Kako Morita: A Japanese Artist and His Struggle to Survive as a Scientific Illustrator of Fishes and Other Natural History Specimens in Early 20th Century America

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Preface

The Smithsonian Institution's National Museum of Natural History (NMNH) Division of Fishes Illustration Collection includes approximately 30,000 fish images comprising mostly pen and ink line drawings and a significant number of watercolors and paintings that are of scientific, historic, and artistic importance. The images were made from the early 1800's to the present, and they enhance the alcohol-preserved specimen collection by detailing morphological and chromatic features of specimens that were apparent when the species first became known to science, but which since may have subsequently deteriorated or faded on the actual specimen (Fig. 1, 2).

This scientific illustration collection is the largest of its kind in the world and is directly associated with some of the type specimens in the fish collection at NMNH and other institutions. This collection is an important resource in the study of ichthyology. The illustrations are used primarily by researchers, both within and outside of the Smithsonian Institution, to assist in comparative studies of new species descriptions and to identify fish species.

Scientists used, and continue to use, illustrations to describe new species in conjunction with written descriptions of the specimens. The actual specimens described in new species descriptions are referred to as type specimens and are those from which the taxonomic name is made available to science. Many of these illustrations have a scientifically valuable relationship to the type specimens housed in the fluid-preserved collection.

The illustrations of these species are copies of record for the species they represent and often were published in scientific journals as a part of new species descriptions following the International Commission of Zoological Nomenclature, an organization that sets forth the rules for establishing and recognizing taxonomic names.

In addition to their research value, the fish illustrations have considerable historic and artistic merit representing a wide array of techniques and styles used over the past 200 years. At least 150 artists are represented in this collection.

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Introduction

The first author's interest in Kako Morita emanated from discussions with Victor G. Springer (Curator Emeritus, Division of Fishes, b. 2

ABSTRACT—Kako Morita, a Japanese illustrator and artist, illustrated natural history specimens for a wide range of American biologists in the early 20th century, most notably fishes for David Starr Jordan, with many appearing in U.S. Bureau of Fisheries publications. Although biographical information is incomplete, significant portions of Morita's travels and his contacts with different organizations and biologists in the United States are reconstructed. During his first visit to the United States in 1902–03 he was employed as an assistant artist at Stanford University in California where Jordan was president. Morita then briefly returned to Japan only to come back to the United States and spend 1904–05 in Minnesota where he illustrated birds and possibly fishes for the Geological and Natural History Survey of Minnesota. His residence in Minnesota was interrupted by a brief stay in Chicago in late 1905 where he taught art. In early 1906, Morita was in Milwaukee, Wisc., but there is no information on what he did there. His trail picks up again in early 1908 when, under the direction of the ichthyologist Bashford Dean, he painted several fish-related watercolors for the American Museum of Natural History. Also in 1908, Morita painted mammals for the U.S. Bureau of Biological Survey based in Washington, D.C., and drew birds for the spouse of one of the Survey's employees. More significantly, Morita began working with various scientists at different laboratories that comprise the Carnegie Institution of Washington. These included Charles B. Davenport, director of the Station for Experimental Evolution in Cold Spring Harbor, N.Y.; David T. MacDougal, director of the Desert Laboratory in Tucson, Ariz.; and Alfred G. Mayer (later Mayor), director of the Marine Biological Laboratory in the Dry Tortugas, Fla. Morita returned to Japan in 1912, and there is evidence he came back to the United States in 1913 and 1918. The former date appears to be about when Morita illustrated a monograph on the fishes of Peru by Barton W. Evermann and Lewis Radcliffe, the former a protégé and collaborator of Jordan. Morita's activities after 1918 are not known except for an incident in 1930 when he attempted to enter the United States at the Port of Seattle, Wash., but was debarred and sent back to Japan. This clearly bothered him, and he stated as much in print. Although Morita travelled widely in the United States and worked with many organizations and scientists, Jordan was the one constant in his American experience providing him with introductions and friendship as Morita clearly struggled to survive as a natural history illustrator.

ABSTRACT—in Japanese

日本人の間でも、森田華香という画家はあまり知られていない。我々がこの論文をまとめるにあたって調査した限りでは森田が生まれたのは明治初期の 1875 年か 1877 年という記録(本稿の脚注 3 参照)は残っているが、没年は明確にはわかっていない。また彼がどういう家族環境で生まれ、どうしてアメリカに渡って自然史画家として活躍したのか、18 歳で結婚したことは 1930 年の渡米記録(本稿の脚注 3 参照)に記載されているが、彼が子孫を残したことはわかっていない。また確認できる肖像画や写真も見つかってはいない。因みに、森田華香をインターネットで調べると、森田とほぼ同時期に活躍していた日本画家の“都路華香“と混同された情報がよく見受けられ、その為に、森田と都路の生没年が（1870-1931）となって情報が拡散されている場合が多いことをここに書き留めておきたい。

我々が森田について調査を始めたきっかけは、米国立自然史博物館の魚類及び植物部門の標本庫に収蔵された森田の数々の原図を見つけたことに他ならない。調査を進める中で、アメリカ合衆国カリフォルニア州にあるスタンフォード大学に保管されていた、森田がデイヴィッド・スター・ジョーダン博士(本稿の脚注 2 参照)に対する直筆（計 19 通）の手紙を発見したことにより、更に彼の詳細な足跡や手紙の内容から、森田が当時の自然史系の研究者と交流し、その画家としての才能を認められていたという事実がいくつかわかってきた。この論文では森田のアメリカでの功績に焦点を置いており、彼の日本での活躍については特に触れてはいないことをご了承いただきたい。

森田がアメリカの何処でどの研究者とどのような仕事をしていたかの詳細及び位置関係を示した図など、本稿をご覧いただければ、より具体的に当時の様子が思い描けるかもしれない。

森田華香は 100 年以上も前のアメリカで、日本人の画家として約 30 年もの間、自然史画家として様々な研究者と関わり、アメリカを転々とし、その間の住居環境や日米間の渡航費などどのように工面していたのか、わかっていないことはまだまだ沢山ある。前記した通り、18 歳（1893 年頃）で結婚し、25-6 歳(1901 年頃)からカリフォルニアにあるスタンフォード大学で魚類の絵を多く描き、それらの殆どは当時出版された魚類学の論文で頻繁に使われている。その後一旦日本に帰国するが、その約一年後にはミネソタ大学での仕事のために再度渡米している。その際には妻も一緒に渡航していたのか、それとも絵を描くことで得た賃金を日本に送金していたのだろうか？　その後 1930 年まで、少なくとも 4 回程渡米を繰り返している。最後のアメリカ行きとなった 1930 年には、シアトルで入国拒否されたことに対して憤りを表した記事が当時の朝日新聞(1930 年・昭和 5 年 4 月 19 日掲載)で紹介されている。その後の消息は、我々が調査した中ではわかっていない。

前記した通り、この論文では森田がアメリカに行き来していた期間に焦点を置いており、我々としてはこれが多くの日本の読者に届き、もし森田に子孫があり、彼らの目に届いたら、森田の人生について更なる調査が進むことを願っている。

June 1928, d. 18 Sept. 2022). Springer was hired in 1963 as an assistant curator in the Division of Fishes, NMNH, Smithsonian Institution. Soon after he came to the Division of Fishes, he decided to explore the contents of several filing cabinets in which he found miscellaneous correspondence, manuscripts, and illustrations of fishes and other organisms. Among the miscellany, he was particularly intrigued by a drawing (Fig. 3) that features a chubby middle-aged Asian male with huge earlobes, dressed in a noble kimono robe.

