small Neotropical Country” (Ph.D. diss., The Johns Hopkins University, 1995), and Catherine A. Christen, “Tropical Field Ecology and Conservation Initiatives on the Osa Peninsula Costa Rica 1962-1973,” in *Twentieth Century Sciences: Beyond the Metropolis, Vol. III: Nature and Environment* (Paris: ORSTOM, 1995).

Osa as Corcovado National Park. For the first time in Costa Rican history, a park's establishment was brought about on the basis of the conservation and scientific value of its constituent ecosystems. New rudimentary scientific field stations were soon functioning close to ranger stations inside the park, whose 34,346 hectares (78,848 acres) now constituted an expansive and protected outdoor laboratory.<sup>8</sup>

As at Rincón de Osa and other North American operated biological field stations, in the 1960s the Smithsonian Institution's Canal Zone Biological Area (CZBA), an island in the U.S. Panama Canal Zone, was characterized by isolation, lack of engagement with the Republic of Panama and the virtual absence of Latin American researchers. Yet CZBA also represented a distinctive example, consistently having relied more on political rather than physical isolation to safeguard its field research activity. CZBA was also unparalleled in its longevity as a Neotropical biology research station, its institutional antecedents dating to 1924. With its laboratory, library, researcher barracks, established trails, and local species collections, CZBA was regularly acknowledged as the contemporary gold standard by those involved in the NSF-funded meetings. During the 1960s, CZBA's Smithsonian administrators capitalized on this politically sanctioned seclusion and vanguard position to effect its transformation into the Smithsonian Tropical Research Institute (STRI), a tropical research complex whose several new field station venues boasted increasingly sophisticated indoor laboratories and facilities, perpetuating STRI's distinctiveness. Not until two decades later was institutional development of this magnitude approximated by a few other biological stations in tropical America, such as La Selva in Costa Rica, operated by OTS.<sup>9</sup>

By the mid-1970s STRI's administration and scientists found that the continued development and ultimate survival of their institute and its research activities would require a new level of reckoning with political, social and natural resource issues in the Republic of Panama. During the 1970s and 1980s, STRI responded to both scientific incentives and political conditions that challenged the institute to grow further and to abandon the historical sequestration of its field stations inside the U.S. Canal Zone. This period was characterized by STRI's establishment of new field stations

<sup>8</sup> Donald Allen, a U.S. citizen, was interested in profiting from a real estate scam he called "Rincon Resorts," one of several crooked speculations he perpetrated during the 1960s and 1970s from Alaska to Panama and perhaps beyond; Christen, "Development and Conservation."

<sup>9</sup> Originally Leslie Holdridge's farm retreat, La Selva's transformation from field station to "world-class research center" took place during the 1980s. See David B. Clark, "La Selva Biological Station: A Blueprint for Stimulating Tropical Research," in *Four Neotropical Rainforests*, ed. Alwyn H. Gentry (New Haven: Yale, 1990), pp. 9-14.

inside the Republic of Panama, including a marine station in the indigenous *Comarca* (district) of Kuna Yala, and by formal STRI agreements with the Panamanian government and outreach to local populations and to Latin American professionals.

BARRO COLORADO ISLAND:  
A RESEARCH ENCLAVE MADE IN POLITICAL ISOLATION

Barro Colorado Island (BCI) is actually the top of a hill whose base was submerged when the Chagres River was dammed and Gatun Lake created during the construction of the Panama Canal. In 1922 and 1923, during an early period of North American interest in station-based tropical field science, several influential U.S. scientists, among them Thomas Barbour, director of Harvard's Museum of Comparative Zoology, and William Morton Wheeler, a Harvard entomologist, along with the Panama-based James Zetek, former U.S. Canal Commission entomologist, focused on BCI as a possible site for a North American scientific field station in Latin America. BCI was located within a ten-mile wide swath of U.S. sovereign territory inside the Republic of Panama, known as the United States Panama Canal Zone. By 1923 the scientists had persuaded U.S. Canal Zone governor Jay Morrow to declare the island's 3,609 acres (1,572 hectares) a nature preserve reserved for scientific purposes. A year later this preserve was opened to researchers as the privately run Barro Colorado Island Biological Laboratory, funded by Barbour and other wealthy U.S. scientific patrons, and utilized by several of them and by other U.S.-based "research men."<sup>10</sup>

BCI was thus triply isolated, as an island, as U.S. territory, and as a scientific reserve. First, as an island, it was surrounded by the waters of Gatun Lake. This alone would have afforded little protection from the forest clearing, agriculture, urbanization and other kinds of land use then occurring in Panama. After all, the island was only a few miles from the heart of Panama

<sup>10</sup> Quotation from David Fairchild, "Barro Colorado Island Laboratory," reprint from *Journal of Heredity*, Washington, D.C., Vol. XV, No. 3, March 1924, p. 105, SIA RU 135, B10, F5; Thomas Barbour, manuscript, "In the Beginning," pp. 1-5, SIA RU 135, B10, F5; *Annual Report of the Smithsonian Institution for 1947* (Washington: United States General Printing Office, 1948), p. 126; J. E. Graf, "Canal Zone Biological Area," p. 16, SIA RU 135, B10, F5; Martin Moynihan, "General Information Concerning Facilities for Study at Canal Zone Biological Area (Barro Colorado Island)," *Turtlex News* 37:1 (January 1959), pp. 2-5, SIA RU 135, B10, F5; Frank B. Jewett letter to Dr. Alexander Wetmore, 14 June 1945, SIA RU 135, B10, F6. For more on this station's creation and early years, see Pamela M. Henson, "Invading Arcadia: Women Scientists in the Field in Latin America, 1900-1950," *The Americas* (Spring 2002), pp. 582-589, and Joel B. Hagen, "Problems in the Institutionalization of Tropical Biology: The Case of the Barro Colorado Island Biological Laboratory," *History and Philosophy of the Life Sciences* 12 (1990), pp. 225-247.

City. In fact, to consolidate the reserve's establishment, a handful of BCI settlers had to be indemnified, out of Barbour's pocket, for their leasehold improvements. But second, BCI, itself U.S. territory, was also surrounded by U.S. territory. The island was harbored within a politically sovereign inholding patrolled by the U.S. military and reserved to uses determined by the United States. Relations between the island's scientific patrons and the Canal Zone government were consistently cordial, sometimes close, and BCI researchers had regular access to Canal Zone facilities and U.S. Canal company transport. Those indemnified settlers were actually relocated off the island by the U.S. Canal Commission's land-lease division, then leasing land in the Canal Zone to individuals interested in small-scale agriculture. Bill Irwin, a representative of the land-lease division, and a friend of Zetek, personally saw to the indemnified settlers' relocation. In fact, according to Zetek, who soon became the island station's longtime resident manager, Irwin was also the man who had first identified BCI as a likely spot for a Canal Zone reserve.<sup>11</sup> Third, BCI was further sequestered on behalf of scientific research. This combination of U.S. affiliation and science reserve status protected the island exclusively for North American science researchers from the time of its inception well into the mid-twentieth century. Finding sufficient funds to maintain the private station's upkeep consistently was a more troublesome issue, but Zetek and BCI's benefactors always managed somehow.<sup>12</sup>

Remarking on the paradox of this political protection, one mid-century observer noted that as a nature reserve, Barro Colorado Island was at once "very easy and very difficult to reach," an enclave "accessible only to the careful study of science" in the very heart of a global crossroads. Located mid-Canal within hailing distance of a daily parade of ships of all nations and a few minutes' motorboat ride from a Canal Zone train station, the island, he said, was nonetheless "something like a sacred city . . . penetrable only to those initiated in the study of nature . . . while nearby regions were depopulated by fire, the axe, and the armaments of civilization." On the island, "hunters, collectors of firewood, tourists and all other elements

<sup>11</sup> Barbour, "In the Beginning," p. 2; James Zetek, manuscript, "The History of Barro Colorado," p. 5, SIA RU 135, B10, F5.

<sup>12</sup> As Henson explores elsewhere in this issue, in "Invading Arcadia" pp. 582-589, the island was also effectively off-limits to North American research scientists who were women. They were allowed day-time visits only, hardly adequate conditions for most field research; James Zetek letter to C. A. McIlvaine, 29 January 1924, Smithsonian Tropical Research Institute, Earl S. Tupper Tropical Sciences Library [hereafter STRI Library], Canal Zone Biological Area Vertical File [hereafter CZBA VF]; Stanley Heckadon-Moreno, *Naturalistas del Istmo de Panamá: un siglo de historia natural sobre el puente biológico de las Américas* (Panama: Editorial Santillana, 1998), pp. 143-144.

which could have perturbed its inherent nature have been excluded through strict [legal] injunction and careful patrol. . . .”<sup>13</sup>

By the time this description was written in 1950, the island had undergone a few changes of administration. These had accorded it enhanced political permanence under the U.S. system. In 1940, a U.S. Congressional authorization had reaffirmed BCI’s set-aside as a natural area for scientific study, now under federal control, renaming it the Canal Zone Biological Area (CZBA). In 1946, during the tenure of ornithologist Alexander Wetmore as Secretary of the Smithsonian Institution, CZBA was transferred to the Smithsonian.<sup>14</sup>

By 1946, the Smithsonian Institution and Smithsonian scientists had long been involved in tropical American field research. For many years both before and after 1946, most Smithsonian scientists’ participation in such research consisted of extended specimen-collecting expeditions, essential to their taxonomic and systematics research and their curatorial duties at the Smithsonian’s Museum of Natural History. While some stopped over at BCI during these trips, few saw any need for a field-based Smithsonian tropical science program or even a permanent Neotropical field station. For them, CZBA was at best only an occasional logistical convenience. Wetmore, who did field work in locations throughout Panama during his long scientific career, was himself favorably inclined towards field stations, having endeavored to establish a Smithsonian biological field station on Ecuador’s Galapagos islands before the onset of World War II foiled these plans. Significantly for later events and probably because of its remoteness from Washington, D.C., from the outset CZBA was accorded full Bureau status within the Smithsonian’s infrastructure, administratively on a par with the entire Museum of Natural History.<sup>15</sup>

The Smithsonian Institution had definitively launched its field station career. Still, for many years little changed at BCI, either in terms of its funding levels or functioning. James Zetek remained the CZBA’s sole full-time

<sup>13</sup> Eugene Eisenmann, “Panama Canal Zone Faunal Conservation,” manuscript, 1950; Eugene Eisenmann, *Annotated list of Birds of Barro Colorado Island, Panama Canal Zone*, Smithsonian Miscellaneous Collections, 117:5 (Washington: Smithsonian Institution, 1952); Heckadon, *Naturalistas*, p. 207.

<sup>14</sup> Jewett to Wetmore, 14 June 1945; *Annual Report of the Smithsonian Institution for 1946* (Washington: United States Government Printing Office, 1947), p. 13.

<sup>15</sup> R[ichard] S. Boardman memorandum to [S. Dillon] Ripley, 8 February 1965, SIA RU 429, B6, F: Field Stations, 1964-1965; William Stern, interview by author, Gainesville, Florida, 3 July 1997; Pamela M. Henson, “The Smithsonian Goes to War: The Increase and Diffusion of Scientific Knowledge in the Pacific,” in Roy M. MacLeod, ed., *Science and the Pacific War: Science and Survival in the Pacific, 1939-1945* (Amsterdam: Kluwer Academic Publishers, 2000), pp. 27-50.

professional staff member. While Zetek had never earned a Ph.D., he had published on applied entomology. Now a Smithsonian employee, as resident naturalist he continued operating on a shoestring budget, administering to the growing numbers of variously affiliated North American scientists. During these years their research at BCI principally focused on taxonomy, systematics, and natural history, although some of these visiting scientists also carried out a number of significant physiological and behavioral studies.<sup>16</sup>

#### MARTIN MOYNIHAN: TRYING TO START “A REALLY NEW DAY” FOR CZBA

In 1957 Dr. Martin Moynihan was appointed the CZBA's new resident naturalist and administrator. Unlike Zetek, Moynihan's professional training and experience were equivalent to those of the many university researchers who visited the Smithsonian station. He had received his doctorate in zoology at Oxford University with ethologist and future Nobel laureate Niko Tinbergen. He came to CZBA from a postdoctoral position as a research fellow with renowned evolutionary systematist Ernst Mayr, at Harvard's Museum of Comparative Zoology. Moynihan had known and been mentored by Mayr since the mid-1940s, when Mayr was at the American Museum of Natural History in New York, and Moynihan was a Horace Mann School student interested in birds.<sup>17</sup> As a field biologist Moynihan's research focused on animal behavior and evolution. Along with his academic qualifications, that he was unmarried and therefore “might be able to live for a long time on the island” also told in Moynihan's favor, according to Smithsonian Secretary Leonard Carmichael, who appointed him to the CZBA post.<sup>18</sup> After Zetek's 1956 retirement, CZBA's second manager and resident naturalist, Carl Koford, had stayed only one year and had proven administratively somewhat ineffective, partly because he had trouble fitting his family's life into the patterns of existence at the island field station. Informing an associate of Moynihan's arrival, Carmichael enthusiastically—or wearily—noted, “I certainly hope that Dr. Moynihan's appointment means the start of a really new day at Barro Colorado Island.”<sup>19</sup>

<sup>16</sup> Martin H. Moynihan memorandum to Leonard Carmichael, 5 July 1963, SIA RU 197, B1, F: POL1A-2; *Smithsonian Annual Report 1947*, p. 127; A. S. Campbell memorandum to A. C. Smith, 30 January 1963, SIA RU 50, B32A, F: CZBA 1928-1963; Heckadon, *Naturalistas*, pp. 139-149.

