



“Strictly for the Birds”: Science, the Military and the Smithsonian’s Pacific Ocean Biological Survey Program, 1963–1970

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Abstract. Between 1963 and 1970, the Smithsonian Institution held a grant from the US Army to observe migratory patterns of pelagic birds in the Central Pacific. For six years, the Pacific Ocean Biological Survey Program (POBSP) collected a vast amount of data from a quarter of the globe little known to science, and difficult for civilians to access. Its reports were (and remain) of great value to science. In 1969, however, the Program became embroiled in controversy. Some alleged that the Smithsonian, by accepting the military’s coin, had violated its own rules governing the receipt of government funds and the publication of research. Recent investigations have pointed to a number of unexplained relationships between the POBSP and the Army, during a period of intense activity in chemical and biological weapons testing. The controversy marked a watershed in Smithsonian-military relations. As yet, its history is incomplete. What is known, however, suggests that the POBSP involved a highly problematic *mésalliance* between science and secrecy during the height of the Cold War. Its gradual unfolding prompts questions of contemporary relevance that await contemporary answers.

Keywords: biological weapons testing, Cold War, ecology, ornithology, Pacific, Smithsonian

“You have got to keep an eye on the military at all times, and it doesn’t matter whether it’s the birds from the Pentagon or the birds in the CIA.” Thus Harry Truman cautioned an enquiring interviewer in 1962, long after leaving office, but not too long to have forgotten power.¹ Today, this message might be read as the Old Testament lesson for a sermon about real birds, as revealed in the history of the Pacific Ocean Biological Survey Program. The corresponding New Testament lesson is found in the Gospel of St. John, chapter 8, verse 12: “Ye shall know the truth, and the truth shall make you free” – words etched in marble in the foyer of the original headquarters of the Central Intelligence Agency in Langley, Virginia. To some, they seem ironic, amidst the passing trade in secrecy that has characterized relations between academic science,

¹ Cited in Miller, 1974, p. 392.

the military and the intelligence services since the Second World War. More secret still – at least until the revelations of the last decade – have been the intentions prompting military sponsorship of civilian research projects. However, it is in precisely this context that a story unfolds, involving one of the nation's most cherished establishments, the Smithsonian Institution, during one of the most difficult periods in its 150-year history. It is a story of changing meanings and misgivings, of confusion between means and ends, of ambition and of conscience. While familiar to many, it remains studied by few.² Twenty-five years on, it combines elements of fact and speculation, prompting conclusions that remain, conjectural and open-ended.

Students of the Cold War have made us familiar with many moments in recent science where academic and military interests have coincided.³ In America, the overwhelming importance of military investment in basic research is a matter of public record. Equally, the efforts of the armed services to cultivate scientific knowledge for potential strategic use, are well documented. This phenomenon, we also know, was hardly exclusive to the United States. On the contrary, the creation of what has become known as the “military-academic-industrial complex” has found parallels in most advanced industrial states, both East and West. Thanks, however, to changing rules of access, and to the spirit of openness and reflection gaining ground in many American institutions, it is now possible to study this phenomenon – at least in its American aspect – more intensively and dispassionately. It is also possible to extend our understanding of the military-academic partnership from the list of well known cases involving the physical and social sciences, to less well known cases arising in the biological and environmental sciences; and to consider the consequences of such relationships not only for national laboratories and universities, but also for hospitals, museums and private research institutions.⁴ For this reason, the participation of Smithsonian staff in secret military-oriented research projects came as a shock to the national psyche, raising fears more quickly and more sharply, than any number of standard military contracts to university researchers.

Pacific Birds and the National Interest

In outline, the facts of the case are briefly told; conclusions and verifications will take longer. In the autumn of 1962, representatives of the Army and Navy approached the Smithsonian Institution, with a request to conduct a survey

² Gup, 1985.

³ Galison, Hevly and Lowen, 1992; Leslie, 1990; Lowen, 1992; Lowen, 1991.

⁴ Simpson, 1998.

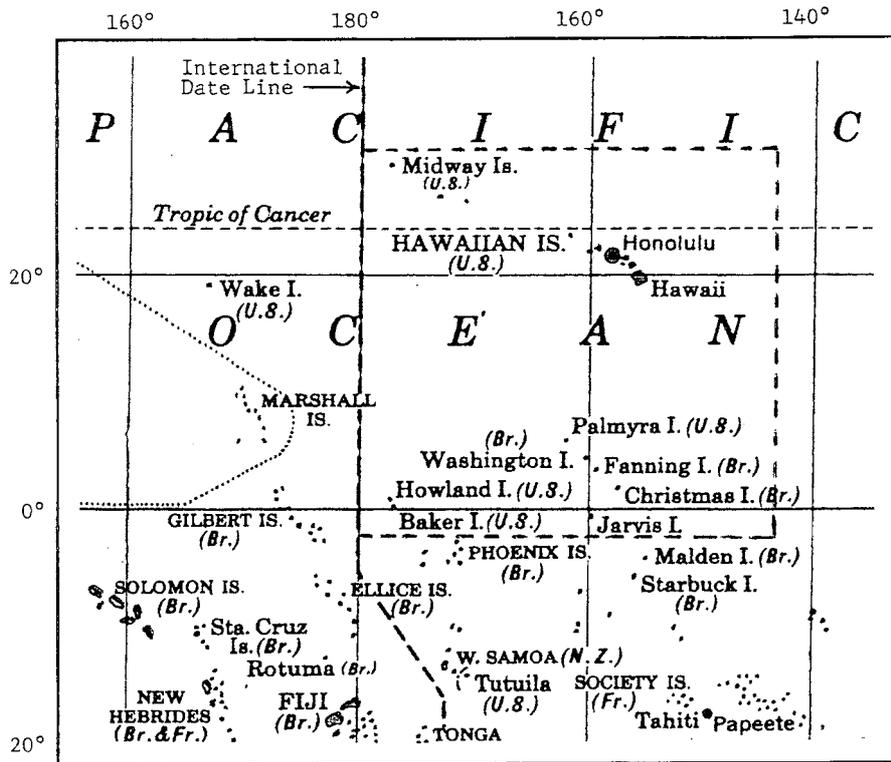


Figure 1. Area of the Central Pacific where the Pacific Ocean Biological survey program took place (main study area inside dashed line box). From: *Hammonds Historical Atlas*. 1960. Maplewood, N.J.: C.S. Hammond & Co: H-39.

of bird migration patterns over a vast, almost uninhabited, and scientifically little-known area of the Central Pacific (see Figure 1). What the intentions of this military project were, remain conjectural.⁵ To the ornithologists at the Museum of Natural History, the project was a godsend. The area to be studied included the Hawaiian, Line and Phoenix chains, the Gilbert and Marshall groups, Baker and Howland Islands, Wake Island, French Frigate Shoals, and

⁵ It is stated (without confirming reference) by Regis, 1999, p. 188, that the military delegation met with Remington Kellogg, Director of the US National Museum (1948–1962), who also held the title of Assistant Secretary of the Smithsonian (1958–1962). A native of Iowa, Kellogg was trained at the University of Kansas and became a specialist in fossil marine mammals. During the First World War, he served in the Army Medical Department in France, where he studied rodent-carried diseases. During the Second World War, he led the development of Field Studies in Brazil concerned with the study of mammals as carriers of disease (*Year Book, American Philosophical Society*, 1972, 205–210). By inclination, training and administrative position, Kellogg appears to have been an ideal contact for the military.

Sand Island on Johnston atoll, today the site of America's principal chemical weapons incinerator – an area expensive to reach and restricted in access to all but the most determined commercial and diplomatic interests.⁶ To even get to the area, a substantial degree of military and naval cooperation was, and is, essential.

If military motives were needed to justify research in the Pacific, this was nothing new. The European presence in the Pacific had always reflected strategic intentions. Since the mid-eighteenth century, moreover, scientific expeditions invariably combined military and scientific motives.⁷ And not for the first time, would the Smithsonian be a willing partner. The Institution prided itself on a long history of service to government agencies, including the military, that preceded the American Civil War and continued well beyond the Second World War.⁸ There was nothing especially novel about a military project wishing to involve Smithsonian experts. Perhaps it was unusual to have a contract with the Army Chemical Center at Fort Detrick, Maryland – but nothing more.

As it was, the Army project was welcomed by the Smithsonian Castle. Leonard Carmichael, the Secretary of the Smithsonian between 1953 and 1964, favored the appropriate application of science to national defense. I can find no resistance to the suggestion that the Smithsonian submit a proposal,⁹ and no dissent to the decision, on October 9, 1962, to accept a \$208,000 contract for a project that was expected to last between two and five years. So began the Pacific Ocean Biological Survey Program (POBSP).¹⁰ The principal applicant, and principal investigator, was Dr. Philip S. Humphrey, the newly-appointed Curator of Birds and Chairman of the Department of Vertebrate Zoology at the Natural History Museum. Between 1963 and 1968, the annual agreement was repeatedly renewed, eventually costing \$2.7 million – at least until that time, possibly the largest single contract, from any source, received by the Natural History Museum.

That the program had an obvious military importance, was easily conceded. Overtly, there was a military interest in forming a comprehensive environmental picture about an area which, from the beginning of the Pacific war, had acquired special military importance. During the war, American forces had built a huge forward base on Canton, in the Phoenix chain, and after 1945, the area experienced tests at Christmas and Malden Islands, and

⁶ Leff, 1940.

⁷ MacLeod and Rehbock, 1994; Gascoigne, 1998.

⁸ Henson, 1999.

⁹ J.M. Paley (U.S. Army Chemical Corps) to Humphrey, Biological Laboratory notes 9/25/62, Box 8. RU 245, Smithsonian Institution Archives, Washington, D.C..

¹⁰ POBSP Contract, 1964, Box 8. RU 245.