This kimono-clad man is cradling a large fish[1] in his right arm and has a fishing pole over his left shoulder. It is a well-known figure in Japan, so when Springer showed this drawing to AN, a colleague native to Japan, she was immediately able to identify it as an image of Ebisu, god of fishermen and luck, one of the seven gods of fortune. On closer examination, Springer discovered that handwriting on the reverse side of the drawing reads, in part, “Ebisu, the fish god. (This is Kako Morita’s original sketch. It was copied to my ‘Guide to the study of fishes.’ DSJ.” The initials DSJ are those of David Starr Jordan (Fig. 4),[2] a well-connected and prominent American ichthyologist active in the late 19th and early 20th centuries, who also was fascinated by Japan and the Japanese.

This drawing of Ebisu was Springer’s introduction to Kako Morita, the scientific illustrator. Springer soon became interested in his art and life, and by 1990 he began to investigate both further. In 2010 and independent of Springer, LJD became curious about the artists who were credited with illustrations used in “The Cactaceae” (Britton and Rose, 1919–23; most of the original artwork for this four-volume monograph belongs to the Department of Botany, NMNH). Morita, who is otherwise essentially unknown as a botanical illustrator, was credited with about a dozen of the drawings published in this monograph. Consequently, LJD also began to investigate Morita’s art and life. Our purpose here is to present what we have learned about this Japanese illustrator of fishes, cacti, and other natural history objects, and his efforts to survive as a scientific illustrator in early 20th century America.

During our research, we learned that the Stanford University Libraries possess 19 letters from Morita to Jordan dated from 1902 to 1912. This discovery significantly revealed not only Morita’s footprints (Fig. 5) but also his strong relationship with Jordan and how he survived as an itinerant scientific illustrator with Jordan’s support in the early 1900’s in both the United States

[1]Ebisu’s fish, a red sea bream or tai in Japanese, is *Pagrus major* (Temminck and Schlegel, 1843).

[2]It seems unnecessary to introduce David Starr Jordan (1851–1931) to readers of the *Marine Fisheries Review*. He was an accomplished ichthyologist, university administrator, and public lecturer. Born and raised in New York, he spent the early part of his academic career in the Midwest before becoming the first president of Stanford University, Stanford, Calif., in 1891. He was a prolific writer and popularizer of science. He also was an anti-war activist and became head of the World Peace Organization in 1909, but his opposition to war was based on the flawed pseudoscientific field of eugenics (Geiger, 2000).

and Japan. Unfortunately, we could not find any correspondence from Jordan to Morita, but Morita's letters show evidence of how Jordan responded.

Kako Morita, Artist and Illustrator

Kako Morita, artist and illustrator, is little-known in his native Japan and in the United States where he intermittently spent many years. Basic biographical details are lacking. His name may have been a pseudonym, but it was the name he used while entering and while active in the United States. We do not know the exact date and place of his birth, the names of his parents, siblings, or children, or even if he had children, and we know very little about his academic background. Descriptions of his personality elude us.

Morita was born in Tokyo ca. 1875–1877[3] during the Meiji period. He graduated from the Imperial University of Tokyo (Anonymous, 1903a, b; 1904c) and claimed membership in the "Japan Fine Art Society and the Drawing Society."[4] He purportedly came from a "family of rank" (Anonymous, 1904c). We know he married at the age of 18 and that his wife's name was Mineko. He stood 5 feet 1 inch tall (155 cm) and according to a United States immigration officer, he had a dark complexion, black hair, and brown eyes.[5] This is the only information we have of Morita's appearance. We do not know when or where he died. We lose track of his activities in mid-April 1930,[6,7] but that date tells us he was alive after Hirohito became emperor of Japan and after the Great Depression began in the United States. Given his age, it is possible that Morita lived during or even through World War II.

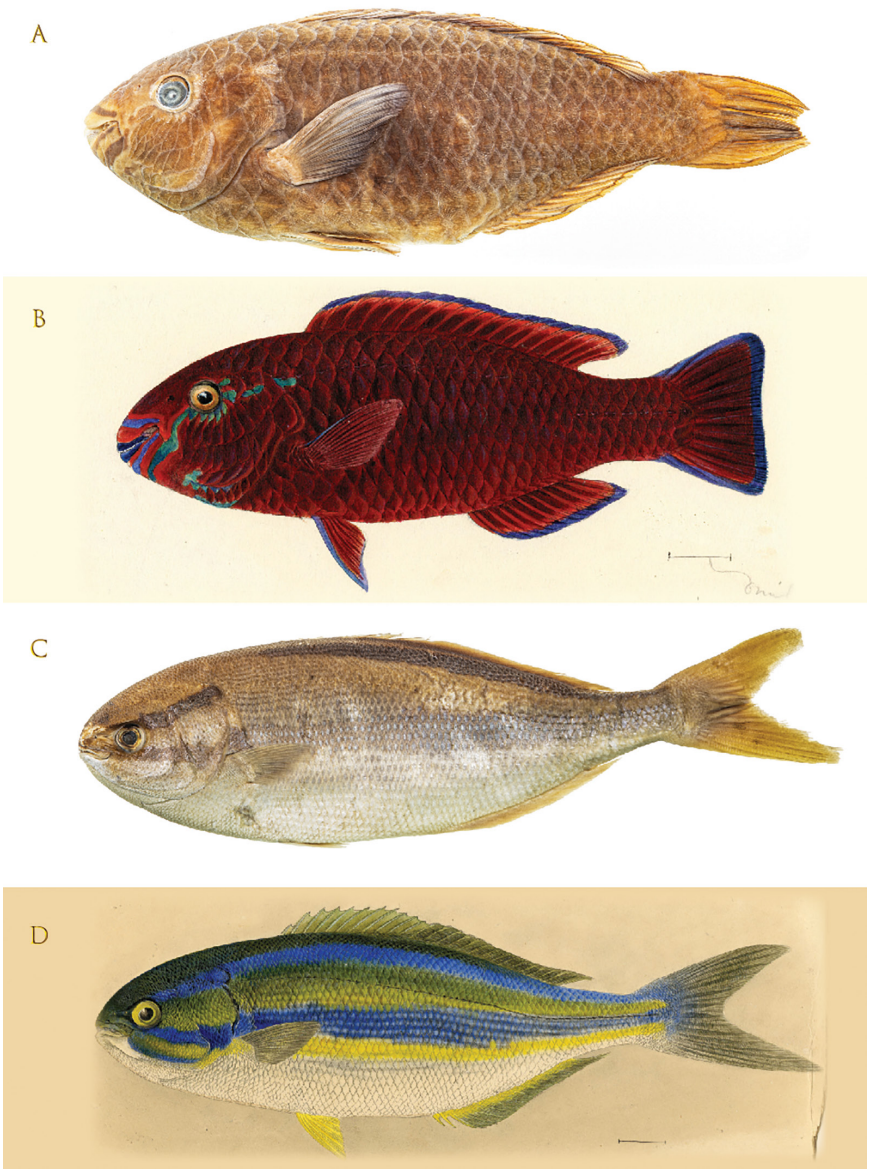


Figure 1.—Type specimens and the illustrations 1: A, USNM 50664 *Sectator azureus* TL355mm; B, FIN09473 *Sectator azureus*; C, USNM 51747 *Callyodon maoricus* TL252mm; D, FIN05960 *Callyodon maoricus*. A and C photos by S. Raredon (NMNH); B and D illustrations by K. Morita.