<sup>17</sup> Heckadon, *Naturalistas*, p. vi., p. 147; Crawford H. Greenewalt letter to Leonard Carmichael, 1 July 1957, SIA RU 135, B8, F7; Leonard Carmichael memorandum to J. E. Graf and Remington Kellogg, 1 July 1957, SIA RU 135, B8, F7; Neal Griffith Smith, “In Memoriam: Martin Humphrey Moynihan, 1928-1966,” *The Auk*, 115: 3 (July, 1998), pp. 755-758.

<sup>18</sup> Carmichael to Graf and Kellogg, 1 July 1957.

<sup>19</sup> Leonard Carmichael letter to Crawford H. Greenewalt, 9 July 1957, SIA RU 135, B8, F7; Greenewalt, board chairman of DuPont, an authority on hummingbirds and a Smithsonian Regent, had recommended Moynihan for the post, on the advice of Dr. Charles Sibley, Professor of ornithology at Cornell,



Moynihan soon made it clear that, in his scientific and administrative judgment, it was time CZBA started a really “really new day,” not only at BCI, but also elsewhere within the U.S. Canal Zone. He wanted to rededicate the island to its historical privilege of scientific isolation, institutionalize that science within a professional CZBA staff, and expand the bureau’s field station presence onto the mainland. Despite the picture of BCI as a sacred city for scientific savants, the island, famous from popular writings such as Frank Chapman’s *My Tropical Air Castle: Nature Studies in Panama*, had also become a destination for tourists to the Canal Zone. Soon after he arrived, Moynihan found that, “As presently organized, the CZBA is very much a hybrid, half research station and half hotel for miscellaneous tourists—all too often tourists who have no serious interest in research, or even biology. It is really impossible to reconcile these two aspects of the bureau. . . .” The enabling act establishing CZBA explicitly authorized only scientists and students to use BCI. In practice, for U.S. \$3.00 each, other visitors were allowed day trips to the island. With scientists being interrupted and annoyed, and tourists being incommoded and likely as not seeing no animals, Moynihan strongly advised “completely suppressing” the tourist facilities, to dedicate this Smithsonian bureau to its “ideal” function as a research organization.<sup>20</sup> This would help create the appropriate circumstances for the permanent scientific staff Moynihan hoped to accrue to CZBA. By 1958 he had taken the first step towards assembling such a staff by hiring “temporary assistants” in a program he initiated “to encourage promising young scientists to conduct special, short-term research projects” at BCI.<sup>21</sup>

In 1959 Moynihan also increased “the available opportunities for research” by arranging for CZBA’s acquisition from Canal Zone authorities of a half-mile square plot for field research on the mainland, inside a 70 square mile area called the “Navy Pipeline Reservation.” Barro Colorado, despite its layers of legal and physical protection, was still nothing more than one tropical hilltop converted into a small tropical island, almost entirely covered in “essentially mature forest.”<sup>22</sup> Its flora and fauna may

also a Moynihan mentor; Greenewalt, to Carmichael, 1 July 1957. Carmichael, to Graf and Kellogg, 1 July 1957; Larry Van Dyne, “The Sun King Ambitions of Dillon Ripley,” *Washington Magazine*, December 1979, p. 210; Smith, “In Memoriam,” p. 755, notes that Sibley, Mayr, and Eugene Eisenmann all later claimed to have been solely responsible for prompting the hire of Moynihan to this position.

<sup>20</sup> All quotations, Martin Moynihan memorandum to Remington Kellogg and James Bradley, 6 August 1962, SIA RU 50, B32A, F: CZBA 1928-63; Heckadon, *Naturalistas*, pp. 155-159; A. C. Smith to Dr. Martin B. Moynihan, 26 December 1962, SIA RU 50, B32A, F: CZBA 1928-63.

<sup>21</sup> [Martin Moynihan], “Canal Zone Biological Area: Accomplishments from 1953 to 1964,” n.d. [September 18, 1963], SIA RU 135, B11, F1.

<sup>22</sup> [Moynihan], “Canal Zone Biological Area: Accomplishments.”

have been secured from depopulation “by fire, the axe, and the armaments of civilization,” but other environmental factors were limiting BCI’s potential for emerging research interests.<sup>23</sup> Wide-ranging predatory fauna had effectively disappeared, and many frugivorous faunal species were subject to periodic massive die-offs, the latest one during 1958-1959.<sup>24</sup> The new Pipeline site consisted of “mixed grassland, second-growth scrub, and forest of different ages and types.”<sup>25</sup> In a *Turtlox News* article, Moynihan specified that this area was ecologically a “complete contrast to the Island and thus studies of an entirely different nature may be made there” yet it was also accessible and located in a protected, military-controlled site.<sup>26</sup>

Historically, BCI-based researchers had regularly extended their observation and collecting activities beyond the island, within the entire Canal Zone and throughout Panama. To do so, they took advantage of the excellent local transportation network, which included the Panama Canal railroad, automobile roads, and marine launches.<sup>27</sup> Moynihan soon found himself continuing this practice, leaving the island to conduct much of his own animal behavior research. He quickly concluded that formal mainland expansion was critical for CZBA’s institutional development as a research organization. Evidently the Pipeline foothold provided an expeditious first step.<sup>28</sup>

By July 1962 Moynihan outlined to Remington Kellogg and James Bradley, Secretary Carmichael’s two top administrators, the next step he desired CZBA to take in field station expansion, creating a marine laboratory at Galeta Island. Galeta was attached to the mainland by a two-lane highway over a tidal creek at the Atlantic end of the Canal Zone. Moynihan wanted the Galeta lab in order to facilitate the postdoctoral research of Harvard doctoral candidate Ira Rubinoff, who was studying the evolutionary and behavioral divergence between related pairs of Atlantic and Pacific Ocean fish species after more than a million years of reproductive isolation. Single species that had once lived in both oceans had diverged into two or more species after being separated by the closing of the Isthmus of Panama.

<sup>23</sup> Eisenmann, “Panama Canal Zone.”

<sup>24</sup> *Smithsonian Annual Report 1947*, p. 126; recent studies indicate the frugivore die-offs have been caused by preceding short, rainy, dry seasons that prevent sufficient flowering and hence lead to insufficient fruit production; S. Joseph Wright, C. Carrasco, O. Calderón and S. Paton, “The El Niño Southern Oscillation, variable fruit production and famine in a tropical forest.” *Ecology* 80:5 (1999).

<sup>25</sup> [Moynihan], “Canal Zone Biological Area: Accomplishments.”

<sup>26</sup> Moynihan, “General Information Concerning Facilities,” p. 5. *Turtlox News* was published by Chicago’s General Biological Supply and widely distributed to its clients, potential visiting researchers at CZBA. Remington Kellogg letter to Blair Coursen, 17 November 1958, SIA RU 135, B10, F6.

<sup>27</sup> Fairchild, “Barro Colorado Island Laboratory,” p. 111.

<sup>28</sup> Moynihan, to Kellogg and Bradley, 6 August 1962.

Understanding the divergence between species pairs could offer keys to the tempo and modes of evolutionary change in these communities, providing the means for calculating a kind of evolutionary clock. Rubinoff intended to conduct breeding tests on species pairs of inshore fishes to learn how measured morphological changes might be correlated with degrees of genetic divergence. He had begun the lead-up to this project during three-month visits to BCI and Panama in 1961 and 1962 for his doctoral research under advisor Ernst Mayr. Since Secretary Carmichael appeared ready to authorize some new positions for CZBA's science staff, Moynihan hoped to add Rubinoff in that way or at least bring him in on an outside grant.<sup>29</sup>

Remington Kellogg, the Assistant Secretary in charge of scientific affairs, countered with several objections. Some of these he shared with Moynihan. First, Kellogg argued, for several years CZBA had been exceeding its \$10,000 statutory limitation on funding authorized in its 1946 U.S. Congressional appropriation. By 1962 CZBA was already spending more than five times that limit. Before anything else, the Smithsonian would have to apply to have this statutory limitation removed.<sup>30</sup> Also:

thorough study has revealed that the Act which established the CZBA nowhere expressly or implicitly gives the Smithsonian Institution the authority to obligate Federally appropriated funds for the maintenance and operation of a research facility outside the prescribed area of Barro Colorado Island. Thus, the Institution would lack justification for a request for appropriated funds to establish a marine biology station in another area.<sup>31</sup>

<sup>29</sup> Remington Kellogg and James Bradley memorandum to Dr. Martin H. Moynihan, 31 July 1962, SIA RU 50, B32A, F: CZBA; Moynihan to Kellogg and Bradley, 6 August 1962; Martin H. Moynihan memorandum to Dr. Remington Kellogg, 14 August 1962, SIA RU50, B32A, F: CZBA; Ira Rubinoff letter to Dr. Remington Kellogg, 28 August 1962, SIA RU 50, B32A, F: CZBA; I. E. Wallen memorandum to Dr. Remington Kellogg, through Dr. Albert C. Smith, 7 September 1962, SIA RU 50, B32A, F: CZBA; Rubinoff interview, 21 April 1989.

<sup>30</sup> Kellogg was the Assistant Secretary in charge of scientific affairs, and Bradley the Assistant Secretary in charge of administration, but at that time both of these positions were titled only "Assistant Secretary." Kellogg and Bradley to Moynihan, 31 July 1962; M[artin] Moynihan memorandum to Miss Maria M. Hoemann, 30 June 1964, SIA RU 50, B32A, F: Budget.

<sup>31</sup> Kellogg and Bradley to Moynihan, 31 July 1962. The memo lists the two authors, but the first sentence begins with "I." The memo's content and that of adjacent documents in this file, as well as other available information at SIA clearly indicate the "I" in question is Kellogg, not Bradley; A 1954 CZBA inquiry about constructing a hydrobiology laboratory in the Atlantic marine Canal Zone area was favorably received by the U.S. Canal Zone governor and other authorities, contradicting Kellogg's implication that such a development, off BCI, would be opposed by U.S. government officials. That initiative was led by J. E. Graf, Assistant Secretary (then Acting Secretary), and Dr. R. B. Withrew, chief of the Smithsonian Astrophysical Observatory's Radiation and Organisms division, along with Zetek. Why this facility was not built is not evident from the following documents, but lack of funding or perhaps a deficit of zeal on Zetek's part, facing his wife's illness and death and his own ill health, may hold the answer.