AIR FORCE WESTERN TEST RANGE ENIWETOK MARSHALL ISLANDS

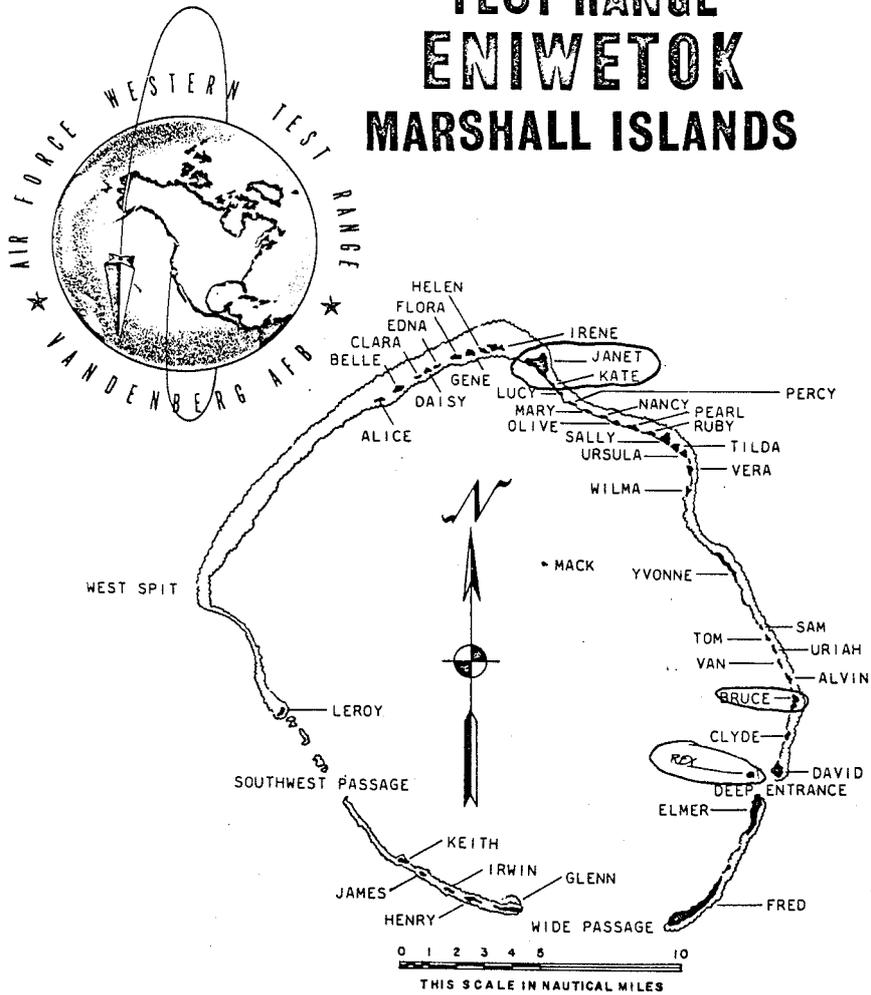


Figure 2. The POBSP selected certain atolls at Eniwetok for study. From: R. Crossin to J. Bushman and Robert Pyle, map attached to letter 1/29/69, Box 5. RU 245. Smithsonian Archives.

later became part of the Pacific Missile Test Range (see Figure 2). To establish benchmarks for continuing studies of environmental change in the region was clearly of importance.¹¹ Moreover, Pacific birds had a significant physical

¹¹ The POBSP indeed, selected certain atolls at Eniwetok for study. R. Crossin to J. Bushman and Robert Pyle, letter 1/29/69, Box 5. RU 245.

presence. On Midway and other islands, aircraft taking off from and landing on military air bases were routinely threatened, and sometimes damaged by flights of birds. Proverbially huge albatrosses were known to kill themselves by flying into guy wires and communications antennae. The military had, in short, a practical problem.

From the scientific perspective, the survey was enormously appealing. Little was known about the region's migratory birds, or of their seasonal movements. Such a project in descriptive natural history was entirely suited to the Smithsonian's traditional portfolio, and fitted easily into its mission – to better serve the “increase and diffusion of knowledge.” For the ornithologists of the Natural History Museum, moreover, it was the chance of a lifetime. From the survey would come direct observation of a number of pelagic species, their breeding, food habits and behaviour. Scientists would band birds by place of origin and trace their movements with the aid of volunteer reporters throughout the region. Avian blood samples and stomach contents would be analysed to detect changes in environmental conditions. And ship-borne oceanographic and hydrographic observations would track the direction and speed of avian movements in response to ocean conditions and wind patterns.

If, in its scope, the study was well worthy of the Smithsonian, so its task seemed safely routine. The Army appeared to want merely a survey. In the contract documents, no hypotheses were framed, no theories were to be tested. As far as the Smithsonian was concerned, staff were simply to write up their observations, copies of which were to go routinely to the Army, as sponsor. The right to publish was assumed; there was no suggestion that any scientific information would be suppressed.

At the outset, the program was based at Humphrey's office in the Natural History Museum in Washington, DC. Humphrey was often away on other work, including a Rockefeller-funded Smithsonian project studying viruses in bird populations located at Belem, in Brazil. In 1967, he left the Smithsonian to become Director of the Natural History Museum and Chairman of the Department of Zoology at the University of Kansas, but remained on paper the principal investigator. In his absence, Smithsonian naturalist Charles Ely ran the program, hired and promoted staff, and kept work underway.¹² In 1964, a “field office” was set up in Honolulu, under Richard Pyle, in association with the University of Hawaii, to provide logistic liaison with the Navy. The scientists had continuous use of three Navy auxiliary vessels and other small ships. “There is nothing really particularly hush-hush about our program,” Humphrey assured the Bishop Museum in Honolulu, which

¹² Ely, n.d.

generously lent its facilities.¹³ Nonetheless, all Smithsonian personnel were required to have security clearances. The reason was never formally stated, but most assumed that it merely reflected the regulations surrounding the restricted military and naval areas they would inevitably visit.

The Program's newly-recruited field staff, fresh from graduate school, took to their work with enthusiasm. On their first operation beginning in August 1963, the Navy took them on a series of 15-day cruises from Pearl Harbor, enabling them to survey all bird life visible to radar and the human eye, and to collect oceanographic data over a 50,000 square mile area around the Leeward Islands. There was no explanation given for this exercise – code-named Project STARBRIGHT – beyond a reference to its importance for tracking “the seasonally changing conditions both physical and biological of the oceanic environment.”¹⁴ Records suggest that the naturalists sought – in vain – to be informed of the military motive in collecting this data.¹⁵ Beginning in December 1963, and continuing for six years, staff kept up weekly accounts in an internal diary, called “Droppings from the Eagles Roost.” But, staff were reminded of the need for security.¹⁶ In a memorandum, Charles Ely cautioned all concerned to “be careful in discussing the project with outside people. No one wants to be branded a security risk as the result of an idle conversation.” He continued: “It should be enough for our men to know that they are securing data for the Division of Birds, SI, and that the military is interested in learning the ecology of areas in which they may someday be committed. Military and ecology are both nice vague terms. Use of military facilities and ships is easily explained because they are the only ones available for these areas.”

In any case, it was not the scientists who were the worry, Ely insisted, but rather “other groups,” whose presence or interest in the matter remained unspecified. However, no one was afterwards to mention the live bird shipments, and everyone was to forget the word “STARBRIGHT.”¹⁷ From April 1964, staff were called to Ft. Detrick and given special inoculations, ostensibly to avoid contracting diseases in test areas. Apparently, however, no one was told *which* diseases. In fact, staff were told as little as possible, and then only on a “need to know” basis. From her office at the Smithsonian, program secretary Jane Church – an “ardent bander,” and by common

¹³ P.S. Humphrey to Edwin Bryan, letter 9/4/63, Box 15. RU 245.

¹⁴ POBSP Contract, June 1964.

¹⁵ W. Banko to C. Ely, letter 11/26/63, Box 5. RU 245.

¹⁶ Although, in time-honored fashion, it did afford a moment for disgruntled verse: “STARBRIGHT, STARBRIGHT/First Project came to Light/Wish what I may/That I might/Had started the darned/Thing off Right.” [The remaining lines of the verse are too salty to print]. *Droppings*, Entry December 13, 1963.

¹⁷ C. Ely to Research Curators, letter 4/20/64, Box 15. RU 245.

consent, “den-mother to the Pacific fieldmen”¹⁸ – complained about having to keep classified documents, which had to be inspected every four months.¹⁹ But what these documents contained, is not known.

In 1964, at Humphrey’s request, the Army agreed to widen the survey the following year to include all wildlife on all islands in the region at all times of the year; and eventually, botanical studies as well. The survey then extended beyond the Hawaiian sector, to include Johnston Island, the islands in the Phoenix Group, and the Aleutian Islands of Alaska. Reports were sent routinely to the sponsoring Army Chemical Laboratories at Fort Detrick, and also to the Army’s Deseret Testing Center, at Fort Douglas, Utah. In 1964, senior staff from both Ft. Detrick and the Smithsonian met in Salt Lake, and apparently also visited Deseret, to discuss field methods and outcomes.²⁰ In certain respects, the Smithsonian seems to have provided “resident staff” for the Army in the Pacific.

Not all the going was easy. Each year, the work of banding and description was much the same – indeed, too much the same, some complained. Civilian and military priorities were not always identical; communications between Washington, Honolulu and the field were not always easy; and life on board a small Navy fleet tender could be monotonous and uncomfortable. To be kept for weeks on a lonely, sparsely vegetated island in searing temperatures without shade, banding thousands of sooty terns – the most abundant tropical bird – alive with ticks and lice, was not the exotic life featured in Pacific holiday brochures.²¹ Sometimes, given the circumstances, tempers flared.²² But practical drawbacks aside, staff bore their task stoically and morale was generally high. They were reminded that the project existed by courtesy of the Army, which included some who thought there should be no publication at all.²³ To most, the burden of secrecy – whatever its justification – remained a distinct nuisance, especially where the purpose of a given exercise was not obvious.

In the Kaneohe area, for example, staff were asked to feed mosquitoes upon captured birds, and collect sera samples, which were sent to Ft. Detrick. But no explanation was given for this, and no details were reported in the scientific press. The “funding agency,” Ely reported, “felt that the project is secret and that any publication will provide information to our enemies (real

¹⁸ *Droppings*, Entry, 4/18/66 and 1/3/64.