David Starr Jordan, ichthyologist and the first president of Stanford University, was the one constant in Morita's American experience. Morita began his career as a scientific illustrator in the United States when he was recruited by Jordan to depict marine

[3]A passenger manifest dated 24 February 1930 recorded Morita as being "54 years, 2 months" (see Ancestry Library Edition: National Archives and Records Administration; Washington, D.C.; *Passenger and Crew Lists of Vessels Arriving at Seattle, Washington*; NAI Number: *4449160*; Record Group Title: *Records of the Immigration and Naturalization Service, 1787–2004*; Record Group Number: *85*; Series Number: *M1383*; Roll Number: *156*). This suggests that he was born either in late 1875 or early 1876. However, the Minnesota state census of 1905 (https://www.mnhs.org/people/statecensus/3616951) states that Morita was 28 years of age, which indicates he may have been born as late as 1877.

[4]This is stated on a calling card for Kako Morita in the David Starr Jordan papers (SC 058, Series 1A), The Department of Special Collections and University Archives, Stanford University Libraries, Stanford, Calif., U.S. (hereafter Stanford Archives).

[5]The description is from a passenger manifest dated 24 February 1930 (see footnote 3).

[6]*The Ashai Newspaper* (Tokyo), 19 Apr. 1930 (https://database.asahi.com/index.shtml).

[7]One of us (AN) contacted a municipal office in Bunkyo Ward, Tokyo, Japan, but learned that there is a strict rule throughout Japan that personal information can only be released to family, and we have been unable to locate any of Morita's descendants. If he died in the 1930's (or later), his offspring, if he had any, might still be alive.

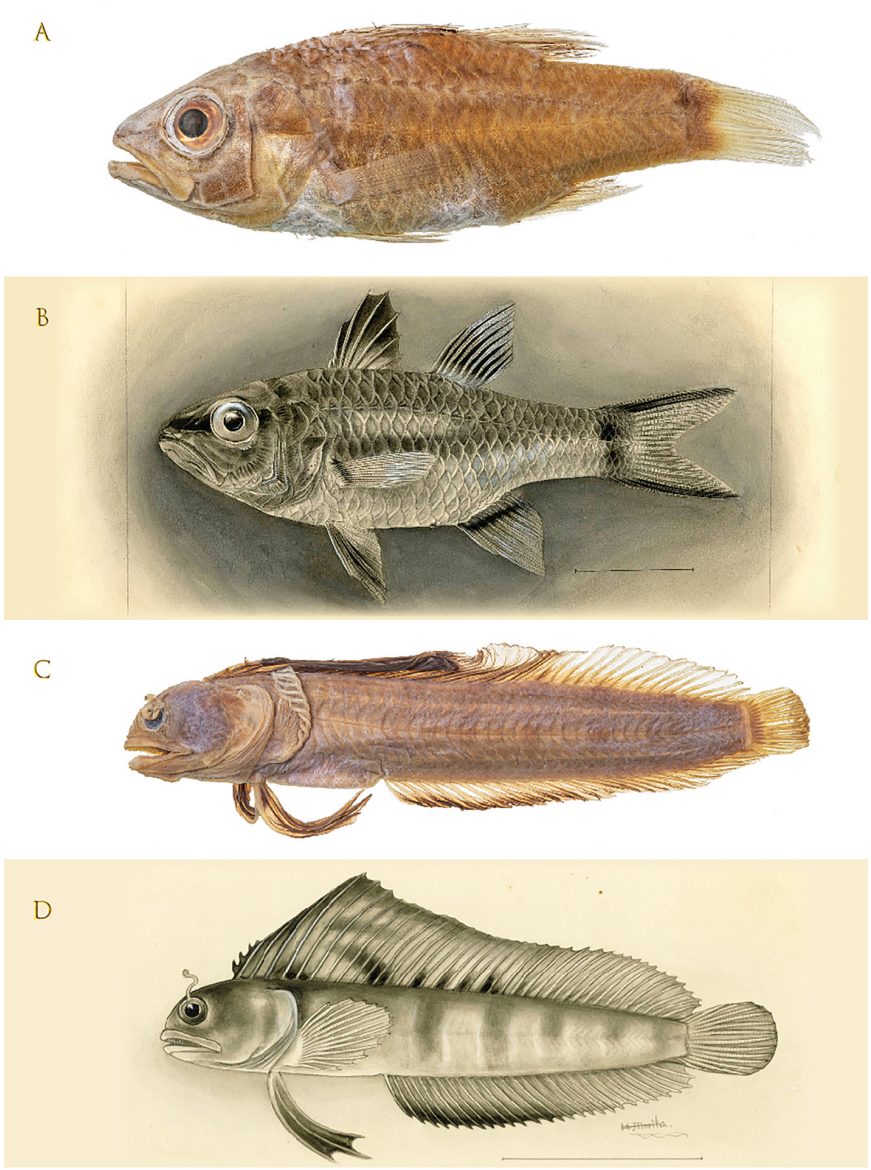


Figure 2.—Type specimens and the illustrations 2: A, USNM 50640 *Apogon snyderi* TL123m; B, FIN08013 *Apogon snyderi* (valid as *Pristapogon kallopterus*); C, USNM 077535 *Emblemaria hudsoni* TL73mm; D, FIN10341 *Emblemaria hudsoni*. A and C photos by S. Raredon (NMNH); B and D illustrations by K. Morita.

fishes. Morita spent an academic year at Stanford and after briefly returning to Japan, he came back to the United States and over time accepted assignments to illustrate birds, mammals, invertebrates, and plants. When pressed for resources he also turned to teaching and commercial art activities such as illustrating books.

In addition to the work he did for Jordan at Stanford, Morita prepared illustrations for scientists who worked for or were affiliated with the American Museum of Natural History, the Bureau of Biological Survey (now part of the U.S. Fish and Wildlife Service), the Bureau of Plant Industry, the Carnegie Institution of Washington (now Carnegie Institution for Science), the Geological and Natural History Survey of Minnesota, and the U.S. Bureau of Fisheries (now NOAA's National Marine Fisheries Service).

His illustrations appeared in the publications of a broad cross-section of American scientists who were active at the beginning of the 20th century. Nonetheless, despite Morita's evident talent and access to resources that allowed him to travel multiple times between Japan and the United States, he seemed to have struggled to succeed as a scientific illustrator and was constantly in search of his next opportunity for work.

Stanford University, Calif., 1902–03

Kako Morita[8] and Sekko Shimada[9] from Japan are each described in the Leland Stanford Junior University Register for 1902–03 (Anonymous, 1903a) as "Assistant Artist" and "Graduate in Art, Imperial University of Tokyo." Subsequently, in the "Stanford Quad" (Anonymous, 1903b), the yearbook of the junior class of the university, the same job and qualifications are repeated for both men, but they also are listed as "faculty."