Kellogg added that Dr. Irvin Eugene Wallen, Assistant Director for Oceanography at the Natural History museum, did not believe Galeta possessed the “required essential characteristics” for a marine biology laboratory. Many Smithsonian staff members knew Kellogg as the “abominable no-man” for his insistent negativity about any initiative regardless of content. His correspondence certainly expressed little sympathy for the prospect of growth, ever, at CZBA.<sup>32</sup>

Confronted with this response, in an early August memorandum Moynihan redoubled his endorsement of Galeta, of Rubinoff and of his project. He also predicted that CZBA would soon have no choice but to expand geographically, “[q]uite apart from any question of marine work.” Since BCI’s ecological uniformity meant that many “organisms which can be studied very easily in adjacent parts of the Canal Zone or the Republic of Panama” were not available on the island, most of the expanded CZBA research activities would have to take place off-island. Moynihan stressed how desirable it would be for the Smithsonian bureau to secure additional land on the mainland, where long-term field researchers could function as more than just casual visitors, with protected access and probably even with suitable field research and housing facilities. He warned that, “In any case, the area available for laboratories and living quarters on BCI is strictly limited, and we are already uncomfortably crowded during peak seasons (such as this Summer).” He asked whether it wouldn’t be “simpler and more sensible” to ask Congress to approve a reorganization and expansion of the bureau’s research activities at the same time as applying to remove the \$10,000 limitation. He asked that his concerns be brought to Dr. Carmichael’s attention. In closing, he politely threatened that “I would not feel justified in remaining at the CZBA for more than one more year, approximately, unless there is some real, definite prospect of turning the bureau into a first-rate research institution.” Voicing his willingness to resign proved a useful negotiating tactic, or at least an expedient venting mechanism that Moynihan periodically employed in times of frustration during the 17 years he ran this Smithsonian bureau.<sup>33</sup>

J. E. Graf letter to Brigadier General John S. Seybold, 7 July 1954; [Governor] J. S. Seybold memorandum for Military Assistant David S. Parker, [12 July 1954]; James Zetek letter to Lt. Col. D. S. Parker, 14 July 1954; H. O. Paxson letter to Mr. J. E. Graf, [14 July 1954]; all in STRI Library, CZBA VF.

<sup>32</sup> Watson M. Perrygo interview, SIA RU 9516; Kellogg and Bradley to Moynihan, 31 July 1962.

<sup>33</sup> All quotations from Moynihan to Kellogg and Bradley, 6 August 1962; Phil[lip] Ritterbush to Mr. [S. Dillon] Ripley, 18 October 1966, SIA RU 99, B20, F: IBP General; S. Dillon Ripley to Dr. [Phillip] Humphrey, 20 October 1966, SIA RU 99, B20, F: IBP General; Neal Smith, “In Memoriam,” p. 758; Sidney R. Galler note to Dr. Martin H. Moynihan, 21 December 1965, SIA RU 254, B37, F1; Personal communication with author by Olga Linares, Panama City, Panama, February 1999.

Shortly after Dr. Carmichael read this memorandum, Kellogg let Moynihan know that the top administrators had decided to go forward with the request to raise the CZBA congressional budget cap for fiscal year (FY) 1964, but that nothing more would be done for the moment. Museum of Natural History director Dr. A. C. Smith would visit BCI in October and then provide further recommendations pertaining to CZBA's development. Smith was a botanist whose career had included several years each at New York Botanical Gardens, Harvard University's Arnold Arboretum, and the Smithsonian, and two years (1956-1958) at National Science Foundation, as Program Director for Systematic Biology. He was slated to succeed Kellogg as the Assistant Secretary in charge of scientific affairs, upon the latter's November retirement.<sup>34</sup>

Moynihan's particular choices for new field stations, including Pipeline and Galeta, evidenced his concern that the new sites provide more than ease of access to appropriate natural organisms and freedom from competing land use interests. They also had to address more visceral security issues that were components of the political world surrounding CZBA. Moynihan readily noted that the environments he sought to add to CZBA's complement usually were found in the Republic of Panama as well as in the Canal Zone. Still, throughout his directorship every serious effort he made to acquire field station properties for STRI within the Isthmus of Panama involved land inside the Canal Zone.<sup>35</sup>

Moynihan had arrived in Panama at a time of increasing civil strife. Periodic incidences of anti-U.S. sentiment, spurred by Panamanian nationalism and resentment of U.S. control over the Canal Zone, have occurred throughout Panama's national history. He was at BCI for two years by the time of one of the more violent outbreaks, spurred initially by an attempt by Panamanian students to plant small Panama flags in the Canal Zone on Panama's Independence Day in 1959. U.S. troops were brought in and in the ensuing clashes dozens of Panamanians and U.S. citizens sustained injury. Eventually U.S. President Eisenhower, by executive decree, ordered both nations' flags be flown together in certain spots within the Zone. As his colleagues recall, though Moynihan was personally somewhat anti-military, he believed the interests of his bureau were best served by keeping its contained within the Canal Zone, where they could bank on U.S. diplomatic and military pro-

<sup>34</sup> Remington Kellogg memorandum to Dr. Martin H. Moynihan, 15 August 1962, SIA RU 50, B32A, F: CZBA; [Albert Charles Smith], "Biographical Resume," n.d. [ca. 1960], Smith, Albert Charles Biographical File, SIA RU 7098.

<sup>35</sup> Moynihan to Kellogg and Bradley, 6 August 1962; Ira Rubinoff, interview by Pamela M. Henson, 7 June 1990, SIA RU 9582.

tection, maintaining a nearly non-existent profile outside in the Panamanian Republic.<sup>36</sup> One argument he offered the two Smithsonian Assistant Secretaries in mid-1962 to attest to the suitability of acquiring Galeta was that a reliable source in the Navy office had told him that even if the rest of the Canal Zone were ever to be handed over to the Panamanian Republic the U.S. government intended to retain the Galeta area.<sup>37</sup>

Around the end of August Moynihan telephoned and then wrote directly to Assistant Secretary James Bradley, the Smithsonian's crack administrative and federal law expert, asking some questions he felt Dr. Kellogg had repeatedly ignored. He wanted to know if he, Moynihan, might be permitted to inform the Navy commandant in charge of Galeta of Smithsonian's tentative interest in the facility, so the commandant wouldn't otherwise dispose of it when it was put into surplus. Being in the field, Moynihan knew that a key step in acquiring operating necessities, including field station land or facilities, was to work closely with the onsite officials in direct control of those assets. Acquiring a surplus installation would lower subsequent construction costs for CZBA, and Moynihan did not want to lose this opportunity to gain an economical and well-sited facility.<sup>38</sup>

Moynihan continued to maintain CZBA's good relations with Canal Zone authorities, but he knew that past a certain point he could not act without authorization from Washington. Without giving the go-ahead on this step, Bradley did telegram Moynihan some indications about who was thinking what in Washington: "Dr. Wallen advised strongly against Galeta because unsuitable for marine research. My concern is proper authorization for permanent station off Barro Colorado." Bradley was offering a subtly more positive articulation of the problem than Kellogg had. Now that authority for mainland facilities had been raised as a red flag, Bradley wanted to be sure to secure the necessary authorization, implying that that if Smithsonian couldn't ultimately endorse the Galeta plan, it would still quickly find ways to develop CZBA on the mainland.<sup>39</sup>

<sup>36</sup> Peter M. Sanchez, "Panama's Foreign Policy after the U.S. Withdrawal: The Limits of Sovereignty in the New World Order," paper prepared for delivery at the 2001 meeting of the Latin American Studies Association, Washington, D.C., 6-8 September 2001, pp. 2-4; Personal communication with author by STRI personnel, Panama City, Panama, February 1999; Rubinoff interview, 7 June 1990.

<sup>37</sup> Moynihan to Kellogg, 14 August 1962.

<sup>38</sup> Martin Moynihan letter to James Bradley, 25 August 1962, SIA RU 50, B32A, F: CZBA; Senate of Scientists Interviews, SIA RU 9508; Rubinoff interview, 21 April 1989. For more about relations with U.S. Canal Zone officials regarding facility development, see comment in note 31.

<sup>39</sup> James Bradley telegram to Dr. Martin H. Moynihan, 27 August 1962 [original telegram in all caps], SIA RU 50, B32A, F: CZBA; [James] Bradley note to Dr. [Remington] Kellogg, Dr. A. C. Smith,

As he must have told Bradley in some exasperation on the phone, Moynihan also had never received specifics on what Dr. Wallen and hence Dr. Kellogg thought unsuitable about Galeta as a marine research station. Seeking to identify the content of the objections, he reassured them that the facility was readily accessible by both land and water. He had Rubinoff write them to attest that the island was bordered by a fringing coral reef, the fauna abundant and appropriate, and the environmental conditions more stable than on the Pacific coast, making this an excellent site for basing a study of both Atlantic and Pacific species.<sup>40</sup>

Dr. Wallen's assessment, sent to Kellogg and Smith, actually focused little on either Galeta's logistical conditions or scientific aptitudes. His fundamental objection was that new Smithsonian marine science projects should not be developed outside the usual lines of Museum of Natural History research. Wallen acknowledged that the idea of a study comparing Atlantic and Pacific fishes had merit. But Rubinoff's plan did not accord with Wallen's view of how "an employee of the Smithsonian Institution" should do such a study. To Wallen's mind, it "would entail a literature review, a study of existing collections at museums, and a brief period of supplementary field collecting from a borrowed or rented boat." With such a minor field component, he judged "perhaps a worthwhile project must be denied because of the unnecessary (in my opinion) linkage to establishment of a marine station." Wallen's study plan ignored Rubinoff's own, and discounted the fact that Rubinoff's project would build on his by then completed Ph.D. literature review and prior collections study. The postdoctoral project's line of inquiry depended almost entirely on fieldwork with live organisms. Rubinoff would observe and catch the fish in the ocean shallows, and breed them in the field laboratory. By ignoring the kind of science Rubinoff was trying to do, Wallen had found a way obliquely to denounce CZBA acquisition of this Galeta station without acknowledging outright that CZBA's effort to expand its permanent research capacity might be making him feel threatened about his own authority and programs.<sup>41</sup> Kellogg shared Wallen's memo with Carmichael, but never with Moynihan, though at some point Moynihan certainly began to fathom that they just weren't talking about the same kinds of research projects as he was. Then, on September 12 Kellogg told Moynihan that Dr. Carmichael had decided "for various rea-

and [I. E.] Wallen, [August 1962], attached to Martin Moynihan letter to Mr. [James] Bradley, 25 August 1962, SIA RU 50, B32A, F: CZBA.

<sup>40</sup> Moynihan to Kellogg, 14 August 1962; Rubinoff to Kellogg, 28 August 1962.

<sup>41</sup> All quotations from Wallen to Kellogg, A. C. Smith, 7 September 1962; Moynihan to Bradley, 25 August 1962; Bradley to Moynihan, 27 August 1962.

sons” the Institution could not fund Rubinoff’s project at that time nor sponsor it indirectly on an outside grant application.<sup>42</sup>

By September 1962 Moynihan would have been looking forward to Kellogg’s retirement, especially if he had somehow learned about the degree of the Assistant Secretary’s nay saying. Back in May Kellogg had stated, “for the record,” his response to A. C. Smith’s tentative idea for some kind of Smithsonian “Institute of Tropical Biology,” a clearinghouse dedicated to helping build a multi-institutional network of field science facilities, programs, and projects addressing the rising interest in tropical biology. Kellogg, whose career had begun at the Museum of Natural History in 1928, here had informed posterity: “I am of the opinion that the Institution should avoid adding any additional programs which would be located outside of the Metropolitan Area of Washington, D.C.” Ironically, when Moynihan received his own copy of the Smith memorandum, he would have grasped immediately that Smith meant such an institute to be D.C. based. In this light, Moynihan might have felt just as apprehensive as Kellogg, though for converse reasons, thinking that Smith might be more interested in putting Smithsonian tropical science capital into supporting a Washington-based clearinghouse rather than the development of its own field-based research institute.<sup>43</sup>

During his single year as Assistant Secretary A. C. Smith actually added incrementally to the improving outlook for CZBA’s institutional growth. A botanical taxonomist focused on the tropics, Smith considered his work to be directly related to “the entire fields of evolution and biogeography.” With his background, interests, and NSF ties he was an apt Smithsonian representative at the 1960 Conference on Tropical Botany and subsequent related events, about which he regularly updated Secretary Carmichael and other administrators, including Moynihan. After presenting his “U.S.-based ‘Institute’” idea at the July 1962 Trinidad conference, Smith had then completely dropped it, because the other delegates, many based in Latin America, wanted any such clearinghouse to be “strictly international.”<sup>44</sup> During the

<sup>42</sup> Remington Kellogg memorandum to Dr. Martin H. Moynihan, 12 September 1962, SIA RU 50, B32A, F: CZBA; Martin Moynihan letter to S. Dillon Ripley, 27 October 1964, SIA RU 197, B1, F: POL1A-2.