¹⁹ J. Church to C. Ely, letter 10/5/65, Box 12. RU 245. See also Cole, 1997.

²⁰ W.S. Miller (Chief, Test Chamber Branch, Technical Evaluation Division, Chemical Corps Biological Laboratories, Ft. Detrick) to Ely, letter 4/10/64, Box 15. RU 245.

²¹ Gould, 1974.

²² C. Ely to P. Humphrey, letter 3/5/65; C. Ely to W. Banko, letter 4/20/65; C. Ely to P. Humphrey, letter 5/12/65; C. Ely to J. Church, letter 11/4/65, Box 12. RU 245.

²³ C. Ely to J. Church, letter 12/9/65, Box 12. RU 245.

or imagined).²⁴ Secrecy was particularly tiresome when the Army requested staff to sail out to study birds on Baker Island – a one-square mile atoll 2000 miles southwest of Hawaii, where, as it transpired, there were many cats but no birds at all.²⁵ But Ely took issue with his critics. “We are constantly being criticized for our “secrecy,” he wrote a colleague, “but some SECRET clearance is necessary for many of the islands where we work and for many of the ships and military groups with which we are necessarily associated. I am willing to discuss any non-classified parts of the project with any interested biologist. However, I do not feel that we need to apologise for accomplishing work that other groups have not or could not accomplish. Our at sea study, for example, is absolutely unparalleled in the history of ornithology.”²⁶ By this view, the end justified the means. “I am going to see if we can get rid of the two secret documents we have,” wrote Jane Church, the secretary, chaffing at Ft. Detrick’s routine visit to her office: “If we can, this joker will only have to come to visit us only once a year instead of every four months.”²⁷ But protest was futile.

From 1965, the Program issued a series of designated Army Reports (reaching No. 91 by 1969), as well as scientific reports intended for the open literature. Some reports sent to the US Army Materiel Command were marked “Secret;” all were marked “Confidential.”²⁸ The director’s secretary also kept quarterly status reports, which amount to an official history of the Program. Beginning in September 1965, the staff also issued a small, popular newsletter – the *Pacific Bird Observer* – edited (until issue No. 6, February 1967 by Tina Clapp). Inspired by Roger Clapp, one of the Program’s earliest and most resourceful members,²⁹ this regular publication was intended for volunteer bird watchers, among others, and carried items of ornithological interest, distribution maps and photographs of the Program in action. An early editorial made a point of emphasizing the economic value of bird-banding for the Pacific tuna industry, which owed its survival to the careful monitoring of seabirds as indicators of fish movements.

Banding was the Program’s most visible achievement. Over 400,000 birds were banded by 1965, and a further 750,000 by 1968. These included Masked Boobies, Great Frigatebirds, Shearwaters and several other major species

²⁴ C. Ely to P. Humphrey, letter 12/9/65, Box 12. A procedure was apparently devised to clear reports through Charles Ely, which included vetting by John Bushman, the military liaison officer. It is not known, however, whether this procedure was used, or if it was, whether it discouraged publication, or actually restricted the publication of reports on certain localities.

²⁵ C. Ely, memo 4/23/65 and 4/28/65, Box 12. RU 245.

²⁶ C. Ely to N. Walker, letter 9/15/64, Box 13. RU 245.

²⁷ J. Church to C. Ely, 10/5/65, Box 12. RU 245.

²⁸ J. Church to staff, memo 1966, Box 6. RU 245.

²⁹ cf. Clapp, 1965a,b,c, 1966, 1968a,b,c.

– specimens of which can be seen in the Natural History Museum today. Many of these magnificent birds showed a Coleridgean resilience to human contact. In the Marshalls for example, they seemed less affected by nuclear and missile tests than expected. On Midway, human beings were far more dangerous to the birds than vice-versa. Navy personnel clubbed sooty terns for sport and brought dogs from Sand Island to run through colonies of incubating albatrosses.³⁰ On Sand Island (Johnston Atoll), where there were 300,000 indigenous sooty terns, naval personnel drove jeeps on joy rides through the colonies during their incubation period.³¹ In the Phoenix group, the US Air Force, which cultivated a more “ecological image,”³² invited a consultant from the Fisheries and Wildlife Service to set out guidelines for the treatment of birds around its base on Canton. On Howland and Baker, both administered by the Department of the Interior, cats, which were introduced to keep rats at bay, had predictable consequences for bird life. Scientific interests eventually helped shape environmental concerns; but in the early stages, military interests remained paramount.

In 1966, the Army agreed to continue the project to the end of 1967, but with a changed emphasis – linking the survey to marine mammals, deep sea fish and the wider ecology of atolls and islands – in the Eastern Pacific, including the Californian and Mexican shorelines. By 1966 staff were no longer required to be immunized against unspecified diseases for reasons that also remained unexplained. As to the military significance of it all, Humphrey, by then on his way to Kansas, says he was kept in ignorance.³³ When asked to take a study group to Wake, he asked Jane Church to write the officer in charge in hopes that “maybe then he would give us a little more information about what he is up to.”³⁴ There is no reply on record.

As 1967 drew to a close, Humphrey reported on the Program’s progress. From 2500 man-hours spent on thirty islands had come data for thirty publications, transforming scientific knowledge of the region. Looking forward to a renewal of the grant, he promised a major publication on seabird distribution.³⁵ Indeed, by this time, the Program’s emphasis had shifted from what Humphrey described as an exploratory and descriptive phase, into a “far more complicated one, in which we were more concerned about correlations and interrelationships, and in which we had to deal with vast quantities of data.”³⁶

³⁰ King, 1973, p. 93.

³¹ *Ibid.*, p. 95.

³² *Ibid.*, p. 98.

³³ P.S. Humphrey to author, personal communication 5/12/96.

³⁴ P.S. Humphrey to J. Church, letter 3/2/67, Box 13. RU 245.

³⁵ P.S. Humphrey to I.E. Wallen, letter 8/8/67, Box 5. RU 245.

³⁶ P.S. Humphrey to R. Pyle, letter 5/7/69, Box 13. RU 245.

At the end of 1967, the project was renewed for 1968, and extended to include the observation of radiation effects on the reproductive behavior of sooty terns on Eniwetok, in the Marshalls. Again the purpose of these correlations was not explained.

Between January 1967 and June 1968, the Program added another twelve survey cruises, amounting to over 10,000 miles of observations. The contract's administration was transferred from the Chemical Corps to the newly-created Army Research Office, also at Ft. Detrick. However, from early 1968, the "funding agency" seems to have expressed diminishing interest. Apparently, its curiosity had been satisfied. But research continued, and when Army funding ended in June 1969, a no-cost extension was granted to June 30, 1970, to give time to write up. Publication was destined to continue for years afterwards.³⁷ Samples and specimens remained with the Deseret Test Center. What became of them – or what eventual use was made of them – has not been disclosed.

The Survey and its Successes

In the history of Pacific ecology and ornithology, nothing of this kind, or of this scale, had ever been attempted – nor, it is said, will ever be attempted again.³⁸ Beginning with only four naturalists, the project eventually employed over two dozen, many of whom went on to senior positions in academic and government science. By August 1967, they had made over 100 cruises; traversed more than four million square miles of ocean; ranged as far north as the Pribilof Islands and over an area almost the size of the continental United States; made over 200 visits to islands and atolls; and banded over a million sooty terns. By 1969, they had sent hundreds of bird specimens to the Smithsonian and an unknown (but very large) number of blood and stomach contents samples to laboratories at Ft. Detrick and Deseret. Even on a marginal cost basis, the Program's expense to the Army, above and beyond the Smithsonian's contract, must have been colossal.

At a descriptive level, the Program was a blockbuster success. It amounted, in the words of one knowledgeable observer, to "a quantum leap forward in

³⁷ cf. Amerson, 1969, 1971; Amerson and Emerson, 1971; Amerson, Clapp and Wirtz, 1974; Clapp, 1971, 1972, 1974a,b, 1975, 1976, 1977, 1979, 1980, 1986, 1989, 1990; Clapp and Hackman, 1969; Clapp and Huber, 1971; Clapp and King, 1975; Clapp, Kleen and Olsen, 1969; Clapp, Klimkiewicz and Kennard, 1982; Clapp and Kridler, 1977; Clapp, Kridler and Fleet, 1977; Clapp and Pyle, 1968; Clapp, Robbins and Kenyon, 1980; Clapp and Sibley, 1966a,b, 1967, 1971a,b; Clapp and Woodward, 1968; Clapp and Wirtz, 1975; Ely and Clapp, 1973; Marks et al., 1990; Rauzon, Harrison and Clapp, 1984; Woodward, 1972; Woodward and Clapp, 1969.

³⁸ Interoffice Records, Sera Samples, 1962, Box 6. RU 245.

scientific knowledge of this enormous area.”³⁹ From 1969 onwards, the *Atoll Research Bulletin* published a series of reports on the natural history of the vast region, as well as on seabird migration and behavior.⁴⁰ By 1972, Program staff had published over forty-five papers, including reports on French Frigate Shoals, Pearl and Hermes Reef, Gardner Pinnacles, Necker, Nihoa, Lisianski and Laysan Islands in the Northwestern Hawaiian chain, as well as on Johnston, some of the Phoenix chain, Kwajalein in the Marshalls, and American Samoa.

There were, perhaps, some surprising gaps. Among the Leeward Hawaiian Islands, for example, Midway, located in a nuclear test area, was notably missing from the published reports, although there may be unpublished material still in the Smithsonian. Of the equatorial islands in the south Central Pacific, reports on only Caroline and Vostok were published. For some gaps, there are perhaps easy explanations. On the Phoenix chain, for example, the grant expired before the writing up of the report could be finished, despite the efforts of the research team. But the wealth of data collected on Wake Island, a nuclear storage site, merited more than the limited report that emerged.⁴¹ The natural history of Johnston was described at length,⁴² but while surveys were also prepared for Baker and Howland,⁴³ it appears that these were not published.⁴⁴

In February 1969, secretary Jane Church chose to remove from her files all reference to the Program’s military contacts, and encouraged her Honolulu station to do likewise.⁴⁵ Many aspects of the Program could be pursued more easily if Ms Church’s advice had not been so carefully followed. As it was, her directive succeeded; nothing of the military connection remains in the Program’s Smithsonian archives. To track correspondence through military records is extremely difficult, not least because of the administrative reorganisations that took place in the Army during the mid-1960s, which have severely interrupted the archival record.