Morita and Shimada lived in Encina Hall, which was the grandest dormitory at Stanford, and one wonders how these presumably reserved Japanese might have reacted to the riotous student antics that prevailed there (e.g., Bartholomew, 1998). We assume that Morita and Shimada knew each other and as faculty members both would have known Jordan who was president of the university. Their connection to ichthyology, however, is not immediately apparent.

Shortly before either university record was published, Jordan (1902c) had revealed Morita's role as an il-

[8]We cannot eliminate the possibility that "Kako" is a pseudonym. While Morita is a very common surname in Japan, Kako is not a common given name. One of us (AN) searched unsuccessfully for Kako Morita in the list of graduate students from Tokyo Imperial University from 1897 to 1900 (https://dl.ndl.go.jp/pid/813174, https://dl.ndl.go.jp/info:ndljp/pid/ 813175, and https://dl.ndl.go.jp/pid/813176).

[9]Sekko Shimada (ca. 1865–1912) illustrated fishes for Jordan (Springer, 1999) and others. He also contributed illustrations to several books, including "Insect Stories" (Kellogg, 1908), "On the Laws of Japanese Painting" (Bowie, 1911), and "Eric's Book of Beasts" (Jordan, 1912). Unlike Morita, Shimada remained in California and there is no evidence that he returned to Japan, even temporarily. Jordan (1922(2), p. 251) once described Shimada as "a clever Japanese artist."

lustrator of fishes when, in one of his semi-popular fish articles in the *Los Angeles Saturday Post*, he noted that the accompanying black and white illustration had been drawn by "Morita." Our first notice of Shimada in the United States is also in a newspaper article (Partington, 1902), which describes his successful career in Japan as an illustrator for newspapers, but the article does not explain why Shimada was in California nor does it suggest that he too would soon be employed to illustrate fishes.[10]

How did Jordan meet and recruit Morita? We strongly suspect that they met when Jordan first visited Japan during the summer of 1900. Jordan (1922) recounted aspects of this trip in his autobiography "The Days of a Man." Even though both Morita and Shimada are mentioned, Jordan does not provide us with an account detailing how he met either man.[11] He does provide enough clues, however, for us to see ways in which his path and that of Morita might have intersected.

Because Jordan did not speak Japanese, he relied on his many contacts to facilitate his visit. These contacts included Japanese who were Stanford alumni and could act as translators as well as Kakichi Mitsukuri,[12] a Japanese zoologist trained in the United States who Jordan knew from the Fur-Seal Investigation of 1896.[13] In 1900, Mitsukuri was a professor at Tokyo Imperial University. Although we do not know for certain, we believe that Mitsukuri introduced Jordan to art students who were studying or had graduated from his university, especially those who showed talent for illustrating fishes.

Figure 3.—A, Ebisu FIN35733 illustrated by Kako Morita, unknown year drawn; B, note written by D. S. Jordan on the verso of the Ebisu illustration.

In whatever manner this connection may have been made, we believe that Morita accompanied Jordan that summer on a trip to Wakanoura, a bay about 150 km south of Osaka (Jordan, 1922(2):38–42). In terms of fish diversity, this locality was one of the richest Jordan visited on this trip and he selected one of the fish found there as the frontispiece to the second volume of "A Guide to the Study of Fishes" (Jordan, 1905(2); see also Jordan, 1907:677). The plate, which shows col-

[10]The newspaper profile by Partington (1902) indicates Shimada arrived in the United States in late 1901 and was or soon thereafter became acquainted with Henry Pike Bowie (1848–1920). It is possible that Bowie was the link connecting Shimada to Jordan. Bowie, an attorney, was fascinated by Japan and Japanese art. He later cofounded the Japan Society of Northern California with Jordan and published a book on Japanese painting (Bowie, 1911). Partington (1902) does not explain what prompted Shimada to shift from fine art to illustrating fishes. In early 1903, Jordan expressed to Bowie his admiration for Shimada's talent as an illustrator (SC0058, David Starr Jordan Papers, Series 1A, box 37, folder 360).

[11]There is no evidence or suggestion that Jordan met Shimada in Japan. As already noted (footnote 10), we suspect that Shimada was introduced to Jordan in the United States.

[12]Kakichi Mitsukuri (1857–1909), a Japanese zoologist trained in the United States, was appointed Dean of the College of Science of the University of Tokyo in 1901 (Jordan, 1909).

[13]In November 1897, Jordan and Mitsukuri were signatories in Washington, D.C., on the "Convention for the preservation of the fur seal and sea otter in the North Pacific Ocean and Bering Sea," a treaty that was never ratified by the United States Senate (https://iea.uoregon.edu/treaty-text/4690).

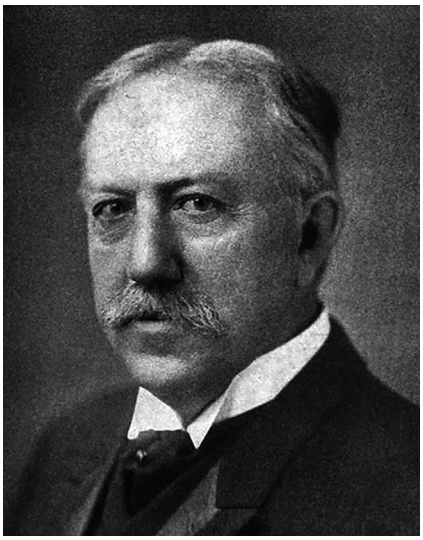


Figure 4.—David Starr Jordan (https://en.wikipedia.org/wiki/David_Starr_Jordan).

or variation in a single species, is captioned "The Oniokose or Demon Stinger, *Inimicus japonicus* (Cuv. and Val.), from Wakanoura Japan. From nature by Kako Morita." Preparing the plate before he came to the United States is the most plausible explanation for how Morita might have worked "from nature."[14]

We do not know the exact date that Morita first arrived in the United States, but he was in California by the end of May 1902.[15] In July, Morita sent George A. Clark, Jordan's secretary, what essentially was an invoice.[16] Morita stated that he had begun work on 27 May, and that he had worked 35 days. If there were concerns about this, Morita suggested that Clark could discuss it with Jordan when he returned to the university, thus indicating that Jordan had left already for his summer of field work in Samoa. An annotation on Morita's invoice indicates that he was paid $2.50 a day for a total of $87.50. More tellingly, the invoice subtly suggests that Morita required little or no supervision from Jordan. Clark or others presumably were tasked with assigning him material to illustrate.

Morita's time in Stanford was extremely productive. The paintings and drawings he executed in that brief period were used to illustrate several publications on Japanese fishes (Jordan, 1903; Jordan and Starks, 1904) that were published in the *Proceedings of the U.S. National Museum*. To pay for these illustrations, Jordan engineered a subvention from the Smithsonian Institution (Langley, 1903), which provided a total of $142.00 for "Morita drawings."[17] Other fish papers with illustrations done while Morita was at Stanford include several that appeared in the *Bulletin of the United States Fish Commission* (Jordan 1904; Snyder, 1904; Jordan and Evermann, 1905). The last of these three articles concerns the Hawaiian Islands and was richly illustrated by multiple artists. Morita contributed many of the color plates and a number of the black and white drawings. Morita also supplied color plates for *The Fishes of Samoa* (Jordan and Seale, 1906). This monograph, a product of Jordan's field work during the first summer that Morita was at Stanford, was published by the United States Bureau of Fisheries.[18] However, Morita's color work was very nearly omitted because of the expense in reproducing it. Jordan, ever well connected, deftly solved this impasse (Jordan, 1922(2), p. 117):

"Our memoir included paintings of fifty of the most brilliant species by Kako Morita, a Japanese artist, a few of them colored after field sketches of my own. But as the printing of these exquisite plates involved large expense, the government committee on publication recommended they be omitted. In this juncture I appealed to [Theodore] Roosevelt on the ground that if the work was worth doing, and the scientific results were important, they should be published in detail. The President took my view of the case, and by his order 'The Fishes of Samoa' appeared complete in 1906."