<sup>43</sup> Moynihan had been sent the original Smith document, A. C. Smith memorandum to Mrs. Ann S. Campbell, through Dr. Kellogg, 11 April 1962, SIA RU 50, B216 F: Tropical Biology, and was sent Kellogg’s formal reply to this, Remington Kellogg memorandum to Dr. Leonard Carmichael, 31 May 1962, SIA RU 50, B216, F: Tropical Biology, but he had not been sent a copy of the other Kellogg memo, R[emington] Kellogg memorandum to “For the Record,” 16 May 1962, SIA RU 50, B216, F: Tropical Biology.

<sup>44</sup> A. C. Smith to Campbell, through Kellogg, 11 April 1962; [A. C. Smith], “Biographical Resume,” n.d. [ca. 1960]; biogeography quotation from Albert C. Smith, “Robert Allerton Award Recipient’s Response,” *The Bulletin: Pacific Tropical Garden* 9:4 (October 1979), in Smith, Albert Charles, Biographical File, SIA RU 7098.



October visit Smith helped Moynihan to explain to their invited NSF visitors the merits of funding an electric cable from the mainland to BCI. CZBA got that grant the following year. In December 1962, Smith and Bradley arranged to limit BCI tourism to visitors with a “legitimate interest” in natural history. They also secured for Moynihan the organizational title of CZBA “Director,” replacing “Resident Naturalist,” in line with other bureau heads at Smithsonian and with heads of U.S. biology research centers such as the Scripps Institution of Oceanography.<sup>45</sup>

At the July 1962 Trinidad meeting Smith had been impressed with how many delegates mentioned CZBA as an ideal field station facility. The conference as a whole recommended that BCI “be strengthened and perhaps expanded and more widely advertised” for use in small group training by biology professors.<sup>46</sup> About the same time an annotated list of “Biological Research Centers in Tropical America” was produced by W. H. Hodge and D. D. Keck of NSF, after a lengthy field survey. This lauded CZBA as being:

[w]ithout exception still the best field station in the wet lowland neotropics both from the standpoint of location and of facilities and a place where one can step from his dorm or lab immediately into undisturbed forest on established trails without wasted time or effort. An ideal spot for introducing student scientists to the bounty of the tropics.<sup>47</sup>

Forwarding this report to Carmichael in September, Smith noted, “I expect that we are not making the most of the unique training opportunities at CZBA,” and Carmichael jotted a line in agreement.<sup>48</sup> Still focused on expanding BCI training opportunities after his October visit, with Moynihan’s cooperation Smith wrote to Ernst Mayr and to Reed Rollins, director of the Gray Herbarium, in December 1962, to explore possibilities for a Harvard tropical biology course at CZBA. Facilitating training institutes wasn’t

<sup>45</sup> [A. C. Smith] “Preliminary Notes: Panama Visit October 1962,” typescript, SIA RU 50, B32A, F: Marine Laboratory; Mary K. Johrde letter to Dr. Martin H. Moynihan, 5 September 1962, SIA RU 50, B32A, F: CZBA 1928-63; Remington Kellogg letter to Miss Mary K. Johrde, 18 September 1962, SIA RU 50, B32A, F: CZBA; Paul H. Scherer letter to Leonard Carmichael, n.d. [9 February 1963], SIA RU 50, B32A, F: CZBA 1928-1963; A. S. Campbell to A. C. Smith, 30 January 1963; A. C. Smith letter to Dr. Martin H. Moynihan, 9 November 1962, SIA RU 50, B32A, F: CZBA 1928-63; A. C. Smith letter to Moynihan, 26 December 1962.

<sup>46</sup> A. C. Smith memorandum to Dr. [Leonard] Carmichael, through Dr. [Remington] Kellogg and Mr. [James] Bradley, 10 July 1962, SIA RU 50, B216 F: Tropical Biology.

<sup>47</sup> W. H. Hodge and D. D. Keck, mimeographed report on “Biological Research Centers in Tropical America,” National Science Foundation, Washington, D.C., 1962, p. 6, SIA RU 134, B10, F5.

<sup>48</sup> A. C. Smith memorandum to Leonard Carmichael, 17 September 1962, attached to Hodge and Keck report on “Biological Research Centers,” with handwritten notation by Carmichael, SIA RU 134, B10, F5; A. C. Smith to Campbell, through Kellogg, 11 April 1962.

the CZBA development foremost on Moynihan's mind, but he could see ways it might help with his own priorities. With BCI already so crowded during the visiting researcher season, if training programs really took hold they would provide one more reason why CZBA's own research content and geographic extension would have to expand.<sup>49</sup>

Nonetheless, after his October visit Smith told Carmichael that the Galeta plan appeared "impractical and unnecessary." Smith's private notes recorded that the site had no deepwater approach and no available fresh water, but didn't comment on its aptitude for research more reliant on access to inshore fishes and fringing reefs. More important, Smith still asserted that CZBA should remain geographically confined to BCI. In November 1962 he suggested to Carmichael: "I hope that we can imply full support for his [Moynihan's] efforts to make BCI a distinguished and useful field station, without encouraging him to diffuse his efforts in other areas and habitats of Panama."<sup>50</sup> It almost seems that his immersion in the NSF tropical biology meetings had Smith so accustomed to considering the merits of centrally isolated, bare-bones field stations that he wasn't adapted to thinking beyond this model. He wanted CZBA to remain an outstanding location for Neotropical field science, and the specific recommendation of the Trinidad conference was that CZBA might be expanded to increase its availability to the tropical biology training programs Smith so favored. Yet despite this, he still wasn't ready to foster a new phase of CZBA field station development that would help facilitate its radical transformation into a multi-site tropical research institute. Since he evidently felt that BCI could best advance wider developments in tropical field science by hatching a key training center, perhaps he hoped to forbid CZBA the non-pedagogical distractions of expanding its research opportunities into different habitats or more sophisticated field laboratory facilities. Possibly he just believed Moynihan or Smithsonian couldn't pull it all off.

Writing Moynihan in November 1962, Smith sidestepped the topic of off-island expansion while striking a positive general note: "I am sure that we can iron out any complications about the operations of Barro Colorado that have existed in the past and we shall also hope to speed up the matter

<sup>49</sup> In early 1963 Harvard became a charter member of OTS, which then focused on developing field courses in Costa Rica: Stone, "OTS," p. 144, p. 149; [A. C. Smith], "Preliminary Notes," October 1962; A. C. Smith letter to Dr. Ernst Mayr and Dr. Reed C. Rollins, 26 December 1962, SIA RU 50, B32A, F: CZBA 1928-63; M[artin] Moynihan to Carmichael, through Dr. A. C. Smith, 5 July 1963.

<sup>50</sup> All quotations from A.C. Smith memorandum to Dr. [Leonard] Carmichael, 18 December 1962, SIA RU 50, B32A, F: CZBA 1928-63; A. C. Smith to Moynihan, 26 December 1962; [A. C. Smith] "Preliminary Notes."

of processing [staff] appointments.”<sup>51</sup> In January 1963, Smith wrote that Bradley and Carmichael had again studied the legislation and remained loath to seek authorization for mainland facilities in FY1964, given their pending request to raise the BCI appropriations ceiling. But by then Smith was softening on his all-BCI stance, even encouraging half-measures that had doubtless been vetted with Carmichael and Bradley. He told Moynihan that even before any congressional changes CZBA could probably go ahead and erect a mainland research structure such as an observation tower, using private funds on privately owned or leased land. Still pondering training, he also suggested CZBA might even build “an inexpensive overnight shelter” using grant funds, so “you and your students could spend periods of some days there, to conduct special research such as dawn observations.”<sup>52</sup>

In February 1963 James Bradley let Moynihan know that it would be at least FY1965 before Congress would have removed both the spending cap and the geographic restrictions for CZBA. Conceding these realities, Moynihan still submitted a draft discussion of revised CZBA development objectives to Secretary Carmichael in July 1963, judging it “highly desirable to begin discussing our future policy as soon as possible.”<sup>53</sup> He did not wish to waste an opportunity to move things forward now that the tenor of his exchange with Washington had subtly shifted from present limits to future prospects, even granted Smith’s training bent.

In a related subtle shift, Moynihan’s July discussion deliberately built on the mutual cognizance of emerging trends in tropical biology that A. C. Smith’s memos had guaranteed among his correspondents, including Secretary Carmichael. This time, instead of asking for a single facility apparently tied to a particular project, Moynihan put forth an ambitious, comprehensive plan that recalled the interests of the NSF meetings’ participants and reflected the plaudits of the 1962 NSF field survey report. First, he put the

<sup>51</sup> A. C. Smith to Moynihan, 9 November 1962.

<sup>52</sup> Its delicate wording notwithstanding, Secretary Carmichael’s office still filed this letter under “marine laboratory.” A. C. Smith to Dr. Martin H. Moynihan, 3 January 1963, SIA RU 50, B32A, F: Marine Laboratory.

<sup>53</sup> The \$10,000 limit still wasn’t lifted for several years after this, but by the mid-1960s, Smithsonian, probably through Bradley, worked out an arrangement whereby the \$10,000 per year limit would apply only to spending for BCI, while the rest of CZBA/STRI would have access to another line containing whatever further level of appropriation Congress was willing to provide; Rubinoff interview, 7 June 1990; Martin Moynihan letter to Mr. [James] Bradley, 26 February 1963, SIA RU 50, B 32A, F: CZBA 1928-1963; James Bradley memorandum to Dr. Martin H. Moynihan, 7 March 1963, SIA RU50, B32A, F: CZBA 1928-1963; Martin H. Moynihan letter to Mr. James Bradley, 11 March 1963, SIA RU 50, B32A, F: CZBA 1928-1963; Moynihan to Carmichael, 5 July 1963, see marginalia.

case for the tropics and the widening range of topics to be pursued there via field-based research. As he put it, “The tropics include the “optimum” habitats for almost all types of organisms; the numbers and variety of species are much greater in the tropics than elsewhere . . . the materials for research on many aspects of evolution, ecology (e.g. competition) . . . and behavior (e.g. social reactions) . . . are simply more abundant, and therefore more accessible, in the tropics than elsewhere.”

Moynihan argued that CZBA, still first among the field-based operations, was uniquely placed to retain its preeminence amidst this surge of North American interest in Neotropical field science:

I think that the Smithsonian Institution is the most suitable organization to develop an extensive program of research on fundamental biological problems in the tropics. With proper preparation, it should be able to secure adequate funds from the Congress; and CZBA and other Smithsonian personnel have had considerable experience in organizing research in Panama. Other institutions have set up field stations or laboratories in various parts of tropical America in recent years, or have made plans to do so; but they all suffer from certain disadvantages . . . One or more of these institutions may be able to organize a full-scale program of research eventually; but they will not be able to do so as rapidly, efficiently, or cheaply as the Smithsonian. I feel, therefore, that this is one field in which the Smithsonian can and should take the lead . . . Within the Smithsonian Institution, the CZBA would seem to be the most suitable bureau to take charge of such a program.<sup>54</sup>

His plan described nothing less than an “institute for research on tropical biology as a whole,” capitalizing on Smithsonian’s foothold in Panama. He articulated a threefold vision for the new Smithsonian institute’s growth and continued relevance: expanding the range of research topics, increasing the number of permanent scientists to “about 5 or 6,” and adding new field station sites. The establishment’s research scope, he emphasized, for long mostly confined to systematic and faunal behavioral studies, would expand to include long-term research in behavioral, evolutionary, physiological and ecological studies.<sup>55</sup> By mentioning “ecological studies,” Moynihan quite likely was advisedly employing this increasingly favored term of the ATB conferees and field station pioneers who were often thinking about ecosystem ecology. Moynihan himself evidently was never personally convinced of the import of most ecological research, especially not for the particular research institute he was endeavoring to build at CZBA, being mainly focused on his “all-consuming interest,” evolution. Still, he must have

<sup>54</sup> Moynihan to Carmichael, 5 July 1963.