Unless evidence emerges to the contrary, however, certain assumptions can be made. First, we can surmise that the contract – DA 18-064 – was in fact initiated by the Army Chemical Corps at Fort Detrick, which was involved in biological weapons testing from at least 1942. We can further surmise that, somewhere at issue, was the mode of transmission of rare

³⁹ D.R. Stoddart to author, personal communication, 11/3/99.

⁴⁰ Cf. Amerson, 1969, 1971.

⁴¹ Stoddart to author, 11/3/99.

⁴² Amerson and Shelton, 1976.

⁴³ Army Reports: Sibley and Clapp, 1965; Clapp, 1967.

⁴⁴ Records of the Program’s studies of Baker are found in Box 172. RU 245.

⁴⁵ J. Church to R.L. Pyle, letter 2/7/69, Box 12. RU 245.

diseases, carried and incubated in the blood of birds and mammals, and transmitted by mosquitoes and ticks. Blood samples were taken to determine what diseases were carried, while banding, used in conjunction with incidence data of diseases in different localities, would help determine movements of disease carriers. That was the “defensive” aspect. For the “offensive” aspect, there was the possibility – remote as it may seem – that migratory birds could deliver toxins to enemy territories. Scientific evidence that this could be done – or done reliably – remains problematic. But the close relationship between “defensive” and “offensive” research was an established fact. After the Second World War, Ft. Detrick co-sponsored studies of possible “germ weapons” with the Department of Agriculture, the Public Health Service and the Army Medical Corps.⁴⁶ In 1959, this work assumed an offensive profile, when the Chief Chemical Officer was instructed to prepare a five-year program for the development of anti-crop weapons. Thereafter, the Kennedy administration devoted \$4 billion to basic research on a range of offensive chemical and biological weapons.⁴⁷ Annual expenditure on CBW increased from \$10 million in the 1950s to \$352 million in 1969. By the mid-1960s, precisely at the time the Smithsonian contract began, Ft. Detrick was at the center of a web of CBW research and development contracts placed with 300 universities, research institutes and corporations.⁴⁸

After August 1962, when the Chemical Corps was discontinued, the administration of the Smithsonian contract was passed to the Army Biological Laboratories at the Army Chemical Center and under the Army’s new Materiel Command. At neighboring Edgewood Arsenal, the former Chemical Corps laboratories were at the time folded into a new Chemical Biological Radiological Agency and put under Munitions Command. They also formed part of the Army Chemical Center.⁴⁹ The Smithsonian sent its reports to the Materiel Command and to this Center. The archives of this Center, and of the new Chemical and Biological Defense Command that inherited the laboratories, are restricted. What follows must, subject to further documentation, remain in the realm of the speculative.

The Army, having commissioned the Smithsonian Program, and renewed its contract, may have had the support or assistance of the Special Operations Division (SOD) of the Chemical Corps’ research center at Ft. Detrick. From 1952 onwards, this Division worked closely with the Technical Services Section of the CIA, establishing what it called a special security environment for “the maintenance, assessment and evaluation of a designated balance of

⁴⁶ Cole, 1988, p. 33.

⁴⁷ Wright, 1990, p. 33.

⁴⁸ *Ibid.*, p. 35.

⁴⁹ Covert, 1997; Smart, 1994.

biological and chemical disseminating systems for operational readiness.”⁵⁰ This work produced stockpiles of lethal agents, including animal viruses. Designated MK-NAOMI, the program continued the work of MK-ULTRA, the secret enterprise begun by Allen Dulles during the Korean War for the investigation of behavior modification drugs for possible offensive use.⁵¹ There is no confirmed evidence that any of these drugs were ever deployed. However, from the late 1950s onwards, CIA-funded chemists worked on studies of poisons found in natural products in the South Pacific and the Amazon, and added these to their biological arsenal. By the 1960s, the US had at least ten different biological weapons available for use, reportedly including stocks of *botulinus*, *staph. enterotoxin*, and *brucellosis*, as well as the Venezuelan *equine encephalomyelitis* (VEE) virus, which can immobilize a person for two-to-five days.⁵²

During the same period, studies of dissemination – “delivery systems” – of biological weapons are known to have formed part of the research portfolio of both the CIA and the Chemical Corps. Among the more notorious projects were those to develop so-called “nondiscernible microbioinoculators” – the “dart gun” was one example – and aerosol sprays, along with the potential use of insects (including ticks) and other organic agents. Scientists working for MK-ULTRA also trained animals – guided animals – for possible offensive purposes, continuing a line of research that dated from at least the Second World War, and which also featured in the postwar history of behavioral psychology.⁵³ Collaboration between the Army and the CIA offered a window of “easy passage from defensive to offensive applications.”⁵⁴ The potential use of birds as carriers of toxins could easily have been among the many so-called “what if?” projects – global, encompassing, descriptive studies – conducted by private foundations and other institutions with CIA and military support.⁵⁵ To “know everything” about the world – at whatever cost – was a luxury, but one prized by governments and intelligence agencies since the Ptolemies endowed the ancient Library of Alexandria.

On April 9, 1973 – the day after the White House Counsel, James Dean, began cooperating with the Watergate Prosecutor – President Richard Nixon told his aide, Bob Haldeman, that it was time to erase the White House tapes. The tapes survived, but the Technical Services records did not. On the

⁵⁰ D.F. Chamberlain (Inspector General, CIA) to DCI, CIA, memo 5/20/75, National Security Archive, Washington D.C.

⁵¹ Marks, 1979, p. 57.

⁵² U.S. Biological Warfare Programs, February 24, 1977, pp. 40–51 *et passim*.

⁵³ Capshew, 1993.

⁵⁴ Wright, 1990, p. 36.

⁵⁵ Ranelagh, 1986; Agee, 1975; Marchetti and Marks, 1980.

orders of the CIA's Director, Richard Helms, the Technical Services Section shredded many of its files in 1973. Only a small fraction of the CIA's interest in this field may ever be made public. What links – if any – existed between the CIA, the Chemical Corps, and the POBSP are unknown. At the time, accusations were rife. Today, a quarter century later – and until an authoritative history can be written – we can only suggest a range of possibilities. But whatever those possibilities, we do know that before the Program ended, it was destined to be tested by public opinion, and so raise questions that concern us to this day.

“Disclosure”

The serenity, if not the secrecy, that had surrounded the operations of the POBSP for over six years was abruptly dispelled on Tuesday, February 5, 1969. The occasion was an NBC-TV broadcast, the second of a new series of “First Tuesday” documentaries, a “magazine format” contemporary affairs program. That evening, the discussion included a segment on secrecy and science, and focussed upon chemical and biological weapons research.

Coming at the end of the 1960s – a decade of violence at home and abroad – the Program coincided with protests against the military-industrial complex, and classified links between academic institutions, the military, and the intelligence services. Coupled with increasing concern about America's use of herbicides in Vietnam, the Program's very existence rendered the Smithsonian a vulnerable target.

On December 9, 1968, Washington correspondent William E. Small, writing in *Scientific Research*, alleged that the Smithsonian was deeply committed to studies in Brazil and the Pacific dealing with the mechanisms by which rare viruses and blood parasites are transmitted from birds, mammals and insects to man. Sidney Galler, whom Small interviewed, admitted that such studies existed, but insisted that Smithsonian researchers were, “free from pressure by the military, conducting research of their own choosing just as any scientist would under a similar agreement.”⁵⁶ “What they [the DOD] do with the data,” Philip Humphrey disarmingly added, “I don't have any idea. We just send them copies of our results.” A subsequent letter to the editor by Philip Siekevitz of the Rockefeller University condemned these “ingenuous” replies, and saw the issue as one of “adventuristic, imperialistic American military policy, the same as is causing the disaster of Vietnam.” . . . “I for one,” he added, “consider it about time that we scientists . . . get down to really thinking about our roles in society.”⁵⁷

⁵⁶ Small, 1968, p. 27.

⁵⁷ P. Siekevitz, letter to *Scientific Research*, January 6, 1969, pp. 6–7.

At a time when the war in Vietnam was being fought on evening television, it was perhaps just a matter of time before television also brought the Pacific birds into the living room. The NBC, after well over six months' preparation, opened its documentary with compelling footage of the University of Utah at Salt Lake, only eighty miles from the Army's Dugway Proving Ground, which it cited as one of fifty academic institutions taking part in secret nerve gas experiments. Spokesmen for the University explained that its research was prompted by local fears of pathogenic leakages from the nearby weapons testing site. However, they also admitted that, between 1952 and 1969, the University had received Army contracts worth \$480,000 a year, and had employed forty scientists to study the role of "vectors" – carriers of pathogens – and patterns of transmission in a range of diseases, including tularemia, rocky mountain spotted fever, bubonic plague, anthrax and parrot fever. Some of these diseases were endemic to local wildlife, but others were suggested to the Utah researchers by the Army Chemical Corps. The University claimed that such work, while classified, was not secret; the Army retained vetting rights over publication – but these, the University insisted, were rarely if ever exercised.⁵⁸

Such reassurances were not reassuring. On Sunday, March 17, 1968, the University relayed to Dugway reports from a local livestock producer that 3000 of his sheep had died in Skull Valley, adjacent to the Proving Ground. The cause of their death was never ascertained, or at least never announced; but popular opinion held that nerve agents had been used, and had drifted in the wind from the test area. For the Army, the ensuing publicity was disastrous. Almost immediately, Congress began tightening controls. Open air testing of bio-weapons was restricted, and even sea dumping of chemical munitions was stopped.⁵⁹

Appearing only eleven months after these events, the NBC broadcast revived memories of a similar kind.⁶⁰ In constructing a catalogue of conspirators, NBC's Tom Pettit reported that the Smithsonian had for years been a "cover" for Army tests, both in the Pacific and also in Brazil, where Humphrey also directed a project. On air, Pettit interviewed Robert L. Standen, a school teacher who had worked with the POBSP as a field biologist between February 1964 and July 1965. During this time he had taken part in studies on Baker Island. On nation-wide TV, Standen said a test had taken place involving a "biological carrier," but refused to say where. The NBC supplied the information that this had taken place on Baker during six weeks

⁵⁸ *University of Utah Chronicle*, February 10, 1969, pp. 1 and 3.