Morita's work at Stanford also appeared in several books published by Jordan. The color frontispiece used in the second volume of "A Guide to the Study of Fishes" (Jordan, 1905(2)) and reprinted in "Fishes" (Jordan, 1907) has already been noted. The latter book, heavily reliant on the former, is as stated by Jordan in the preface focused more on "nature-lovers and anglers" than the "technical student of ichthyology." Both books included many black and white illustrations, several of them by Morita. The latter book especially seldom gives credit to Morita except indirectly when his signature is included on a drawing. Morita's depiction of Ebisu appears with credit in both books (Jordan, 1905(2): p. 343; 1907, p. 557; 1925, p. 557) and is given a full-page plate in another semi-popular book "Fish Stories Alleged and Experienced" (Holder and Jordan, 1909, plate facing p. 16). Jordan (without Holder) in this last book devoted a chapter, "The oldest of fishermen," to Ebisu and spins an exaggerated story about his first visit to Japan when he visited the fishing town of Onomichi with a red tai under his arm and a basket filled with various marine oddities and "paid more for these odds and ends and little freaks of the sea than real fishes were worth." Jordan's willingness to pay cash for these specimens was a windfall for the villagers who began to refer to him as Ebisu. In his autobiography, the tall tale is toned down considerably and Jordan (1922(2), page 37) omits the apocryphal part about entering the village with a red tai under his arm.

Finally, many years after Morita's time at Stanford, Jordan and his youngest son (Jordan and Jordan, 1925) published a list of the fishes of Hawaii and used figures that had been done by Morita in 1902–1903. Interestingly, Jordan also included a rare compliment

[14]The preface to Jordan (1905) is dated "October, 1904."

[15]As noted already, Shimada arrived in the United States in late 1901 and his arrival probably was independent of that of Morita.

[16]Kako Morita (hereafter KM) to George A. Clark (hereafter GAC), undated but after 30 June 1904: Stanford Archives. George Archibald Clark (1864–1918) was Jordan's secretary at Stanford University from 1901 to 1913.

[17]Six vouchers are listed that total $142.00, which is the equivalent of about $5,070.00 today.

[18]The U. S. Bureau of Fisheries was created in 1903 when the U. S. Fish Commission (organized 1871) became part of the Department of Commerce and Labor.

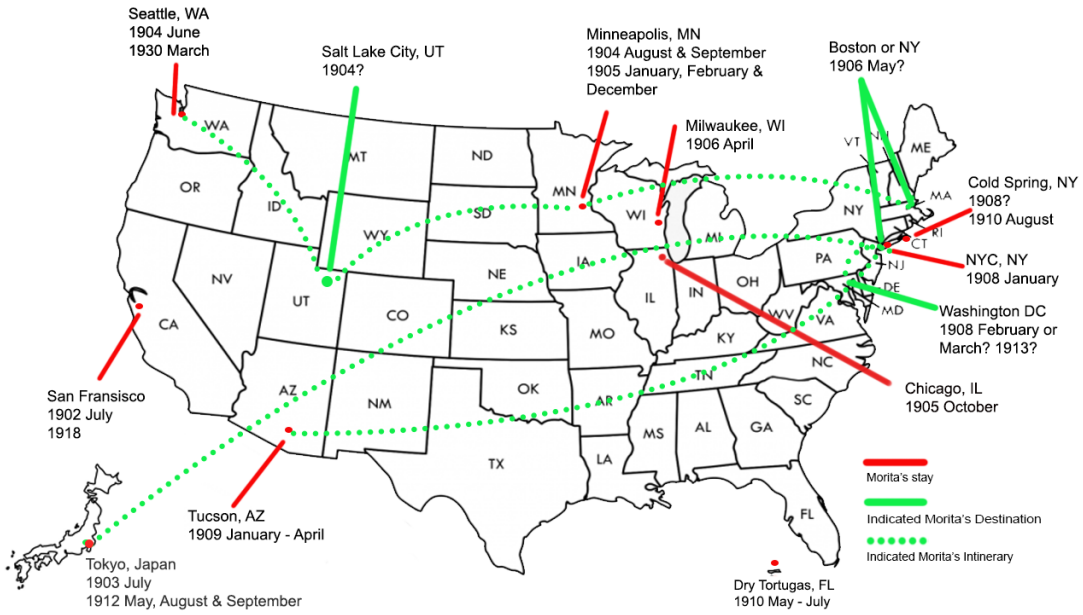


Figure 5.—Morita's footprints from 1902 to 1930.

in this article calling Morita's depiction of one rare species "excellent."

It is unclear why Morita left Stanford. Jordan had not abandoned his fish research although the demands of serving as president of the university must have been enormous and conflicted with taxonomic research. It could be that Jordan ran out of funds to support Morita. Alternatively, it is possible that Morita's first entry into the United States had been granted for a set period, which elapsed, and thus obligated him to return home.

Tokyo, Japan, 1903–04

Morita returned to Japan in July 1903 and remained there until June 1904.[19] On 24 June 1904, he wrote to Jordan from Seattle, the principal port of entry for passenger ships arriving from Japan, and told him that he thought of going to Stanford, but if Jordan was not there he would go to Salt Lake City.[20] Morita also informed Jordan that he had brought with him from Japan prints ("Japanese ancient picture") by Hokusai, Hiroshige, and Utamaro,[21] which he hoped Jordan would help him sell. As an expression of friendship (and perhaps as an inducement to help sell the prints), Morita also said he intended to gift Jordan a picture of Mount Fuji by Hokusai. Additionally, Morita asked Jordan for introductions to his friends, undoubtedly meaning professional colleagues who could provide Morita with work as a scientific illustrator.

We do not know where Morita spent the month of July. However, a very brief note to Jordan dated 7 August 1904[22] stated that he was going to Salt Lake City "next week." The nature and duration of his stay in Utah remain unknown, although if Morita had been in San Francisco, a stop in Salt Lake City while en route to Minneapolis, which was his ultimate destination in August 1904, would have made sense.

Minneapolis, Minn., 1904–06

Morita was in Minneapolis by 16 August 1904.[23] He relocated to this upper midwestern city to paint fishes and birds for Henry F. Nachtrieb (Fig. 6)[24] and Thomas S. Roberts (Fig. 7),[25] re-

[19]Morita was in Japan when the Russo-Japanese War began on 9 February 1904. We assume he was exempt from military service based on his age. Morita left Japan for the United States in early June 1904 because he was "invited to be an art professor at the Stanford Art School [sic]" (*The Asahii Newspaper*, 7 June 1904 [http://www.asahi.com/information/db/forl.html/]; transl. from the Japanese by AN). The Russo-Japanese War did not end until September 1905.