<sup>55</sup> *Ibid.*

thought it handy to use with his bosses words that evoked the other North American facilities and initiatives he wished to continue to outpace.<sup>56</sup>

Moynihan was emphatic about the necessity of physical expansion to the project of creating an operational modern field research institute in Panama. Expanding the personnel and research focus would require enlarging the Panama operation into a network of deliberately chosen research station sites. The Institute would require a wider “range of environments” since “a number of activities (e.g. research on montane floras and faunas, or any future program of studies on marine biology) would have to be centered elsewhere” than BCI. That meant securing official authorization for mainland work and acquiring mainland property “if this should appear to be desirable.” Adopting Smith’s tactic of non-specific negotiation, Moynihan did not enumerate in this document just what sites to which he hoped to expand.<sup>57</sup>

Choosing not to mention openly the periodic incidence of anti-U.S. violence, Moynihan cited the advantages of Panama as an easily accessible and comparatively politically stable Latin American country: “Whatever the fate of the Canal Zone may be, Panama seems more likely to escape violent revolution than most other Latin American countries.” He emphasized the geographical significance of the isthmus as a land bridge and marine barrier, and the consequent opportunities for comparative studies. He also noted that the Republic of Panama had little hope of itself realizing a viable program for developing or maintaining a scientific field station. Despite the fact that in March 1963 Smith and Moynihan had taken some steps towards developing a short-term BCI fellowship program for Panamanian students, Moynihan indicated no pending plans for local outreach or Panamanian collaboration.<sup>58</sup> Most of the impetus for that effort may have come from Smith, since the ATB meetings generally emphasized the potential educational and goodwill benefits of such efforts. Moynihan’s initial comment had been that he expected “few takers” for such an award. It appears that later Moynihan worked to turn this into a fellowship program drawing on interested students from all parts of Latin America, not just Panama.<sup>59</sup> That autumn A. C. Smith left Smithsonian for an academic position at University of Hawaii. Secretary

<sup>56</sup> Quotation from Neal Smith, “In Memoriam,” p. 755; Personal communication with author by Roberta Rubinoff, Washington, D.C., May 27, 1998; Personal communication by STRI personnel, February 1999.

<sup>57</sup> Moynihan to Carmichael, 5 July 1963.

<sup>58</sup> *Ibid.*

<sup>59</sup> A. C. Smith letter to Dr. [Leonard] Carmichael, through Mr. [James] Bradley, 1 March 1963, SIA RU 50, B32A, F: Fellowships; A. C. Smith letter to Dr. Martin H. Moynihan, 18 March 1963, SIA RU 50, B32A, F: Fellowships; “Smithsonian Tropical Research Institute,” in *The Smithsonian Year 1966* (Washington, D.C.: Smithsonian Institution, 1967), p. 171.

Carmichael retired, but not before authorizing the first two additional staff scientists at CZBA, hired before the end of 1963.<sup>60</sup>

MARTIN MOYNIHAN AND SMITHSONIAN SECRETARY S. DILLON RIPLEY:  
EXPANDING SMITHSONIAN FIELD SCIENCE STATIONS INSIDE THE  
UNITED STATES PANAMA CANAL ZONE

Despite these advances, it was only after the February 1964 installation of the Smithsonian's eighth Secretary, S. Dillon Ripley, that Moynihan's CZBA expansion campaign truly began to find favor in Washington. The dynamic Secretary Ripley was a practiced museum administrator, ornithologist, academic, field science veteran, nature conservationist, and general mover and shaker. Ripley arrived at Smithsonian from a post at Yale University, already sold on the values and the joys of tropical field science. Among the seminal experiences of his own scientific career was an extraordinary opportunity as a recent college graduate without advanced training to participate in a collecting voyage to the South Pacific islands during 1936 and 1937. His main task on this field expedition was collecting birds for the Philadelphia Academy of Sciences. To prepare for this Ripley had studied informally with Ernst Mayr, then a curator at the American Museum of Natural History in New York, just about a decade before Moynihan did the same.<sup>61</sup> Though Moynihan and Ripley were never close friends, the common elements in their backgrounds, including their early scientific interest and the consequent Mayr link, their private school and ivy league educations, extensive foreign travel since childhood to Europe and to more exotic field sites, and each one's recognition of the other's strong personal charisma, certainly factored into the good professional relations that soon developed between them.<sup>62</sup>

Significantly, Ripley's feeling for fieldwork was not restricted to a natural history collector's perspective. He was also convinced of its importance for theoretical work. In this regard he cited particularly the utility not of itinerant expeditions, but of location-based fieldwork, what he aptly described as "being at home in the field." In a 1982 interview, Ripley explained:

I think most scientists have to live in a kind of milieu, in an environment in which they are stimulated to think thoughts directed towards problem solving

<sup>60</sup> A. C. Smith letter to Dr. Charles F. Bennett, Jr., 7 October 1963, SIA RU 50, B33 F: Personnel: Scientific; [Moynihan], "Canal Zone Biological Area: Accomplishments."

<sup>61</sup> S. Dillon Ripley, interview by Pamela M. Henson, 18 May 1982, S. Dillon Ripley Interviews, SIA RU 9591; Van Dyne, "The Sun King," pp. 208-209.

<sup>62</sup> Neal Smith, "In Memoriam," pp. 755-758; Wolfgang Saxon, "Martin H. Moynihan, 68, an Authority on Animal Behavior," *The New York Times* 15 December 1996, p. 67; Van Dyne, "The Sun King," pp. 139-216; Personal communication by STRI personnel, February 1999.

. . . . If you go out on an expedition, you have only fragmentary experiences because you're usually traveling and camping in different places and trying to see as many species of animals as you possibly can . . . . When you're at home in the field . . . you begin to be able to interest yourself in display and pair-bonds and vocalizations and mating procedures and so on. . . .

In approaching Secretary Ripley about reconfiguring the terrain and the mission of Smithsonian's Panama field science station, Moynihan kept himself attuned to Ripley's particular interests while also assiduously representing and protecting his own. Ripley himself had approached, or more precisely careened, into the Smithsonian with a mission to introduce ecological research within all its scientific portals. While always careful to express strong enthusiasm for the traditional taxonomic and systematics activities of the Museum of Natural History, from the moment Ripley stepped onto the National Mall, he sought to "make the subject of ecology visible at the Smithsonian."<sup>63</sup> To this end, within his first year at the Smithsonian, Ripley had convened Museum of Natural History department and division heads into an "Ecology Panel." This panel, he hoped, would advise (and support) him in establishing his desired Institution-wide "ecology program" or "Office of Ecology."<sup>64</sup>

In January 1965, Ripley sponsored a two-day conference on "opportunities in environmental biology," corralling Smithsonian researchers together with a national roster of invited scholars, to discuss, and he hoped, to provoke, optimal Smithsonian responses to such opportunities.<sup>65</sup> Despite his many efforts, Ripley never convinced the majority of NMNH scientific researchers to act on his "conviction that ecology interweaves into the systematic disciplines." As Ripley later acknowledged, both research tradition and his mode of onslaught militated against the success of his battle for a Smithsonian niche for ecology, at least on the Mall. NMNH curators, by and large, simply were not interested in adding ecology to their systematics and taxonomic interests and duties, and the sometimes overbearing efforts of Ripley's hand-picked special assistants, ambitious young men with little scientific bench time to their credit, only stiffened the NMNH scientists' resistance.<sup>66</sup>

<sup>63</sup> Ripley interview, 18 May 1982; S. Dillon Ripley letter to Frank B. Golley, 24 February 1969, SIA, Raymond B. Fosberg uncatalogued papers, B: FRF Personnel, F: Tropical Biology Program, for "ecology" comment.

<sup>64</sup> S. Dillon Ripley memorandum to Professional Staff Members, Museum of Natural History, and Heads of Organization Units Concerned, 21 July 1964, SI RU 197, B1, F: POL1A-9.

<sup>65</sup> Phil[lip] Ritterbush memorandum to Members, Ecology Panel [at the National Museum of Natural History], 27 November 1964, SIA RU197, B1 [1964] F: POL1A-9; Phillip C. Ritterbush cover letter, n.d., SIA RU 99, B9 F: Comments on Minutes, Environmental Biology Conference.

<sup>66</sup> Quotation from S. Dillon Ripley letter to Participants in the Smithsonian Discussions on Ecology, 10 February 1965, SIA RU 197, B1, F: POL1A-9; Pierre Dansereau letter to S. Dillon Ripley, 25 January 1965, SIA RU 99, B9, F: Environmental Biology; Richard S. Boardman interview with Pamela M.

From the first, Secretary Ripley had also been very interested in pursuing opportunities for Smithsonian ecology, and especially ecosystem science, via long-term, station-based field science activities, both within the United States and in the tropics. In this he had more success overall than did his ecology initiative at the Museum of Natural History. During the 1960s his administration explored long-term field research possibilities throughout the Neotropical region.<sup>67</sup> By October of 1964, Ripley had read with favor Moynihan's 1963 plan for CZBA's reorganization. Though he knew Moynihan wasn't pitching a program of ecosystem ecology, Ripley, after discussions with members of his staff, affirmed that the Smithsonian administration wished to "proceed with plans" for the institute.<sup>68</sup>

In late 1964 and early 1965, Moynihan elaborated further on his ideas for the CZBA transformation. He described its principal objectives:

to determine how and why the characteristic features of tropical biotas have arisen and are maintained . . . . Theoretical problems must be kept firmly in mind throughout all phases of the research program; and the primary aim must be to develop general principles which can help us to organize our understanding of fundamental biological processes.<sup>69</sup>

In all cases, he affirmed, the institute should focus on "those aspects of biology which must be studied wholly or partly in the field." He also talked about STRI's intention to begin a long-term environmental monitoring program, though only if there were sufficient resources to support that, too, after the principal programs were enacted.<sup>70</sup>

Ripley's enthusiasm for the research possibilities field station-based science also offered for evolutionary and behavioral theory was not merely a

Henson, 12 February 1976, SIA RU 9508, B10. These events and personalities are addressed in more detail in Catherine A. Christen, "Tropical American Field Science and the Smithsonian Institution: Agendas for Research and Conservation, 1964-1970," paper presented at the History of Science, Medicine & Technology Department Colloquium, The Johns Hopkins University, 23 October 1997.

<sup>67</sup> Smithsonian policy initiatives and practices regarding Neotropical field science stations are also further addressed in Christen, "Tropical American Field Science." Among the more seriously debated Neotropical station development opportunities (aside from STRI) was the potential transfer from the United Fruit Company of Lancetilla Botanical Gardens in Honduras; see, for example, William L. Stern and Richard L. Zusi, "Potential of the Lancetilla Botanical Gardens, Honduras, as a Tropical Research Station," November 1964, SIA RU 197, B1, F: POL1A-2-1-1.

<sup>68</sup> See note 53 on financing. Moynihan to Carmichael, 5 July 1963, see marginalia; S. Dillon Ripley letter to Martin H. Moynihan, [20 October 1964], SIA RU 197, B1, F: POL1A-2; Rubinoff interview, 7 June 1990.

<sup>69</sup> [Martin Moynihan], "The Proposed Institute for Research on Tropical Biology," [January 1965], SIA RU 254, B40, F: STRI Tropical Biology Program, 1966-1967.

<sup>70</sup> *Ibid.*



fortuitous response to Moynihan's planning initiative. Ripley's own first-hand experiences had convinced him that behavioral and evolutionary studies in particular benefited from settled field research in "certain places in the world where you see rolled out on a map in front of you the evidence of evolution."<sup>71</sup> Panama definitely was one such place, as Rubinoff's proposal on isolation and evolutionary divergence in Atlantic and Pacific Ocean fish demonstrated. For his part, Moynihan never claimed to be planning a program in ecosystem science. But during the next years he did manage to continue making liberal use of the favored term, ecology, (and often also used "environment") when describing to Ripley or others the kind of work CZBA was developing or intending to develop.<sup>72</sup>

Moynihan now also reinserted some specifics about the Rubinoff project and his hopes for the Galeta lab. He elaborated that the Canal Zone offered researchers the ideal setup for a tropical marine program, providing access to "two oceans only 47 miles (and 45 minutes driving time) apart."<sup>73</sup> While Moynihan responded warmly to Ripley's encouragement for developing CZBA, he quickly rejected the Secretary's suggestion that the institute be directly associated with the proposed Office of Ecology, warning of the "practical difficulties" such an arrangement posed. Any Neotropical activities should be relatively autonomous, he explained, simply because of the distance from Washington and because "operational procedures," namely, the way things get done, differed so between Latin America and the U.S. Already alerted by his brush with Wallen, and again allowing himself a bit of coziness with the term, "ecology," Moynihan defended the autonomy (and the bureau status) of his Panama operations:

I also wonder if it would be wise to put all the groups studying live organisms in the museum. From my rather limited experience and observations, I have come to the conclusion that behavioral and ecological work does not usually flourish in museums . . . . The majority of museum workers must, in the natural order of things, be preoccupied with taxonomic and systematic problems, and their curatorial duties . . . their immediate interests do not usually coincide with those of behaviorists and ecologists. I should imagine that this might pose many problems for the museum administration.<sup>74</sup>

<sup>71</sup> Ripley interview, 18 May 1982.