⁵⁹ Smart, 1991, p. 24.

⁶⁰ *Honolulu Star Bulletin*, 2/5/69, p. 1; *Honolulu Star Bulletin*, 2/5/69, p. 16; *Honolulu Star Bulletin*, 2/7/69, Box 6. RU 245.

in the northern Spring of 1965 – its purpose being to enable Army, Navy and Air Force personnel to see how animal vectors would behave in a tropical environment. “No germs were involved. In effect it was a checkout of an animal delivery system for CBW,” Pettit said.⁶¹ The allegation was unconfirmed, but stunning. Seizing the political moment, Senator Joseph Clark (D-Penn.) claimed that the Smithsonian had been a screen for Army efforts to locate a satisfactory CBW test site and a cover for “ultra-secret” tests on potential animal vectors.

On the face of it, the evidence was suggestive. If the Army were looking for a remote place to conduct experiments (including aerosol tests) without fear of wider contamination, a birdless island in the Central Pacific in an established test area far from anywhere else was ideal. Some months earlier, scientists had speculated on the possibility of finding such an island, uninhabited by man and unvisited by birds. Uninhabited, unvisited Baker and Howland Islands, might be places to start.⁶² If there were bird-life or any other life in the vicinity, it was important to learn about it. At the same time, if “guided birds” could be developed and tested there, that would clearly be of interest to the Pentagon, as well as to a potential enemy.

The Army admitted conducting tests using birds at Baker.⁶³ There is also speculation that birds from Johnston were tested at Ft. Detrick, using particle aerosols of VEE virus, although whether there were also field tests is not known. Whether Smithsonian staff were complicit in these experiments, or if so, whether they, their director or anyone else at the Smithsonian were informed of the significance of such experiments, are altogether different questions. To all intents and purposes, the Smithsonian had embarked upon a project of bird-banding and oceanographic recording in the interests of science. It had not asked, nor was it informed, of any military intentions. Had it been duped?

Such nuances were lost in the subsequent furore in the press. On February 5, 1969, *The Washington Post* announced that “Smithsonian Bird Research [was] tied to Germ Warfare Study”⁶⁴ and quoted noted author and CBW expert, Seymour Hersch, in citing the need of the Defense Department for an isolated island free of birds, to conduct tests, which would otherwise spread diseases around the world. On the same day, *The New York Times* announced that the Senate Foreign Relations Committee had “obtained information

⁶¹ *Evening Star*, 2/4/69, p. 1; *Washington Star*, 2/4/69, p. 6; Boffey, 1969, p. 794.

⁶² V.B. Scheffer (U.S. Dept of Interior, Fish and Wildlife Service, Seattle) to W.R. Norwood (High Commissioner of the Trust Territory, Saipan, Mariana Islands), letter 1/13/69, Box 6. RU 245.

⁶³ C. Ely, memo 4/23/65, Box 12. RU 245.

⁶⁴ Auerbach, 1969, p. 7.

suggesting that the Army, under the guise of a bird study by the Smithsonian Institution, is looking for a remote Pacific site to conduct experiments in chemical-biological warfare.”⁶⁵ Overnight, the “Pacific Project” was transformed from an innocent file title into a suspicious code-word.⁶⁶ The press announced that the matter was to be reviewed by the Senate Subcommittee on Disarmament, soon to begin hearings on bacteriological weapons.

Meanwhile, several lobby groups, including the Scientists’ Committee on Chemical and Biological Warfare, were holding demonstrations against the use of herbicides in Vietnam. The Federation of American Scientists called for a total ban on bacteriological warfare, and 1400 scientists at MIT heard Noam Chomsky and others call for a nation-wide, anti-war “research strike” on March 4, 1969.⁶⁷ Within the scientific community, there were angry divisions. At MIT, George Wald, the Harvard Nobel Prize-winning biologist, savaged the American Institute of Biological Sciences for co-sponsoring a conference at Ft. Detrick in 1968.⁶⁸ On the other hand, a conference at Stanford (billed as “convocation, not confrontation”) – which coincided with the MIT meeting – heard Merrill J. Snyder, a microbiologist from the University of Maryland, praise Ft. Detrick for its good work.

Whatever the merits of Ft. Detrick and its work, the publicity was damaging for the Smithsonian. From the day after the broadcast, the NBC’s allegations produced a flurry of denials. The Army denied any ulterior motive behind its sponsorship of the six-year, \$2.7 million study. But what, then, were its motives? Confusion was further compounded. Studies at Baker, the Pentagon said, were to investigate the natural distribution of diseases among migratory birds. No, the DOD Public Information office said – they were to investigate the problem of dealing with birds flying on military landing strips. In either case, they had nothing to do with chemical or biological weapons.⁶⁹

George Watson, a member of the Program’s staff who also held research funds from the Army for other studies of migratory birds – and who perhaps spoke for some of his colleagues – retreated into the bliss of ignorance, when he quixotically assured reporters that “I am naive enough *not* to know where my money comes from.”⁷⁰ But rumors spread and implicated the Smithsonian

⁶⁵ “News Feature,” *New York Times*, 2/5/69.

⁶⁶ G.C. Wright to President L. Johnson, letter 12/30/68, Box 6. RU 245; Department of Defense to G. Wright, letter 1/18/69, Box 6. RU 245.

⁶⁷ Beloff, 2/19/69, Box 6. RU 245. The same article claimed that, although the Defense Department was currently receiving between five and eight times more applications for grants from academics than it could fund, relations with the universities had become “far less amiable and productive than they were.”

⁶⁸ Nelson, 1969; Tschirley, 1969.

⁶⁹ Department of Defense, 1969, Box 6. RU 245.

⁷⁰ J. Church to P. Humphrey, letter 2/14/69, Box 13. RU 245.

birdmen in a sinister conspiracy. Why else should bird watching, whether in Brazil or the Pacific, be financed by Fort Detrick?

When approached by the press, the Castle categorically denied any connection. “The Smithsonian has never engaged in any chemical or biological research for the armed forces or anyone else,” Sidney Galler insisted.⁷¹ It emerged that Galler, Assistant Secretary for Science, had come to the Smithsonian in 1965 from the Office of Naval Research (ONR), where he had been head of the Biology Branch (1950–1965). At the ONR, Galler had overseen projects related to “environmental warfare,” and had even helped Humphrey get a contract for work similar to that of the Pacific Program. “I wasn’t interested in the germs,” Galler was reported as saying, “I was interested in the animals and their behavior that could be utilized by an enemy to carry the germs.” “Some Pacific birds,” he added, can “migrate tremendous distances and reach target areas with about 97% accuracy.” At the same time, he said, he was not at first aware that the Pacific Program was classified.⁷² In August, 1968, when the contract was renegotiated, he obtained the removal of the clause that required prior military approval before publication.⁷³ It is not clear whether this modification – vital, according to Sidney Galler, for “developing a successful relationship between a scientific organization and a sponsoring agency”⁷⁴ – made a significant difference to the outcome.

For two weeks, the issue festered and fermented, and became the talk of Washington’s conversation culture. Within the Smithsonian, two urgent meetings of the Senate of Scientists, took place in the Natural History Museum. The Senate had been established in 1963 to represent the professional concerns of the research staff. Loosely modeled on the idea of an American university Senate, it reflected discontent with poor communications across the Mall, and was intended to function, in its own words, as a “trouble shooter and source of collective opinion outside normal administrative channels.”⁷⁵ For some time, it had limited its recommendations to such matters as parking, library services, data processing, and publications. Now, for the first time, there was an issue that transcended parking space.

Clifford Evans, as Chairman of the Senate (1968–1970), called upon Galler to explain the sequence of events that had occurred since the article in *Scientific Research*. It transpired that Pettit had apparently telephoned the Smithsonian some weeks before the television program was aired, and had been sent a copy of the contract. The issue in Evans’ mind was whether

⁷¹ *Honolulu Star Bulletin*, 2/5/69, p. 1.

⁷² Gup, 1985, p. 14.

⁷³ S. Galler to J. Sugar, letter 4/1/69, Box 6. RU 245.

⁷⁴ S. Galler to J. Church, memo 1/13/69, Box 6. RU 245.

⁷⁵ Introduction to RU 429.

there were any circumstances in which the Smithsonian should abridge a researcher's right to seek funds.⁷⁶

The answer was of great importance to staff and secretariat alike. On February 10, 1969, Leonard Carmichael, by then retired from the Smithsonian, received a call from S. Dillon Ripley, the distinguished ornithologist and wartime Far East OSS analyst, who had succeeded him as Secretary in 1964. In an *aide-memoire* prepared after the event, Carmichael recalled that the Army contract had stipulated only that reports be submitted to the Army; scientific papers were to be submitted to the Army before publication only to ensure that "they did not provide non-public information concerning military installations."⁷⁷ To the best of his memory, no report was ever challenged or paper altered. By implication, the Program was not "secret."

This was not enough to satisfy the Senate of Scientists. A second meeting of the Senate heard Galler deny he had ever seen the contract and its clause concerning classified research, and then say that he had since removed the offending clause in the last renewal. He further announced that neither he nor Richard Cowan, Director of the Natural History Museum "had ever been given full access to information about the Pacific Bird Project . . ."