[20]KM to DSJ, 24 June 1904: Stanford Archives. We suspect that Morita dictated this letter because the handwriting does not match that of any of the other Morita letters that we have seen.

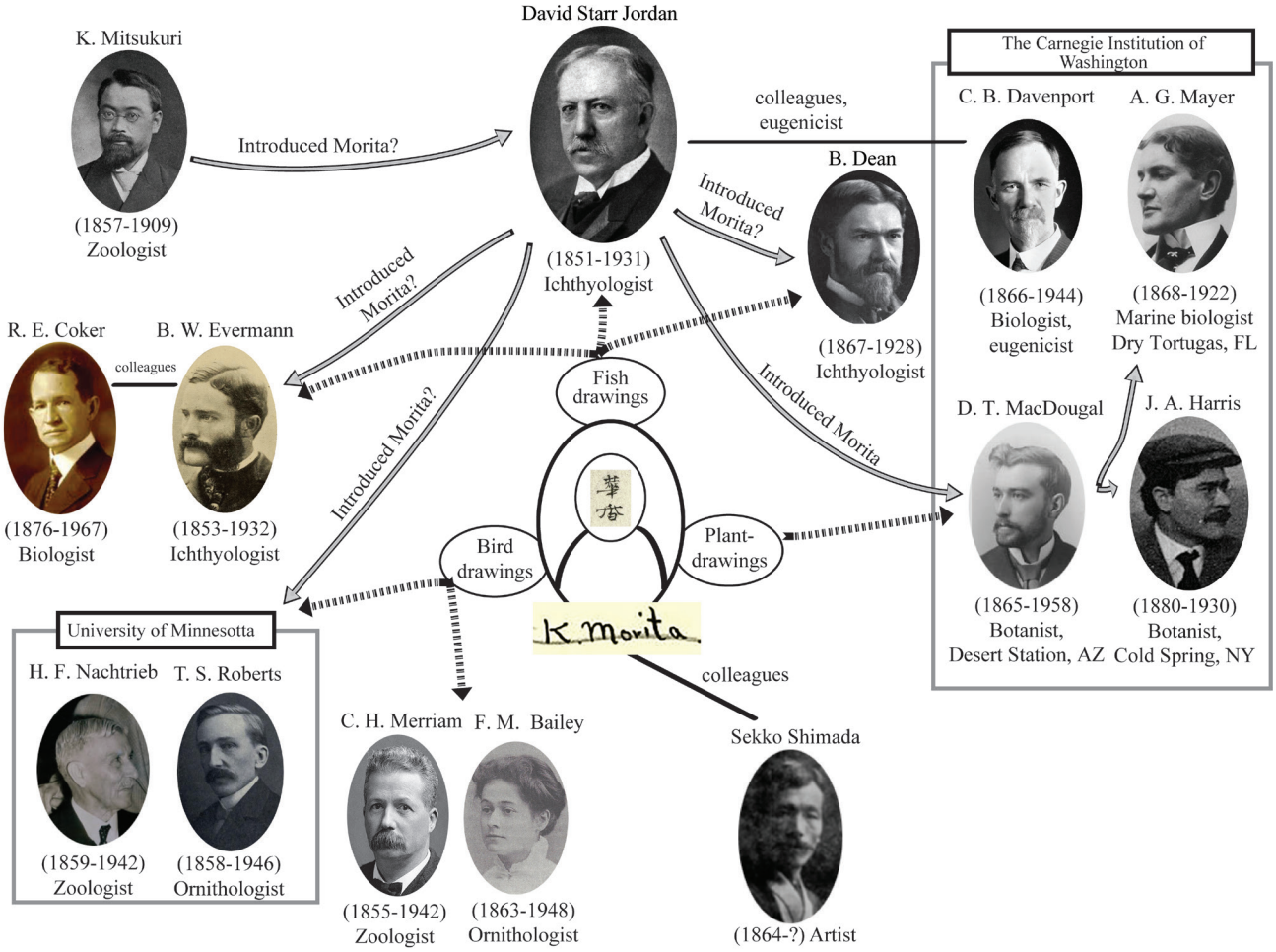
[21]Katsushika Hokusai (1760–1849), Utagawa Hiroshige (1797–1858), and Kitagawa Utamaro (ca. 1753–1806) are well-known Japanese ukiyo-e painters and printmakers of the Edo period.

[22]KM to DSJ, 7 August 1904: Stanford Archives. There is no information on Morita's location when he sent this note.

[23]KM to DSJ, 24 August 1904: Stanford Archives. Morita wrote that he arrived "last Tuesday," which would have been 16 August 1904.

[24]Henry Francis Nachtrieb (1857–1942) was professor of zoology and animal biology at the University of Minnesota from 1887 until his retirement in 1925. He also served as head of the animal biology department and concurrently as state zoologist in the Geological Natural History Survey of Minnesota (Minnich, 1942). The systematic treatment of Minnesota fishes, which he told his dean Colonel William Liggett (see footnote 30) was ready except for the illustrations, was never published. Nachtrieb became involved in the eugenics movement in the 1920's and in 1923 was a founding member of the Minnesota Eugenics Society.

[25]Thomas Sadler Roberts, M.D. (1858–1946) taught pediatrics at the University of Minnesota medical school from 1901 to 1913. He became fascinated with birds and learned how to skin and prepare museum specimens when he was young. Although he published numerous ornithological notes, his medical career and family life appear to have prevented more serious scientific or com-



Morita's connections to individuals related to his illustration work.

spectively. How Morita made this connection is unclear. Fishes as subject matter suggests Jordan recommended him.[26] Birds, however, would be a new challenge for someone whose scientific portfolio to date included only fishes. Nachtrieb was professor and chair of the Department of Animal Biology at the University of Minnesota as well as state zoologist for the Minnesota Geological and Natural History Survey and would have had access to funds to pay for illustrations. Roberts, a practicing physician, was a contributor to ornithological studies for the same Survey.

We do not know when Nachtrieb began to pay Morita for his work. An advertisement that appeared on 30 August in a Minneapolis newspaper (Anonymous, 1904b) announced to Minnesota State Fair visitors that "Mr. Kako Morita, Tokio" would be painting watercolors in the show window of the Bintfliff Manufacturing Company. This curious promotion suggests that Morita was as yet unpaid and in need of cash. Presumably the advantage for the company was that the promotion increased demand for "Paintings, Etchings, Water Colors, Etc.," which it sold framed or unframed. One wonders, however, if Morita took offense at being put on display while he worked.[27]

In September, Morita wrote to Jordan's secretary George Clark to inform him that he had changed his address in Minneapolis.[28] He dutifully reported that Professor Nachtrieb had

prehensive publications. Thus, it was long after he retired from practicing medicine that he published "The Birds of Minnesota" (1932). Also, after retirement he was induced to supervise the transformation of the university's zoological museum into what is now the Bell Museum of Natural History (Breckenridge and Kilgore, 1946).

[26]Jordan gave several lectures to the Minnesota Educational Association in December 1902 (Anonymous, 1902). He and Nachtrieb might have met then, and this would have given Jordan an opportunity to recommend Morita as an artist well qualified to illustrate Minnesota fishes.