<sup>72</sup> Personal communication by STRI personnel, February 1999; [Moynihan], "The Proposed Institute," [January 1965]; [Martin Moynihan], "A Preliminary Outline of the Objectives and Future Programs of the Smithsonian Tropical Research Institute, (as of May 1, 1966)," SIA RU 197, B1, F: POLIA-2.

<sup>73</sup> Moynihan's drive time was a breakneck estimate. Driving across the isthmus really took (and takes) about an hour and a half; Moynihan to Ripley, 27 October 1964; Rubinoff interview, 21 April 1989.

<sup>74</sup> Phil[lip] Ritterbush memorandum to Mr. [S. Dillon] Ripley, 2 October 1964, SIA RU 197, B1, F: POLIA-2; Ripley to Moynihan, [20 October 1964]; all quotations, Moynihan to Ripley, 27 October 1964.

Meantime, further staff hires soon ensued at CZBA, including Rubinoff, who joined it in July 1965. By the end of that year Smithsonian also had negotiated successfully for licenses from the Canal Zone authorities to use surplus U.S. military facilities, including a former defense bunker and other buildings on Naos Island on the Pacific coast, and, at last, the Galeta building on the Atlantic side. Both these marine laboratory locations were within the U.S. Canal Zone, offering “nearby” isolation and security, with access to needed running sea water systems and marine environments, and off-limits to any non-scientific uses. The terms of CZBA access to these sites were clear and unambiguous, and the buildings provided a ready-made infrastructure that could be inexpensively converted to laboratories. Like Pipeline, they were accessible by motor vehicle, yet still isolated from Panama’s population.<sup>75</sup>

As former military sites they were not pristine, but they were well protected. Researchers had to clear military checkpoints each day to reach these new CZBA sites, and only U.S. citizens were authorized to enter. More violence had broken out in early 1964 after several Panamanian youths had tried to raise the Panamanian flag on top of Ancon Hill in the U.S. Canal Zone, at the U.S. Panama Canal Company’s headquarters. Weeks of rioting in Panama City had followed, focused on the demand that the U.S. cede the Canal to Panama; 21 Panamanians had died. There was a certain irony in CZBA’s choosing to keep its researchers sheltered from possible incidences of Panamanian wrath against the U.S. by sequestering them in low-profile sites licensed from the high-profile U.S. military in the heart of its scrutinized contested territory, but for the time being this institution-building strategy did work. At the same time, CZBA and the Organization of American States began a cooperative fellowship program in 1965, bringing a handful of Latin American graduate students into the Canal Zone, presumably only to BCI, for training with resident staff. Moynihan expected most of these students would “arrive quite unprepared . . . we will have to train them from scratch.”<sup>76</sup>

In 1966, the CZBA officially became the Smithsonian Tropical Research Institute (STRI). In these years, Smithsonian’s ambitions for tropical biol-

<sup>75</sup> Sidney R. Galler letter to Dr. Martin Moynihan, 22 November 1965, SIA RU 197, B1, F: POL 1A-2; Chief of Naval Operations memorandum to Chief, Bureau of Yards and Docks, [1 June 1965], SIA RU 197, B1, F: POL1A-2; Martin Moynihan letter to Chief of Naval Operations, 29 March 1965, SIA RU 197, B1, F: POL1A-2; I. E. Wallen memorandum to Mr. [S. Dillon] Ripley, , 7 June 1965, SIA RU 197, B1 F: POL 1A-2; Rubinoff interview, 21 April 1989; “Smithsonian Tropical Research Institute,” in *The Smithsonian Year 1966*, pp. 163-164, p. 171.

<sup>76</sup> Wallen to Ripley, 7 June 1965; Rubinoff interview, 21 April 1989; Sanchez, “Panama’s Foreign Policy,” p. 5; quotation from [Moynihan], “A Preliminary Outline,” p. 27.

ogy and field science were so strong, fueled by funding organizations like NSF, by the Secretary's interest, by the interests of Ripley's personal staff to build and administer powerful programs, and by the impetus from other research and teaching organizations, that Moynihan was constantly defending his turf from the centralizing tendencies of "tropical programs" born on the National Mall, and competing for sufficient funding to develop the next phases of STRI's own programs. Sometimes he even took the offensive approach to this defense, offering to "come to Washington to organize, or help organize, a general SI program for tropical biology." Most of the time, he tried to capitalize on the interest in doing something that his bureau already was doing, namely tropical biology, while keeping STRI, and its science, autonomous from the administrative infrastructures that were endlessly combining and recombining up on the Mall.<sup>77</sup> For his part, Ripley wasn't only relying on STRI, or on tropical biology, to bring about ecosystem and other ecological research at Smithsonian. By 1966, upon Ripley's impetus, Smithsonian had established an entirely new research station, the Chesapeake Bay Center for Field Biology (CBCFB). By 1967 Smithsonian had developed and was enacting a research program for CBCFB, in consortium with the University of Maryland and The Johns Hopkins University. This station's research program was focused on contributing to an "understanding of principles and concepts in ecosystem science." CBCFB today is called SERC, the Smithsonian Environmental Research Center.<sup>78</sup>

Ripley had also quickly made known his strong personal interest in conservation, and his desire that Smithsonian ecology somehow address conservation issues. Among Ripley's many early conservation-oriented activities was his close involvement during the 1950s in establishing the Charles Darwin Foundation for Conservation and Research, promoting protection and scientific study of the Galapagos Islands by both foreigners and Ecuadorians. When STRI was established in 1966, the new institute was officially dedicated to tropical field research, education and training—and to conservation in Panama. Enumerating this final goal probably reflected Moynihan's sensitivity to Ripley's conservation interests as much as anything else. Moynihan addressed conservation in one paragraph at the end of a 28-page outline for STRI's future written in 1966. He set two conservation tasks for STRI: preserving the areas STRI administered, which mainly meant contin-

<sup>77</sup> Quotation from Martin Moynihan letter to Dr. Sidney R. Galler, 12 December 1966, SIA RU 254, B40, F: STRI, Tropical Biology Program 1966-1967; [Moynihan], "A Preliminary Outline"; Other pertinent files for this period are found in abundance in SIA RU 254 and SIA RU 197; see Christen, "Tropical American Field Science."

<sup>78</sup> S. Dillon Ripley memorandum to Professional Research Staff: Museum of Natural History, Radiation Biology Laboratory, National Zoological Park, 13 February 1967, SIA RU 197, B1, F: POL1A-9-1.

uing to protect BCI against poachers or collecting scientists, and “doing all we can to encourage the Panamanian government to establish a system of national parks and biological preserves.” Since the Panamanian and U.S. government were then experiencing “delicate relations,” Moynihan also explained that he felt STRI could not do much and would be unwise to offer any advice unless asked for it, but perhaps in the meantime could also give some money for Panamanian park guards and wardens. For many years, this essentially summed up STRI’s conservation agenda.<sup>79</sup>

But with conservation science as with ecosystem field science, Ripley did not suppose STRI was expected to take care of everything, nor were his sights for this focused only on field stations in the tropics. In January 1974, again with Ripley’s strong backing, the National Zoo acquired a 3,200 acre (1,295 hectare) facility in Front Royal, Virginia, for its Conservation and Research Center (CRC). When the CRC property was acquired, after several years’ search for an appropriate site, Ripley said it “seems to me an answer to prayer,” and that he looked forward to “long range planning for a whole variety” of activities at the facility. Since then CRC has been dedicated to captive breeding of endangered animal species and to research contributing to species survival, including both local and international *in situ* wildlife ecology and conservation biology.<sup>80</sup>

ENDING THE ISOLATION:  
IRA RUBINOFF AND STRI’S EXPANSION INTO PANAMA

After the riots of 1964, the United States had grudgingly entered into new rounds of Canal Treaty negotiations with the Republic of Panama, and naturally, STRI paid attention. In the late 1960s, STRI headquarters had been relocated from BCI to the former Ancon courthouse in the Canal Zone on the edge of Panama City, affording it more space and better logistics. By the 1970s, some STRI scientists still lived on BCI, while many others lived in staff housing in the Canal Zone or even Panama City. Though STRI still had no Latin American scientists, its top administrative support staff came from Panama’s leading families, as had been true from CZBA’s earliest days. STRI administration kept itself well aware of developments in Panama’s relations with the United States. STRI still had no legal basis for any institute activities outside of the U.S. Canal Zone, where its only political status

<sup>79</sup> *The Smithsonian Year 1966*, p. 59; S. Dillon Ripley, interview by Pamela M. Henson, SIA RU 9591; [Moynihan], “A Preliminary Outline,” p. 1, pp. 27-28; S. Dillon Ripley Papers Accession 87-030, SIA.

<sup>80</sup> S. Dillon Ripley memorandum to Dr. [Theodore] Reed, 10 July 1974, SIA RU 254, B18, F2; Amy Donovan, “Zebras in Virginia? A Future for Animals,” in Alfred Meyer, ed., *A Zoo for All Seasons* (Washington, D.C.: Smithsonian Press, 1979) pp. 128-151.

was vested. While always monitoring for possible changes in the Canal Zone's status, in the meantime Moynihan felt that his unobtrusive approach to growth inside the Canal Zone still best fit the political circumstances, successfully pushing the envelope on institution building within its strictures while keeping STRI essentially unnoticed by and thus unthreatening to Panama. Moynihan also sent STRI staff on medium-term research exchanges to other tropical countries, and he established a small station in Cali, Colombia, mainly for his own research, in association with some locally based research institutions that already had all the necessary political connections there.<sup>81</sup>

In 1974, Moynihan resigned the directorship of STRI to devote himself to research. His designated successor, Ira Rubinoff, became STRI's second director. Canal treaty talks begun in the 1960s were still continuing, and it appeared that soon the U.S. would likely be ceding sovereignty. As Rubinoff later recalled, given the confluence of these political events and STRI's own institutional development, "you do reach a point where you're sufficiently conspicuous . . . you keep adding staff and more visitors . . . [until] you've got to do something to legitimize." Rubinoff determined that for both scientific and political reasons STRI's operations could not remain sequestered within the Canal Zone; the Zone might not continue to exist, and anyhow, its territory didn't encompass all the field conditions his scientific staff required. He and Panamanian administrative staff members at STRI began to work towards a new STRI goal, establishing a clearly defined legal relationship with the government of Panama. After "a certain amount of lobbying here and there," in June 1974 the Panamanian national legislature authorized STRI to sign a contractual agreement with the Ministry of Health. This agreement allowed STRI to operate its research stations and other activities anywhere in the isthmus. STRI signed with the Health Ministry because that ministry already had a similar contract with the Gorgas Memorial Institute, and STRI had close relations with Gorgas, whose top administrators helped set these arrangements. To fulfill STRI's side of the contract, once a year Rubinoff sent a set of the institute's reports to Panama's Minister of Health.<sup>82</sup>

<sup>81</sup> Personal communication by STRI personnel, February 1999; In the late 1970s STRI divested itself of this Cali station, giving it over to local institutional partners. Martin H. Moynihan letter to Dr. William J. Riemer, 24 January 1966, SIA RU 254, B40, F: STRI, Tropical Biology Program 1966-1967; Rubinoff interview, 7 June 1990; [Moynihan], "The Proposed Institute" [January 1965]; Ira Rubinoff letter to Dr. S. Dillon Ripley, 15 April 1975, SIA RU 254, B38, F1.