Opinion was divided on whether Defense funds, however badly needed, should be *ipso facto* excluded, or whether such funds should be accepted on a case by case basis. The Senate debated the issue, resolving to "keep its cool for the present," and to deplore the lack of communication between staff and administration that had allowed "this type of thing" to happen.⁷⁸ A statement was prepared for Ripley emphasizing freedom of publication and rejecting involvement with classified research; this, Galler later qualified, to distinguish between institutional and individual engagements.⁷⁹ On February 9, Humphrey was called before the Senate of Scientists to explain his work at Belem and in the Pacific. At the Senate's insistence, Humphrey agreed to terminate the contract in July 1969, and to explore ways of removing DOD funds from Belem. A tape-recording of the conversation was reportedly kept for Ripley.⁸⁰ The following week, Nora Beloff writing for *The Observer* in London reported that the case would surely now go to Capitol Hill and be reviewed by the Senate Sub-committee on disarmament, which was to open hearings in early March.⁸¹

⁷⁶ See Evans, Memorandum 2/5/69, Box 4, Folder 2, RU 429.

⁷⁷ Carmichael Papers, Smithsonian file, 2/11/69.

⁷⁸ Third Council Meeting: Senate of Scientists, 2/6/69, Box 4, RU 429.

⁷⁹ S. Galler to Ripley, 2/7/69, Folder 2, Box 4, RU 429.

⁸⁰ C. Evans to Officers of Senate of Scientists, 2/9/69, Folder 2, Box 4, RU 429.

⁸¹ Beloff, 2/16/69.

Against the allegations aired on NBC, the Castle issued a press statement explaining that the Survey was a “basic research program consistent with the Institution’s traditional scientific pursuits.”⁸² Its purpose was simply to accumulate data on the plants and animals of the region and on climatic and oceanographic variables “to permit broad ecological conclusions to be drawn.” Its funds, it explained, came from the Army Research Office. Ripley, who claimed to have been previously uninformed about the Survey, defended it as fascinating – a “wonderful project from the scientific point of view – the fulfillment of a dream.”⁸³ No mention was made of Fort Detrick, the Chemical Corps, or for that matter, the distribution of diseases.

The issue came to a head on February 21, when Philip Boffey, a respected reporter for *Science*, killed the story – or so the Smithsonian thought – in a major feature article.⁸⁴ The Castle unequivocally denied that it had been “an unwitting dupe or cloak” for biological warfare research, and Boffey found no evidence to the contrary. Boffey dismissed the NBC’s allegations as “marred by the use of loaded words and guilt-by-association reasoning.”⁸⁵ Standen, and everyone else on the Program team, had been routinely excluded from military discussions, whether in the field or in Washington. Senator Clark’s testimony was dismissed as factually unsound. Worse, *The New York Times* (of which Boffey later became Science Editor) had apparently not confirmed its sources. No one had taken the precaution of interviewing senior staff at the Smithsonian. The attack was, apparently, just a press beat-up. Boffey easily demolished it, and indirectly endorsed the Castle’s plea of innocence. He limited his own criticisms to the observation that, in such heady times, “an institution that wishes to maintain an unblemished reputation can’t merely follow its traditional *mores* – it must consider the changing values of the public as well.”⁸⁶

On February 26, the Senate of Scientists heard Ripley say that the project had “no more scientific merit,” and should be discontinued, and confirmed the extent of Humphrey’s role in it.⁸⁷ In its leader on March 3, 1969, *Barron’s* believed the Smithsonian had been “cleared” of any guilt, even by association.⁸⁸ And there the story might have ended. But it did not. On the contrary, it became a *cause célèbre*.

⁸² Press Release, Folder 2, Box 4. RU 429.

⁸³ Boffey, 1969, p. 791.

⁸⁴ *Ibid.*

⁸⁵ *Ibid.*, p. 793.

⁸⁶ *Ibid.*, p. 796.

⁸⁷ Evans’ notes of meeting, 2/26/69, Folder 2, Box 4. RU 429.

⁸⁸ *Barron’s Weekly*, 3/3/69.

On March 5, 1969, Congressmen in closed session heard reports that the United States was spending \$300–350 million a year on CBW research and development – a figure too low in the estimation of some members of the House Appropriations Committee, but too high for Rep. McCarthy (R.-New York), who demanded less secrecy surrounding such research.⁸⁹ From the Army agency that commissioned the work, came no comment at all. Instead, the Defense Department re-issued a statement, re-stating that the Survey was designed, innocently enough, to study the natural distribution of diseases, as they might affect the health of servicemen and civilians abroad; to study the impact of US installations on bird populations; and to study the persistent problem of birds colliding with aircraft on tropical airstrips. These were valid reasons, even if no one believed that they exhausted the list.

Nowhere in the original Smithsonian contract was the study of animal diseases mentioned. However, in a statement to Senator William Fulbright and the Senate Foreign Relations Committee, and copied to the Secretary of the Smithsonian, the Defense Department explained that it was one of “many agencies and governments” interested in the problem of diseases carried by migrating birds and animals. Similar studies were being supported by the Rockefeller Foundation in Brazil, by the United States Public Health Service in Mexico, and by the Gorgas Memorial Laboratory in Panama. These sought data on the susceptibility of hosts, and on the life history and migratory habits of such animals. The American military presence in the Pacific had, the Department stated, raised concerns about bird populations in affected areas, and the Smithsonian had submitted a proposal for basic research to supply the data. After six years, the Program had shown that US military activity had not in fact reduced bird populations. Its studies had thrown new light on migratory habits and, intriguingly, had found that certain species were susceptible to certain diseases, and to at least one human disease.⁹⁰

Into the melee thus came the suggestion that the initiative for the Program might have actually come from the Smithsonian, and that the distribution of disease was a key element in its inception. But the Smithsonian had stated repeatedly (and correctly) that it did not do research on disease; the Program merely allocated blood samples and specimens. What the Army did with them, was the Army’s concern. However, the Defense Department had stated unequivocally that it “had not been studying birds as potential carriers of biological warfare agents.”⁹¹ But what then were these studies for? Someone was being economic with the truth.

⁸⁹ “New Chemical Warfare Superiority Cited by Army in Congress Briefing,” *The Washington Post*, 3/5/69, Box 6. RU 245.

⁹⁰ “Pacific Project.” N.d., Box 6. RU 245.

⁹¹ Boffey, 1969, p. 792.

The Smithsonian's Albatross

Biological vectors come in two categories – communicable (e.g. smallpox) and non-communicable (e.g. anthrax and tularemia). Whether the Army conducted field tests of such biological vectors is difficult, if not impossible, to confirm.⁹² There is speculation that the Army did conduct tests on Baker with uninfected mosquitoes and that cats were also put on Baker for experimental purposes. But the results, if any, of such alleged tests are unknown. However, in at least one case we know the Central Pacific was used as a biological testing area. It has been revealed that in the summer of 1968, open air tests were conducted downwind of Johnston Atoll, 1600 km south west of Hawaii. These were part of a series that reportedly began as early as 1964,⁹³ and would therefore have overlapped with the Smithsonian contract. Following the model of nuclear tests, the tests involved a fleet of ships – in this case, anchored upwind from a set of barges loaded with Rhesus monkeys. The tests consisted in the dissemination and monitoring of small amounts of a fine “bio-powder” (the nature of which has not been disclosed). Following the “laydown,” over half the monkeys died. These tests were so “successful” that William Patrick, a noted “bio-weaponeer,” has concluded that tactical use of similar “laydowns” could devastate whole cities – more effectively, it was said, than ten-megaton hydrogen bombs.⁹⁴

At the time, all this was secret. However, even a rumor of secret “tests” was enough to alarm the region and awaken local concern. On March 6, 1969, the Hon. Patsy Mink (D-Hawaii), a leading voice in the House of Representatives, asked the Secretary of the Smithsonian to clarify the project's implications for the Hawaiian Islands. Ripley assured her that “accusations made to the effect that the Smithsonian is conducting germ warfare research or even that we are serving as a cover for the Department of the Army in such research are unwarranted.”⁹⁵ Behind the scenes, however, the Castle went into damage control. Ripley issued a sharp notice, emphasizing that “responsibility for public information rests with the director of the Office of Public Affairs. All information issued to the press and other communications media should be issued by or through this Office.”⁹⁶ Richard Cowan, reined in the Program, by reducing Humphrey's role, curtailing fieldwork, and seeking to wind up the writing of final reports as quickly as possible. Humphrey was then acting for the Smithsonian in three capacities: as a tech-

⁹² DISA, 1998, Bibliographic Search.

⁹³ Preston, 3/9/98, p. 60.

⁹⁴ *Ibid.*, p. 60.

⁹⁵ P. Mink to S.D. Ripley, letter 3/6/69, Box 6. RU 245; S.D. Ripley to P. Mink, letter 3/18/69, Box 6. RU 245.

⁹⁶ S.D. Ripley to Staff, Folder, 2, Box 4. RU 429; see also entry, *Droppings*, 2/19/69.

nical advisor for a rain-forest exhibit, as principal investigator of the POBSP, and as liaison with the Belem project. When his status as an “absentee landlord” was criticized, his role was redefined, and he continued as research associate in the Department of Vertebrate Zoology for the completion of the final reports. After July 1, responsibilities for Program data was transferred to George Watson, who was required to inform the Secretary and the Museum of any further work or grants received.⁹⁷ Cowan also asked that the administration of Humphrey’s Brazilian research be moved from the Smithsonian to Kansas.⁹⁸ Some suggested that either the National Science Foundation should take over the work⁹⁹ or that it should just be separated from the Smithsonian.¹⁰⁰ There was the example of Utah’s Department of Ecology and Ephizology, which formed a private company [in this case, Ecodynamics, Inc.] to bid for contracts from the Deseret Test Center.¹⁰¹ The abrupt about-turn on the part of the Castle was a victory, of sorts, for the Senate of Scientists. Never again would intra-Smithsonian commitments be so poorly coordinated. And the Senate, thus empowered, went on to defend staff who took up positions of conscience during the Vietnam moratorium.¹⁰² Humphrey was apparently eager to continue the project under the umbrella of the Smithsonian, but only on his terms and with continued support from the “funding agency.”¹⁰³ However, he must have known that this would require Ripley’s agreement – which, since the NBC program, was at best an open question.¹⁰⁴

Further military support of the Program was, in any case, becoming less likely, as the political climate chilled. Ten years earlier, in 1959, the House of Representatives had been assured that biological agents were “nothing new and mysterious,” and that micro-organisms that might be used as weapons were the “same diseases which public health measures and personal hygiene traditionally aim to thwart.”¹⁰⁵ A decade later, such attempts to domesticate the question had lost their appeal. Bio-weapons research was intended “to minimize the possibility of technological surprise.”¹⁰⁶ Yet, it had become increasingly clear that other countries, including the poorer countries of the

⁹⁷ Clifford Evans to “Whom it May Concern,” 11/17/69, Box 4. RU 429.