[27]Another newspaper advertisement published on 5 November 1904 (Anonymous, 1904d) announced a free Japanese Art Exhibition in the Beard Art Galleries in Minneapolis where "Mr. Kako Morita, of Tokio" would be painting watercolors "each afternoon from two until five o'clock." The Beard Art Galleries was also a stationer and the only place to purchase artist supplies in the city.

[28]KM to GAC, 21 Septemer 1904: Stanford Archives. George Clark was born in Minnesota and graduated from the University of Minnesota (https://oac.cdlib.org/findaid/ark:/13030/kt7n39s4cw/), which opens the possibility that he,

Figure 6.—Henry Nachtrieb (Photo credit: Hennepin County Library).

Figure 7.—Thomas Sadler Roberts (https://en.wikipedia.org/wiki/Thomas_Sadler_Roberts).

given him a letter that Jordan wrote to Morita on 15 September. Morita also mentioned Salt Lake City again, but the syntax in his letter is confusing and it is impossible to understand what he was trying to convey. His message concerned "my pictures," but whether Morita meant the Japanese prints that he was trying to sell or illustrations he himself had made is unclear.

A letter[29] from Nachtrieb to Colonel William Liggett[30] who was the dean of the Department of Agriculture, University of Minnesota, reveals some details concerning Morita's employment. Nachtrieb wrote:

"Mr. Kako Morita has been engaged to paint a few of our important fishes and birds, such as can not [sic] be copied or borrowed from other authors. He is at work in Pillsbury Hall[31] at present and will probably be at work for two months all told at $75.00 per month.[32] There are but three artists[33] in America that can do satisfactory work on fishes from a scientific point of view and we are fortunate in being able to hold Mr. Morita for a time. He is not as rapid as one of the higher priced experts but he is accurate and skillful."

Nachtrieb's letter implied that Morita would be finished with his work in Minneapolis by January 1905. Subsequent correspondence with Jordan, however, suggests that his employment or at least his stay in Minneapolis was extended beyond that date.

Other sources (Anonymous, 1904c) confirm that Morita was painting fishes in October 1904, but he soon turned his attention to birds. Several letters exchanged with Jordan indicate that Morita spent November 1904 through February 1905 painting birds from skins prepared by Roberts.[34] It is curious that Morita did not mention fishes as they were ostensibly the reason why Nachtrieb had retained his services and fishes would have been of greater interest than birds to Jordan. Roberts, however, was steadily working on his magnum opus, the "Birds of Minnesota" (1932). We have no concrete details regarding Morita's activities the rest of the winter or spring; in early summer the Minnesota state census listed Morita as residing in Minneapolis and having resided there for one year.[35]

None of the work that Morita did for Nachtrieb and Roberts while in Minnesota was published before Morita moved on from Minneapolis. This was a recurring pattern that mostly could be attributed to the delay between submitting a manuscript and its publication. Not only did it mean that Morita likely saw few of his efforts in print, but it also meant that unless he kept a portfolio of his work new employers would have to accept Jordan's endorsement of his talents or, after leaving Stanford, the endorsements of Nachtrieb or Roberts. In any case, Morita's work in Minnesota took an unusually long time to be published and most of it never appeared in print. The first of Morita's Minnesota bird illustrations to be published, a painting of an evening grosbeak (*Hesperiphona vespertina*), was the frontispiece of "The Winter Birdlife of Minnesota" (Roberts, 1916). A few other Minnesota bird illustrations appeared in print later (Roberts, 1919, 1932; Breckenridge, 1959), but as far as we know, no illustrations of fishes. The bulk of the extensive collection of water-color paintings of birds that Morita executed for the Zoological Survey was never published.[36] In

and not Jordan, recommended Morita for the work with Nachtrieb and Roberts.

[29]Henry F. Nachtrieb to Colonel William Liggett, 8 October 1904: University of Minnesota Libraries, University Archives (hereafter University of Minnesota Archives), Natural History Survey of Minnesota Correspondence (Box 4, Folder 48).

[30]William Madison Liggett (1846–1909), a Civil War veteran, was Dean of the Department of Agricultural from 1895 to 1907. See University of Minnesota Archives, College of Agriculture records (https://archives.lib.umn.edu/repositories/14/resources/1656).

[31]Pillsbury Hall, constructed in 1889, is a Richardson Romanesque building that dominated the campus when Morita was working at the university.

[32]Approximately equivalent to $2,680.00 today.

[33]One of the three who had talent for illustrating fishes must have been Charles Bradford Hudson (1865–1939) (see Springer and Murphy, 2009). The names of the other two are unknown.

[34]KM to DSJ, 8 January 1905; ibid., 28 February 1905: Stanford Archives.

[35]Morita was recorded in the Minnesota state census on 6 June 1905 (see footnote 3).

[36]Apparently, the expense of reproducing the bird paintings in color was prohibitive (Anonymous, 1920). The Bell Museum of Natural History, Minneapolis, has most (all?) of the paintings and drawings that Morita prepared for Roberts. Several of them have been digitized (see e.g., "Il-

the winter of 1919–20, these paintings were placed on display "in swinging wall frames" in the Zoological Museum of the Survey (Roberts, 1920). It was probably no coincidence that Roberts had just succeeded Nachtrieb as the director of this museum, which was then housed in the Animal Biology Building on the university's campus and not in Pillsbury Hall.

In the last quarter of 1905, Morita was in Chicago. There is evidence that he spent part of his time there teaching. An advertisement (Anonymous, 1905a) in the October 1905 issue of *The Sketch Book*, a monthly magazine published in Chicago, reads: "Kako Morita, Japanese Artist, Instructions Given, Terms Furnished upon Application" and it lists an address in the Fine Arts Building. The same magazine (Anonymous, 1905b) included an advertisement for Japanese prints ("There is no other form of art which gives so much beauty for so little money") that were being sold by the S. Matsumoto Company at the same address as that given by Morita. Clearly, Morita had somehow made a connection with Sogo Matsumoto,[37] publisher and promoter of Japanese prints, who may have induced Morita to try his luck in Chicago. By mid-December 1905, however, Morita was back in Minneapolis.[38]

In early April 1906, Morita was contemplating the end of his Minneapolis sojourn. He informed Jordan he intended to go to Boston or New York by the end of the month or in May.[39] His perpetual request for contacts was included in this letter. At the end of April, Morita was in Milwaukee, Wisc., and he informed Jordan that he had arrived "last month" [sic, last week?] and intended to stay for several months.[40] It is unclear why he chose Milwaukee over Boston or New York, and as always, he asked Jordan for introductions to anyone Jordan might know in this new city. It was not, however, the most propitious time to be asking Jordan for favors because the Great Earthquake that struck San Francisco on 18 April 1906 inflicted extensive damage to Stanford's campus.