<sup>82</sup> All quotations, Rubinoff interview, 7 June 1990; Robert L. Dressler, interview by author, Gainesville, Florida, 1 July 1997; Rubinoff to Ripley, 15 April 1975; Personal communication by STRI personnel, February 1999; Consejo Nacional de Legislación, "Ley No. 57 de 6 de Junio de 1974," (Panama: Gaceta Oficial, 26 June 1974).

Next, as negotiations between the U.S. and Panama on the 1977 Canal Treaty began winding up, STRI worked out a corollary agreement with the Republic of Panama, building on its 1974 agreement. This “side agreement” went into effect simultaneously with the new treaty. Under this agreement, STRI maintained the use of all lands, waters, and facilities that it was using at the time, and also gained custodianship and administration of the Barro Colorado National Monument (BCNM), consisting of BCI and a buffer zone of five nearby mainland peninsulas, three of them adjoining Panama’s newly declared Parque Nacional Soberanía. STRI agreed to collaborate with Panama to protect and conserve the BCNM. As Rubinoff has explained, “nature monument” is a category created in the 1940 Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, which denotes an area reserved exclusively for research purposes. Since both the U.S. and Panama had long since ratified this Convention, “nature monument” proved a particularly apt designation by which to ensure the future of BCI and of STRI.<sup>83</sup>

By 1979, STRI assumed custodianship of BCNM on behalf of both nations, which for some time mainly meant that about every five years the STRI director would write a letter to the Foreign Minister of Panama and the U.S. Secretary of State, stating that Smithsonian should continue as custodian. In 1985, the Government of Panama granted STRI status as an International Mission, giving it duty-free privileges and further integrating STRI into a long-term orientation towards Panama that could allow the institute to outlast the U.S. Canal handover in 2000. Only during the mid-1980s did STRI finally begin to develop significant programs for environmental education and conservation outreach and collaboration with Panama, one of its inaugural objectives from 1966. By the late 1980s, many Panamanians were utilizing the STRI library for academic and professional research projects. STRI was providing weekly public tours to BCI, and by 1989 published a Spanish-language version of its BCI guidebook, “A Day on Barro Colorado Island.” Larger numbers of Latin American graduate students also began to train at STRI by that decade, and as STRI expanded further, Latin American scientists also began to join the permanent scientific staff, representing a significant staff component by the mid-1990s.<sup>84</sup>

<sup>83</sup> Personal communication by STRI personnel, February 1999; Smithsonian Tropical Research Institute, *Report: October 1, 1987 through September 30, 1988 from Smithsonian Year 1988*, (Panama: Impresora Panama, 1989), p. 9; Rubinoff interview, 7 June 1990.

<sup>84</sup> Rubinoff interview, 7 June 1990; STRI, *Report . . . from Smithsonian Year 1988*, p. 29; Jorge Ventocilla, “Alternativas a la Destrucción: Lineamientos y Objetivos del Programa en Panamá,” Proceedings of the *Symposio, Conservación y Manejo de Fauna Silvestre Neotropical*, 10-11 October 1983, Arequipa, Peru, pp. 73-76.

Even before the legal agreements effectively changed STRI's relation with the Republic of Panama, scientific motivations had been compelling STRI researchers to expand unilaterally into station-based field research outside the Canal Zone. In fact, these activities were one reason why STRI had sought a separate formal agreement with Panama. After STRI had acquired the former U.S. military installations at the Pacific and Atlantic ends of the Panama Canal, these stations became important field study and laboratory centers. Unfortunately, neither one offered all the necessary conditions the growing ranks of STRI scientists and affiliated researchers required for their marine studies. The marine area itself near Naos actually had little to offer most marine scientists, though the Naos sea water system remained crucial to many research projects. Unfortunately the fringing reefs around Galeta also failed to offer adequate conditions for most marine studies after a December 1968 oil tanker spill and an even larger 1973 spill, though it did become the site of significant studies on the effects of oil in reef and mangrove environments.<sup>85</sup>

Starting in 1970, STRI marine researchers had begun to make their own arrangements to find the extensive unpolluted coral reef colonies they sought for long-term research. They began to conduct research dives in the waters off the San Blas Islands in the Comarca of Kuna Yala, an autonomous district controlled by its inhabitants, the Kuna (San Blas) Indians. STRI researchers first stayed at a small hotel built on pilings over the water at the edge of Pico Feo Island, surrounded by coral reef communities.<sup>86</sup> In 1974, this hotel was taken over by the same unscrupulous Donald Allen who had shortly before slipped away from the real-estate scam he had engineered on Costa Rica's Osa Peninsula. Allen offered the STRI researchers permanent use of one of the hotel's outbuildings for their quarters and gear, because, he said, "having scientists around always is interesting for the turistas!" Despite misgivings about his "obnoxious" character, the STRI scientists on site were intending to follow up with Allen, but fortunately for STRI's political relations in the region, the Kuna quickly got wind of Allen's style of business, and evicted him from the Comarca. With the Pico Feo hotel now out of busi-

<sup>85</sup> S. Dillon Ripley letter to Dr. Donald F. Hornig, 23 December 1968, SIA RU 197, B1, F: POL1A-2; Ross Robertson, interview by author, Panama City, Panama, February 1999; Harilaos Lessios interview by author, Panama City, Panama, February 1999; Ira Rubinoff, interview by Pamela M. Henson, 11 June 1990, SIA RU 9582; "Plan for the Future Development of Marine Research," STRI, 7 January 1998, pp. 4-6, Tupper Center, STRI, Panama, Elena Lombardo Working Files. There was also another oil spill by Galeta in 1986.

<sup>86</sup> Robertson interview; Smithsonian Tropical Research Institute, "Foreword" to "Compilation of Scientific Publications, Comarca de San Blas, Republic of Panama," manuscript, n.p. 1987; D. Ross Robertson and Peter W. Glynn, *Field Guidebook to the Reefs of San Blas Islands, Panama* (prepared for the Third International Symposium on Coral Reefs) (Miami Beach: University of Miami), 1977, p. 4.

ness, STRI scientist Ross Robertson rented a shack on an “island” made of sand-fill and coral, next to the island of Wichubhuala, from a Kuna named Juan Garcia. Because Garcia had built up the fill island himself, he owned it outright, an unusual circumstance given the traditional land-tenure rules of the Kuna Comarca. Other Smithsonian colleagues soon joined Robertson at this island base.<sup>87</sup>

This Kuna Yala development was part of a significant STRI trend of the 1970s, as new director Rubinoff had determined that it was time actively to build up long-term research sites and programs outside of the soon-to-be former Panama Canal Zone, and had taken the steps to legitimize these higher-profile endeavors. Several other land-based stations and long-term research sites were also developed during the decades after the 1974 contract. The Kuna Yala station, known as “Smithsonianup,” was a minimalist operation but sufficient for the kinds of marine research that STRI researchers were developing. One of its tremendous advantages was that researchers at the station were but a five to 20 minute boat ride away from their research sites. It became a site for long-term studies, some eventually lasting 20 years or more.<sup>88</sup> Among the research projects carried out by STRI staff scientists from the Smithsonianup base were squid behavioral studies by Martin Moynihan; long-term studies of coral reef fish population and hermaphroditism by station pioneer Ross Robertson; research by Nancy Knowlton on the effects of different coral-eating organisms on reef-building coral species; investigations by Haris Lessios of sea urchin population die-off and recovery after a 1983 mass mortality event and on the impact of low urchin populations on the functioning of the reef community as a whole. Many non-STRI visitors also used Smithsonianup, which continued growing rapidly if haphazardly over all of this tiny island and then over the adjacent waters. By 1986, more than 130 articles had been published on research carried out entirely or in part from this station.<sup>89</sup>

During the mid-1980s, STRI formalized its arrangements for using the field station by signing a multi-year contract with the Kuna General Con-

<sup>87</sup> All quotations from Dave Meyer letter to Ira [Rubinoff], 15 November 1974, in Tupper Center, STRI, Panama, Elena Lombardo Working Files, Folder: San Blas Pico Feo Island; Robertson interview; Christen, “Development and Conservation,” pp. 286-288, p. 302; Costa Rica, Registro Nacional Mercantil, Tomo 114, Folio 584, Asiento 438, 21 January 1974; Sonia Day, “Osa: It’s Tropical, Troubled,” *Tico Times*, 12 July 1974.

<sup>88</sup> Rubinoff interview, 7 June 1990; Personal communication by STRI personnel, February 1999; Ross Robertson interview; Lessios interview; Robertson and Glynn, *Field Guidebook*, pp. 1-6.

<sup>89</sup> Robertson interview; Lessios interview; STRI, “Foreword,” in “Compilation of Scientific Publications . . . 1987”; “Summary of Research Activities at the San Blas Station, 1988,” in Tupper Center, STRI, Panama, Elena Lombardo Working Files, Folder: Kuna Congress, October 1987-October 1988.



gress, one of the two legislative bodies of the autonomous Kuna Yala Comarca. By this contract, the General Congress officially authorized STRI's use of the station. Thereafter STRI made regular payments to the General Congress for this privilege, as well as making ongoing rental payments to Juan Garcia for the actual "land" rental. In the late 1980s and early 1990s, seeking more secure tenure for their station, STRI explored possibilities for relocating it to another island. These plans were eventually discarded, principally because the complex land tenure structure in Kuna Yala would have made it extremely difficult to determine who were the individual landowners with whom STRI would have had to negotiate such an arrangement.<sup>90</sup>

Also by the mid-1980s, members of STRI's Environmental Education unit were providing environmental education programs in communities throughout Kuna Yala. Among this unit's members were Jorge Ventocilla, a STRI employee originally from Peru, and Panamanian Argelis Ruiz Guevara. Every few years, the environmental education team carried out a program of trips that traversed the full length of the archipelago of Kuna islands, down to the Colombian border. These activities have been widely credited as having provided the most important element of STRI outreach to the Kuna. For many inhabitants of Kuna Yala, particularly those living on the further islands, their personal interactions and even friendships with members of the environmental education unit were what they came to think of, in positive terms, as STRI.<sup>91</sup> Ventocilla had lived with the Kuna in the mainland village of Cangandi during his master's research, and afterwards produced and distributed under STRI aegis a children's coloring book on Kuna culture in relation to nature, with both Kuna and Spanish text. Ventocilla and other STRI environmental education outreach personnel also regularly ran a children's art workshop and contest in Kuna Yala.<sup>92</sup> When STRI was invited to make presentations to the Kuna General Congress,

<sup>90</sup> República de Panamá, Congreso General Kuna, Kuna Yala, "Permiso del Congreso General Kuna, al Instituto Smithsonian, para las investigaciones científicas en el litoral de Kuna Yala," 3 May 1986, in Tupper Center, STRI, Panama, Elena Lombardo Working Files, Folder: Lombardo E., Negotiation with Kuna Congress; Robertson interview; Personal communication with author by Elena Lombardo, Panama City, Panama, February 1999; STRI, *Report . . . From Smithsonian Year 1988*, p. 30.

<sup>91</sup> Personal communication with author by John Christy, Panama City, Panama, February 1999; James Howe letter to Ira Rubinoff, 7 August 1986, and accompanying memorandum, "The Educational Campaign," in Tupper Center, STRI, Panama, Elena Lombardo Working Files, Folder: San Blas Convenio.

<sup>92</sup> "Keeping a Promise to Kuna Community Elders," *Smithsonian Runner*, 93:1 (January-February 1993), pp. 6-8; Mac Chapin, "Defending Kuna Yala: PEMASKY, The Study Project for the Management of the Wildlands of Kuna Yala, Panama" (Washington D.C.: Biodiversity Support Program Website, 2001), a case study for Barbara Wyckoff-Baird, Andrea Kaus, Catherine A. Christen, and Margaret Keck, *Shifting the Power: Decentralization and Biodiversity Conservation* (Washington, D.C.: Biodiversity Support Program, 2000); Jorge Ventocilla and Ologuagdi, *Anmar Napguana Mimmigana/Nosotros, los hijos de la Madre Tierra*. (Panamá: Impresora Educativa, 1991).