⁹⁸ R. Cowan to P. Humphrey, letter 3/5/69, Box 13. RU 245.

⁹⁹ J. Church to G. Watson, letter 3/19/69, Box 5. RU 245.

¹⁰⁰ P.S. Humphrey to J. Church, letter 4/15/69, Box 13. RU 245.

¹⁰¹ D. Parker to J. Church, letter 7/15/69, Box 5. RU 245.

¹⁰² Clifford Evans to General Counsel, 10/16/69, Box 4. RU 429.

¹⁰³ P.S. Humphrey to R. Cowan, letter 3/26/69, Box 13. RU 245; P.S. Humphrey to J. Church, letter 9/9/69, Box 13. RU 245.

¹⁰⁴ P.S. Humphrey to R. Pyle, letter 3/26/69, Box 13. RU 245.

¹⁰⁵ “Research in CBR,” Report 815, 1969, p. 7.

¹⁰⁶ SIPRI, 1973, p. 193.

world, could also develop “germ warfare” techniques, leaving the United States at an unprecedented disadvantage. In April 1969, the Secretary of Defense was asked to explain to the American people the benefits of the policy of Nixon’s Administration. Continued support for CBW research was certain to meet resistance in Congress.

As far as is known, the Smithsonian Archives do not reveal whether the Institution wished the project to continue, or if so, whether the military would have agreed; but in December 1969, John Bushman, the Smithsonian’s Army liaison, reported that his Command had said “no” to further funding.¹⁰⁷ In 1969, pressured by public opinion, the Senate’s Foreign Relations Committee had begun a year-long investigation into the Nixon Administration’s chemical, biological and radiological warfare (CBR) program, and into its practice of co-opting academic scientists into classified research. In November, President Nixon reaffirmed a “no first use” principle for chemical and incapacitating weapons, and renounced American offensive research for biological weapons.¹⁰⁸ By Executive Order, US Government agencies were required to destroy all bio-weapons technology, including “any specifically developed organism or toxin and information which would assist in developing such weapons.”¹⁰⁹ This reportedly reduced the Pentagon’s \$22 billion R&D and procurement budget by \$2 billion.¹¹⁰ At the same time, a “thorough review” of “all reports, studies and reference material was conducted,” and less than 20% of archival material was retained.¹¹¹ Absence of evidence is not evidence for absence, but without documentation, much of the story will forever remain unclear.

There, at present, the historical matter rests. The POBSP was officially wound up in June 1970. The last year included an extension to write up final reports, and to catalogue specimens – some perhaps destined for Utah, but most for the Smithsonian. During this final year, Jane Church, the Program’s ever-efficient secretary, kept to the letter of the law, insisting upon security clearances for all staff, whilst hoping that soon “it will all just go away.”¹¹² In the end, it did all go away, if more with a whimper than a bang.

In the end and despite the huge cost, a final report proved difficult to produce. In what remains the best overview, published halfway through the project in the Smithsonian’s *Annual Report* for 1965, Humphrey envisaged

¹⁰⁷ J. Church to P. Humphrey, letter 12/16/69, Box 13. RU 245.

¹⁰⁸ Smart, 1991, p. 25.

¹⁰⁹ P. Cilladi-Rehrer (Command Historian, U.S. Army Medical Research and Materiel Command) to Professor Steiner, letter 10/2/98.

¹¹⁰ *The New York Times*, 7/4/69.

¹¹¹ N. Covert (Command Historian) to M. Rauzon, letter 7/17/98.

¹¹² J. Church to P. Humphrey, letter 4/17/69, Box 13. RU 245.

the program would establish a descriptive baseline, which would be invaluable to future generations, conducting comparative studies of man-induced changes in the environment.¹¹³ The need for such, he said, was urgent, and all the Smithsonian scientists who have written on the subject have agreed. Given global warming and other effects of environmental change upon animal life, it is even more urgent today. In 1970, Humphrey reported that he had assigned individual staff to write up separate parts of the project – e.g. island accounts, life histories, migrations and taxonomic revisions – within five years' time.¹¹⁴ In 1973, Warren King published a summary of the ecological side of the Survey,¹¹⁵ but a quarter century later, we still lack an integrated analysis of the inter-relationships between seabird migration, habitat and ecology of the principal species of the region.

Nevertheless, in scientific terms, the Program's achievements were monumental. Its many papers form a major contribution to ornithology.¹¹⁶ For the first time, science had a grasp of the ecology of the Northwestern Hawaiian islands, as well as population estimates for the great seabird colonies of the Phoenix group.¹¹⁷ Thanks to the Program, Sand Island ranks among the best studied seabird colonies in the world.¹¹⁸ Many of the Program's staff went on to do significant research afterwards.¹¹⁹ Not least in this respect, the Smithsonian faithfully observed its continuing role in the long history of scientific expeditions, dating from the Wilkes Expedition and the *Challenger* survey of the nineteenth century, to which both science and the national interest remained deeply indebted.¹²⁰

Conclusion

At the end of the day, the Smithsonian described the Program as “one of the most successful modern day field studies ever done.”¹²¹ Its scientific value, not least to the study of biodiversity, is abundantly clear. Yet, it had begun without a theoretical model to test, or set of questions to answer. It was, in

¹¹³ Humphrey, 1965, pp. 21–30.

¹¹⁴ P.S. Humphrey to G.E. Watson (Department of Vertebrate Zoology), letter 2/9/70, Box 13. RU 245.

¹¹⁵ King, 1973.

¹¹⁶ Clapp, Udvardy and Kepler, 1996.

¹¹⁷ Stoddart, 11/3/99.

¹¹⁸ Schreiber and Chovan, 1986, p. 487.

¹¹⁹ Schreiber and Schreiber, 1988, p. 90; Burger, Schreiber and Gochfeld, 1992, pp. 815–822.

¹²⁰ For the Wilkes Expedition, see Viola and Margolis, 1985. For the *Challenger* survey see Deacon, 1971; Swire, 1938; Linklater, 1972; Schlee, 1973; Rehbock, 1992.

¹²¹ Gup, 1985, p. 9.

fact, an exemplary exercise in nineteenth-century natural history, funded with twentieth-century objectives. Its scientific history properly lies in its extensive collection of data and reports. But, as this essay has argued, that history is in certain respects incomplete. The POBSP remains not so much a significant memorial, as a problematic moment in the history of the Smithsonian Institution.

Today, it remains unclear what part “bird studies” played, and whether, (or if so, how) they featured within the larger American program of biological weapons tests. The public information office at the Deseret Center reports that it holds no administrative papers about the “birds project;” the Archivist of the US Army states that no papers relating to the project can be found. None have as yet been located in the CIA papers deposited in the National Archives; and key Department of Defense records for this period have been destroyed. Documents recently obtained under the Freedom of Information Act by Professor Richard Steiner of the University of Alaska, who is collaborating on a study of the Program with Mr Mark Rauzon, suggest that, far from being unique, it was only one of a series of projects on disease vectors undertaken during this period by military and civilian agencies – including the Office of Naval Research and Naval Medical Research Units (NAMRU) – based at various points on the globe, including Cairo, Taipei and Jakarta.¹²² These may also have, from time to time, employed or hosted Smithsonian staff.¹²³

In the fullness of time, before memories fade, the Program may yet yield information that will clarify the alleged military purpose, one way or another. There remains a serious scientific interest in the results of the ca. 5000 blood samples and specimens ostensibly still held by the Army, and of unique importance to the ecological movement.¹²⁴ There is also a legitimate historical (if no other) interest in allegations concerning Cold War research on animals as carriers of disease, or as monitors of biological activity in potentially enemy localities. If such were among the “real” issues underlying military sponsorship, then a continuing agenda cannot be ruled out. Research can presumably give answers to some questions, such as: can migratory birds carry biological weapons (“diseases”) reliably; and if so, which, how, and how far? Can the analysis of migratory birds actually reveal the location and nature of biological and chemical weapons tests? The recovery from Vladivostok of a Frigatebird banded on one of the Phoenix Islands was enough to suggest to visiting academics a likely connection between

¹²² K.D. Akers (FOIA) to R.G. Steiner, letter 8/12/98.

¹²³ D. Challinor to author, personal communication 11/30/98.

¹²⁴ *Providing Scientific Information About Birds*, Ornithological Council, 1997.

the Program and a keen military interest in such questions.¹²⁵ Locating birds carrying traces of incubated diseases could have serious intelligence implications.

Since 1969, research on biological weapons has greatly “advanced,” and the POBSP is no longer “news.” But the fundamental historical and procedural questions it once posed have refused to go away.¹²⁶ In 1985, sixteen years after the “disclosures” of the NBC, *The Washington Post Magazine* featured an account of the Program as “one of the largest and most mysterious undertakings” in the Institution’s history.¹²⁷ By this time, it was fairly clear that the Program had been, in fact, two projects, not one. The Smithsonian had pursued its commitment to the increase of knowledge. The Army – the “funding agency” – obtained its data, and made a use of it that remains obscure. A fair division of labor?

Perhaps, despite the elapse of so much time, it is still too early to rush to judgement. A new and potentially controversial study of American biological weapons testing has recently appeared,¹²⁸ and public concern is not likely to diminish.¹²⁹ For the present, on the basis of what we know, we may offer three conclusions and a speculation.

First, in relation to the allegations made against the Smithsonian, it may be argued that field staff were almost certainly not knowingly complicit in bio-weapons testing. At the same time, while press allegations of “conspiracy” were wide of the mark, senior members of the Program did come across as being selective in their memory of events, and naïve in their interpretation. Stephen Jay Gould, writing from Harvard, deplored the Smithsonian’s apparent willingness to forego research ethics for the sake of federal dollars.¹³⁰ Surely, few who took part in systematic naval cruises under conditions of high secrecy, or who met with staff from the Deseret Test Center, or who were involved in the collection and dispatch of blood samples to Army laboratories could have discounted a serious military motive in what they did. Arguably, of course such matters were not made clear to the Castle. If not, the question remains, why not? And if they had been, what would the Castle have done? The issue remained to haunt the Smithsonian, and sowed distrust between the Natural History Museum’s staff and the Smithsonian’s management. “If there was any doubt of the unity of natural history scientists in the Senate of Scientists,” recalled Clifford Evans, “that’s when it really got

¹²⁵ D.R. Stoddart to author, personal communication 8/14/96; Scheffer, 1/13/69.

¹²⁶ Aftergood, www.for.org, 1999.

¹²⁷ Gup, 1985, pp. 8–14.

¹²⁸ Regis, 1999.

¹²⁹ Richelson, 1998.

¹³⁰ Gould, 1969, p. 497.

unified, over that flap.” Humphrey, in Evans’ view, had “made a deal with the White House to get involved in germ warfare. He went and told Ripley and Galler, and those guys kept it over there and didn’t tell him, ‘Look, man, you’re doing the wrong thing because we don’t work in this kind of activity’.”¹³¹ Perhaps it is true that “Ripley got his fingers burnt.”¹³² I have found no evidence that the Castle was in any sense complicit in bio-weapons testing. But what seems indisputable, is that better communications within the Institution were urgently needed.

Second, the Smithsonian’s technical defense of its right to open publication was correct, well justified and, apparently, uncontested. Its publications offer ample proof of its capacity to publish. However, it is not clear whether the stated clearance limitations, actually inhibited *complete* publication. There do seem important gaps in the record – notably in relation to Baker, Howland and perhaps less mysteriously, Christmas Island (whose absence may be more easily explained in military terms). However, even the absence of a report on Christmas is interesting, considering the amount that has been published on other test sites, including Bikini, Eniwetok and Mururoa.¹³³ More disconcerting, was the fact that the “restrictions” were not reciprocal – that is, there was no authority given the Smithsonian to restrict its client’s use of data. The question here went, again, to the motives of the sponsor. If, in fact, scientifically invaluable specimens collected by the Program and sent to Army laboratories were actually destroyed without consultation – in 1969 or afterwards, when the operational files were destroyed – then there remains questions that are still worth asking.

Thirdly, the events of 1969 reveal the Smithsonian as a benign if somewhat bifocal agency, caught off guard and finding itself, in the midst of the Vietnam war, in an uncomfortable relationship to military sponsorship. Before the 1960s, no one questioned the Smithsonian’s patriotism or its place in the spectrum of government-sponsored research. By the late 1960s, however, the public mood had shifted, and as the Institution discovered, the Castle had not kept pace. At one level, the Pacific Program was a perfect manifestation of the Institution’s desire to be of service to government, coupled with an understandable keenness for government funds and facilities. But the Smithsonian enjoyed a special, almost unique position of public trust – exemplified in the public’s affection for its museums, its zoo and its Secretary, S. Dillon Ripley, a man of high scholarship and integrity, widely respected by the scientific community and Congress. It was this sense of public trust that, some argued, had been betrayed by what seemed like an unseemly co-habitation

¹³¹ Evans, 5/28/75, p. 66.

¹³² Ibid., p. 67.

¹³³ Stoddart, 1999.

with interests that were then waging a chemical, if not also a biological war in South East Asia.

In a larger context, and in a way representative of the Cold War at its deepest, the Smithsonian's experience reveals a growing division between public and academic perceptions of fundamental research.¹³⁴ The Smithsonian's acceptance of military work was held by a growing number of citizens, congressmen and practicing scientists to be incompatible with the ethos of free enquiry. The Director of the Program felt safe in seeking refuge behind a long-accepted distinction between basic research and its later application (or misapplication). But by the late-1960s, such a distinction appeared tenuous, if not untenable. Academics committed to open publication also relied upon government support, much of which was military, and some of which might be classified. For a closeness between academic and military interests, there was ample rhetorical justification of the most patriotic and democratic kind. "My observation," noted Sidney Galler, "over many years of experience, is that an important by-product of the association of federal agencies with the academic community has been an extremely valuable balance in viewpoint which has resulted in the strong reliance of many agencies on the advice received from the university scientists through councils, committees, task forces, etc."

"I am convinced," he added, "that this interaction is a major force in the evolution of a fundamental research capability in this country which is second to none." By the same token, he argued, "it would be a great mistake to build high fences between the agencies and the academic community which would separate these two important elements and reduce the wholesome influence of our scholars and scientists on the decisions and courses of the federal establishment."¹³⁵ Whether such "high fences" were ever built, remains a matter for further investigation, although after the events of 1969, one could forgive the Smithsonian for being less keen to contract for "Defense-related, applied research." In negotiating a contract with the Castle in 1971 for further studies of the Phoenix Islands, the Air Force representative expressed fears of a growing association between serious scientific researchers and a "lunatic fringe . . . who have gone off the deep end in their anti-military activities." He hoped the Smithsonian would see reason and "recognize that in the national interest some broad wording of an anti-military nature could seriously damage American national interests, since at some point we may need, as we have in the Phoenix Islands, to establish tracking facilities or other capability and do it without any appreciable injury to the environment. We will certainly appreciate your help and that of the Institution to combat this

¹³⁴ Saunders, 1999.

¹³⁵ Galler to J. Sugar, letter 4/1/69, Box 6. RU 245.

kind of erroneous thinking.”¹³⁶ In the event, a compromise was reached. As the relevant Smithsonian officer sensibly put it, “We are always ready to continue our firm relationship with the Air Force on this matter.”¹³⁷ In fact, the Smithsonian continued to accept defense contracts – between 1975–85, over \$10 million in research funds – but after 1970, none, I believe, for work whose publication was classified.

What was the “Birds Project” really about? Clearly, there were both scientific and military motives, and perhaps an intelligence motive as well. Whether funds came ultimately from the Army or from the CIA, perhaps made little difference to the research outcome; but even the remotest suggestion of CIA involvement raised deep sensitivities. In 1985, Ted Gup called attention to the connection between the CIA and Leonard Carmichael’s participation in the Human Ecology Fund, a well-known CIA conduit for research on behavioral control. It is known that the CIA routinely used academic institutions to conduct research. Carmichael’s connection with the HEF was personal, not institutional, but there is evidence that he met HEF staff at his Smithsonian office. In 1977, Ripley wrote to the CIA, disassociating the Smithsonian from any CIA work on behavior modification. By that time, there was no longer any association between the POBSP and the military. But by that time, perhaps it was no longer necessary – the CIA was apparently working on a “bird study related to biological weapons” of its own.¹³⁸

We conclude with a speculation. Thanks to the thirty year rule, we know that three days after Kennedy took the oath of office, his newly appointed Secretary of Defense, Robert McNamara, celebrated for his application of management techniques at the Ford motor company, embarked upon a massive review of American defense operations and spending. It is argued that among some 150 separate projects, there was at least one, Project 112, that concerned chemical and biological warfare. In the project, staff were asked to examine all possible applications of CBW, including uses as an alternative to nuclear weapons; and to “prepare for the development of an adequate biological and chemical deterrent capability, to include cost estimates, and appraisal of domestic and international political consequences.”¹³⁹

The military, it is said, held that such weapons already existed, but were of limited use; what was useful, was their unique ability to produce “controlled temporary incapacitation,” rather than mass destruction of property. The project recommended a four year program of research on CBW weapons

¹³⁶ P.F. Hilbert (Deputy Undersecretary of the Air Force) to Ripley, letter 9/3/71, Box 528. RU 99.

¹³⁷ Challinor to Hilbert, letter 9/22/71, Box 528. RU 99.

¹³⁸ Gup, 1985, p. 13.

¹³⁹ Regis, 1999, p. 185.

systems and biological agent manufacture. The program was to focus on sprays rather than bombs, and on incapacitating rather than lethal agents; all three services were to share the costs; and all tests would take place outside the continental US, and preferably in climates that would replicate likely target areas in the Soviet Union and Vietnam. These conditions were, coincidentally to be found in the Aleutian Islands, and in the Central Pacific.

In September 1970, the Smithsonian came under renewed scrutiny by the House Committee on Administration, which produced the first comprehensive congressional report on the Institution in over a hundred years. Whilst “patting them on the back” for their good work, the chairman agreed that the Institution had become, in the words of *Science*, a “far more complex and diversified organization than most people, including most members of Congress, realize.”¹⁴⁰ Its staff, Sidney Galler observed, had nothing in common with the popular image of “guys with green eye shades or with pith helmets and butterfly nets.”¹⁴¹ Thanks to the collections of the Natural History Museum, Richard Cowan observed, researchers could “[d]etermine such things as the natural radiation levels found in planktonic organisms collected before nuclear weapons tests, the load of metallic compounds carried by organisms before air pollution reached its present levels, and the biochemical makeup of organisms collected before DDT and other persistent pesticides came into use.”¹⁴² The Institution’s budget, despite having risen from \$46 million to \$55 million in three years, was nevertheless suffering slow starvation brought about by the demands of science. The Department of Vertebrate Zoology was singled out as especially “undernourished.” Given such needs and opportunities, funding from the military seemed merely natural.

Whether the Pacific Ocean Birds Survey Program was one of the series of scientific projects initiated by the military during the first months of Kennedy’s Administration, whether it played a role in biological and chemical weapons testing, and whether the Castle was conscious of taking on this obligation deserve answers this paper has not been able to give. Requests for information under the Freedom of Information Act await reply. Without them, we will not know why the birds of the Central Pacific came to play a long-running role in the theatre of the Cold War. We do know that they were principal characters in one of the most damaging episodes in the history of one of America’s best-loved institutions. We do not know what military uses arose from their study. But we suspect that these are not questions that we can safely ignore. The history of the Program is a matter that is no longer, to say the least, strictly for the birds.

¹⁴⁰ Carter, 1970, pp. 960–963.

¹⁴¹ *Ibid.*, p. 963.

¹⁴² *Ibid.*

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