Rubinoff and other top STRI administrators would attend in the company of Ventocilla, and sometimes they would bring along winning entries from the children's art contests to display at the congress.<sup>93</sup>

Another activity that brought about considerable Kuna-STRI interaction was the Kuna project, PEMASKY, the "Study Project for the Management of the Wildlands of Kuna Yala." This Kuna land management and conservation project, which began in 1983, actually focused on the protection of the mainland territories of Kuna Yala against non-Kuna colonization. Though not involving Smithsonianupo, this project did bring about considerable STRI interaction with the Kuna Yala Comarca, in terms of STRI research assistance to the PEMASKY team and in STRI's role as administrator of MacArthur monies and other grants and funds awarded to the project. STRI's Ventocilla was the only non-Kuna member of the PEMASKY technical team. Many Kuna employees in this and similar Kuna projects also made frequent use of the STRI library and of other STRI facilities in Panama City. For a long time, PEMASKY actually had an office at the Tupper Center, STRI's expanded Panama City headquarters. In addition, individual Kuna communities, most often the ones adjacent to the field stations, often presented STRI with requests for assistance, such as for donations of building materials. On an ad-hoc basis, STRI fulfilled many of these requests, at one time even donating outboard motors to the Kuna General Congress.<sup>94</sup>

In 1997 the Kuna General Congress voted not to renew STRI's contract for the field station. The decision took most at STRI by surprise. It probably represented the conjunction of a host of factors. Some of these likely had more to do with internal Kuna politics than with STRI itself. Still, many observers comment that some sectors of Kuna society felt strong dissatisfaction about how STRI managed the station, and about the inadequate means by which STRI informed the Kuna of knowledge generated through station-based scientific research. One of STRI's principal mechanisms for updating the Kuna General Congress about research at the station was by periodically presenting them with thick bound volumes that compiled all

<sup>93</sup> "Keeping a Promise," pp. 6-8; Elena Lombardo, memorandum, 12 May 1987, "STRI Attendance at Kuna General Congress," in Tupper Center, STRI, Panama, Elena Lombardo Working Files, Folder: San Blas Convenio.

<sup>94</sup> Chapin, "Defending Kuna Yala"; Smithsonian Tropical Research Institute, "Informe de Asistencia General, Programas Educativos y Servicios Bibliotecarios Brindados a la Nación Kuna (San Blas), 1987-1991, notebook, Tupper Center, STRI, Panama, Elena Lombardo Working Files; Congreso General Tradicional Nación Kuna Comarca de San Blas, letter to Smithsonian Tropical Research Institute, 18 November 1985, in Tupper Center, STRI, Panama, Elena Lombardo Working Files, Folder: San Blas General Correspondence, 1986.

related published research. Nearly every article was in English. Few contained even Spanish-language abstracts.<sup>95</sup>

From the perspective of the tropical field scientists these volumes did truly aggregate and express STRI's most valuable contribution as a presence in Kuna Yala, but this expression fell short of communication. In retrospect, this is a particularly unfortunate gap, since PEMASKY-associated activities demonstrated that the Kuna were interested in what western science could offer them, specifically regarding marine conservation issues such as the disappearance of sea turtles and lobsters, the decline in fish populations and coral reef degradation.<sup>96</sup> Anecdotal evidence also suggests that Kuna Congress representatives from some communities were particularly adamant about terminating the contract. Their communities had become suspicious and intolerant of STRI after it had neglected to send its environmental education specialists to the archipelago's distant islands for many years. Those islands' inhabitants no longer retained any particular positive associations about STRI as an institution.<sup>97</sup> Another element that has been suggested by some observers is the fact that STRI always worked out its agreements with the Kuna General Congress, and not with the higher authority in the Kuna's bicameral legislative system, the Kuna Cultural Congress. Despite STRI efforts to get the Kuna to reconsider their decision, the station closed in June 1998, halting several long-term studies.<sup>98</sup>

By then STRI already had several other field stations in Panama, some marine research vessels, and cooperative agreements and ongoing research at field operations elsewhere in Latin America, Asia, and Africa. After the final decision closing the Kuna Yala station, STRI administration also began building up another Atlantic marine station in Bocas del Toro Province in northern Panama. Having learned something from its Kuna experience, STRI hosted a community meeting in the town of Bocas del Toro before opening the station, to explain what it would do and what it could not do. For example, STRI personnel were careful to explain that the station would provide few jobs to community members.<sup>99</sup>

Bocas del Toro Province is a region of Panama replete with local conservation organizations, several of them with many years' experience and

<sup>95</sup> Robertson interview; STRI, "Compilation of Scientific Publications . . . 1987."

<sup>96</sup> Chapin, "Defending Kuna Yala"; Lombardo memorandum, 12 May 1987.

<sup>97</sup> Personal communication by John Christy, February 1999; Personal communication with author by Jorge Ventocilla, Panama City, Panama, February 1999.

<sup>98</sup> Susan Milius, "When Worlds Collide: Why Can't Conservation Scientists and Indigenous Peoples Just Get Along?," *Science News* 154 (8 August 1998), p. 94.

<sup>99</sup> Personal communication by Elena Lombardo, February 1999.

strong ties to international conservation and research groups. In February 1999, several months after STRI's meeting in Bocas, representatives of many of these organizations expressed appreciation for the message STRI had transmitted, but also emphasized that what they were really hoping for was that the STRI station would generate, and convey to them, research information useful for their own conservation efforts. As of February 1999, they had not received any follow-up communications from STRI clearly indicating whether this would be likely. At least in part, this was because Bocas del Toro station had not yet attracted a solid scientific constituency. Marine conditions at Bocas del Toro are very different from those near the former Kuna Yala station, and few of the research projects once based there were able to relocate to the new Atlantic station.<sup>100</sup>

Meanwhile, in 1997 STRI had signed a contract with Panama's Foreign Relations Minister guaranteeing that STRI could continue its research activities in Panama after the Canal was turned over to the Panamanian Republic in December 1999, even as all other U.S. installations were obliged to pull out. This contract also arranged for STRI to maintain custodianship and management of the Barro Colorado Nature Monument, now only on behalf of the Panamanian government. STRI would also retain its international mission status for 20 years from 2000, with provisions for further renewal. STRI also signed agreements with Panama's Interoceanic Canal Authority that assured continued use of its structures, areas and facilities for 20 years. STRI was able to protect its long-term research interests via these negotiated arrangements because of the earlier steps taken in its 1974, 1977, and 1985 agreements with Panama. Between 1997 and 2000, STRI administrators then completed the huge task of ironing out with Panama's authorities all the details attendant on this changeover, such as reconciling STRI's personnel policies with Panamanian law.<sup>101</sup>

## CONCLUSIONS

In the early 1960s, the Smithsonian's Canal Zone Biological Area was frequently described as just the kind of tropical biology field station North American biologists would wish to emulate or utilize for their new tropical biology field research or training programs. While this may have been true, CZBA, the field station, was not the scientific institution its director, Martin

<sup>100</sup> Personal communication with author by Bocas del Toro conservation organization representatives, February 1999; Personal communication with author by Anthony Coates, Panama City, Panama, February 1999.

<sup>101</sup> "STRI's place in Panama is secure," *The Torch* 97:8 (August 1997), p. 1, p. 3; Personal communication by Elena Lombardo, February 1999.

Moynihan, believed it should be or could become. As this article has explored, CZBA's ensuing transformation into a leading tropical biology research institute with its own constellation of field research facilities transpired through a combination of scientific, political, and social factors.

A seminal scientific transition came about when Smithsonian's Secretary Leonard Carmichael agreed to grant CZBA its own professional research staff. Even before its official name change, in adding scientific staff members as authorized first by Carmichael and then by Secretary S. Dillon Ripley, CZBA effectively shifted its primary identity from a geographical one, as a "biological area," to an intellectual one, as a "tropical research institute." This shift in turn provided the principal justification for acquiring new field station facilities for STRI. Building on the CZBA field station's legacy, this particular institute was dedicated to aspects of biology that had to be studied wholly or partly in the field. Since the original land base was quite small and its biological characteristics insufficiently representative, the commitment to build a research staff (and to bring in deliberately selected affiliated visitors) also brought an obligation to provide them with appropriate nearby field locations for secure long-term research.

Just what kinds of field biology should be studied at STRI was a scientific decision that remained somewhat contested in some quarters even after CZBA had become an institute, but Moynihan managed to prevail in his conception of STRI's predominant focus on evolutionary questions. In this he was sometimes aided by his useful ability for a certain degree of rhetorical prevarication on the usage of "ecology." The stepwise acceptance by Smithsonian's Washington, D.C. administration of this scientific direction allowed STRI further to specify which field station facilities (as well as which staff members) constituted appropriate additions. That STRI had now become a field-based institute focused on theoretical science informed by locally accessible biological circumstances in turn conveniently militated for STRI to remain largely autonomous of the scientific—or administrative—agendas of any of Smithsonian's Mall-based science museums or programs.

The "Smithsonian" Tropical Research Institute, though not located in Washington, D.C., was, as the first part of its name affirmed, a Smithsonian science facility whose research programs and staff were of equal professional status to any other. Yet in order to perpetuate another CZBA legacy, the political protection that provided security for his institute's long-term scientific research, Moynihan developed its new field facilities strictly within the Canal Zone. In doing so, Smithsonian personnel maintained the same kinds of formal arrangements and collegial relations with the U.S.

Canal Zone authorities as had always benefited BCI. Sometimes this oddly circumscribed expansion may have meant making certain scientific gambles or compromises, such as choosing to locate marine research at the Galeta facility, an area unfortunately prone to oil spills from tankers and a nearby refinery. On the other hand, it also likely represented a significant financial savings for STRI, since easily accessible surplus military installations could be recycled into STRI field laboratories.

By 1974, simultaneous imperatives for expanding STRI's scientific field presence outside the Canal Zone, and for recognizing that the U.S. Canal Zone itself was a dying political construct led STRI's new director, Ira Rubinoff, once again to follow the BCI example of finding political security for STRI's research activities, this time by legitimizing STRI within the purview of the Panamanian Republic. The negotiation processes and formal agreement contracts were essentially similar to those of the CZBA-Canal Zone relationship, at least through the 1980s. In fact for some decades STRI found itself simultaneously meeting these formal obligations with both U.S. and Panamanian authorities. As with the Panamanian national government, in Kuna Yala STRI proceeded with formal recognition and token communication of scientific results only to find that at least in local field station settings, these may be necessary but definitely are not sufficient to build lasting goodwill and understanding. Even those activities which did produce high quality interaction, such as the environmental education visits to all the Kuna islands, appear to have been efficacious only insofar as they were institutionalized as regular events, losing their potency once they regressed into being essentially one-off activities.

Just as good social relations within the Smithsonian and within the U.S. Canal Zone helped STRI enact and protect its research agenda, social factors have also clearly complemented and reinforced political arrangements to help maintain the stability of STRI's field science research activities and facilities in the Panamanian Republic. Without question, these new political arrangements were first made and later successfully maintained largely through the good offices of newly significant alliances, both personal and institutional, that STRI and STRI administrators maintained with Panamanian individuals and institutions. In latter years, STRI has also started augmenting formal and symbolic political legitimization with closer social connections within Panama through public environmental education and conservation-oriented activities, teacher and tour-guide training and, just as important, via significantly increased integration of Latin American staff at all levels of the institute.

In recent years, STRI has essentially faced a requisite of transforming

from a strictly U.S. operation to a hybrid U.S./Latin American one. This transition has been assisted by and to some extent embodied in this integration of much higher numbers of Panamanians and other Latin Americans into the scientific and administrative ranks at STRI, and by greater financial, staffing, and programmatic recognition of STRI's non-research objectives of education, training, and conservation. Realizing these latter objectives at a level of success commensurate to STRI's highly respected track record for accomplishment in its basic science research mission may call for devoting even more institute energies to them. As at local stations, institutionalizing these energies into regular, well integrated programs, rather than isolated or intermittent ones usually offers the best returns.

By taking care of the necessary political arrangements to remain in Panama into the new millennium, STRI has now gained more time to complete this integration. The 1999 comments of the Bocas del Toro conservation associations suggest that perhaps scientific organizations seeking to improve their community relations might sometimes think about their outreach as inreach. That is, to think about facilitating positive connections that help communities reach in towards field science facilities and explore how, in the course of those facilities' regular business of doing science, they may be able to connect with the community's own local knowledge, interests, and needs. Certainly no twenty-first century Neotropical field station will ever experience either total physical isolation or complete political insulation from those neighbors who must now always be recognized as one of its non-researcher constituencies.

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