New York, N.Y., 1908

We lose Morita's trail in Wisconsin at the end of April 1906 and have no information as to where he resided the rest of that year nor for most of 1907. We know from his correspondence with Jordan that Morita was in New York City in January 1908.[41] We assume that he spent that month and possibly additional time during the winter of 1907–08 at the American Museum of Natural History where under the direction of Bashford Dean (Fig. 8),[42] he executed two paintings representing extinct fishes of the Devonian period (Anonymous, 1909).[43]

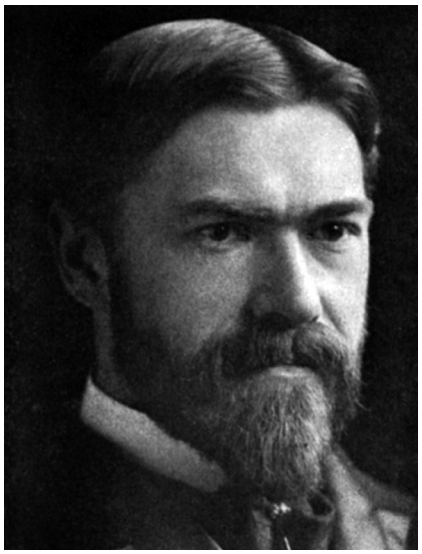


Figure 8.—Bashford Dean (https://en.wikipedia.org/wiki/Bashford_Dean).

Once again we have no direct knowledge as to how Morita was introduced to Dean, but Dean and Jordan were acquainted through their shared interest in fishes.

Also in 1908, Morita published at least two paintings of birds accompanied by short written vignettes or sketches in the popular monthly children's magazine *St. Nicholas*, which was published in New York City. He undoubtedly received modest payments for his efforts. The first painting was a very stylized rendition of a blue jay (*Cyanocitta cristata*) eating the flowers of an apple tree, and Morita wrote that he had been inspired to paint this scene following a walk with his friend "Mr. R----" around Lake Minnetonka near Minneapolis (Morita, 1908a). Describing "Mr. R." as a friend clearly signals that Thomas Roberts and Morita had parted amicably and possibly stayed in touch with each other. The second painting, an illustration of a long-tailed chicken, stated to be a copy of a drawing Morita had made in Japan, was also a stylized depiction of the bird (Morita,

lustration of a passenger pigeon made by Kako Morita," http://purl.umn.edu/179640).

[37]The S. Matsumoto Company undoubtedly was one of the business enterprises of Sogo Matsumoto (fl. 1897–1948) who among other things had a mail-order business based in Nagoya, Japan, that published reproductions of traditional Japanese prints (see http://easternimp.blogspot.com/2018/03/japan-comes-to-indiana-wilhelmina.html). Morita could have met Matsumoto in Japan or in Minnesota where Matsumoto had connections to Minneapolis, visiting several times (Anonymous, 1904a) to sell his prints to residents captivated by "japonisme" (Anderson, 1994:133–135).

[38]KM to DSJ, 15 December 1905: Stanford Archives. Morita indicated that he had sent Jordan prints "of my design" as a gift.

[39]KM to DSJ, 5 April 1906: Stanford Archives.

[40]KM to DSJ, 23 April 1906: Stanford Archives.

[41]KM to DSJ, 5 January 1908, and KM to DSJ, 20 January 1908: Stanford Archives.

[42]Bashford Dean (1867–1928), ichthyologist, was from 1907 to 1908 a professor at Columbia University and Curator in the Department of Fishes at the American Museum of Natural History. He later became Curator of Fishes and Reptiles in the newly created Department of Ichthyology and Herpetology. He was also an expert on medieval armor and, concurrent with his role at the American Museum, he was the first head of the Department of Arms and Armor at the Metropolitan Museum of Art, also in New York City (Gregory, 1928; Shor, 2000). It is pure speculation, but we cannot help but imagine Dean interrupting Morita's work on fossil fishes to discuss Japanese arms and armor or even taking him to the Metropolitan Museum to show him the collection, much of which Dean had acquired himself in Japan in the 1890's.

[43]The American Museum of Natural History has two watercolors by Morita: 1) "Reconstruction of prehistoric fish," 76.2 × 63.5 cm (AMNH Art Survey No. 577; Inventory of American Paintings, Control No. 35570024); and 2) "Sharks," 76.2 × 63.5 cm (AMNH Art Survey No. 241; Inventory of American Paintings, Control No. 35570023). The former is dated March 1948 [sic] and the latter simply 1908. The latter also is described by AMNH as an "underwater scene with a group of sharks and several schools of fish."

1908b) but somewhat closer in style to Morita's technical scientific illustrations than his rendition of the blue jay.

There is evidence that while Morita was in New York City, he sought illustration work that was not scientific in nature. He received credit for illustrating a book on dolls (Starr, 1908): "The color reproductions ... were executed by the Japanese artist, Kako Morita." Without doubt this work was commissioned, but where and when Morita found the time to prepare these illustrations is unclear. We suspect it was while he was in New York City and it probably was in the last quarter of 1907.[44] The author of "The Doll Book," Laura B. Starr,[45] was a member of the Pen and Brush Club, a New York City club that restricted its membership to women interested in art and literature, so Morita's contact clearly was not through club membership.

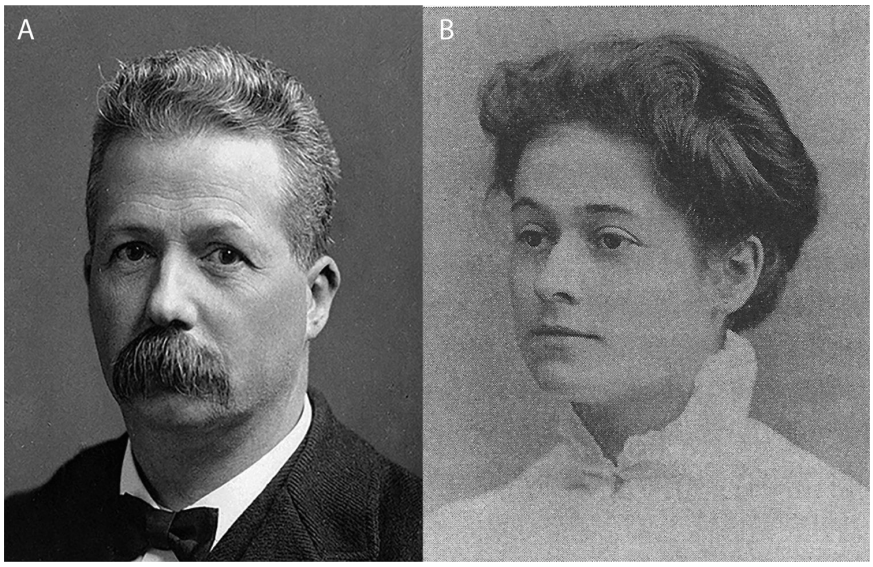


Figure 9.—A, Clinton Hart Merriam (https://en.wikipedia.org/wiki/Clinton_Hart_Merriam); B, Florence Merriam Bailey (https://en.wikipedia.org/wiki/Florence_Merriam_Bailey#/media/File:Florence_Merriam_Bailey_in_1886.jpg).

Washington, D.C., 1908

In early January 1908, Morita wrote Jordan from New York City that he intended to go to Washington, D.C., in either February or March, and he asked Jordan for letters of introduction that might help him find work.[46] A letter sent later in the month confirmed that Jordan had obliged him with two letters.[47] One almost certainly was addressed to C. Hart Merriam (Fig. 9A),[48] the Chief of the United States Bureau of Biological Survey. We know that Morita received a payment[49] from the Survey for artwork (Zappone, 1908, p. 474) and believe that it was for at least two illustrations of rodents. One, a depiction of *Microtus montanus* (Peale), the "Carson meadow mouse" or mountain vole, appeared in an article written by an employee of the Survey (Bailey, 1908).[50] This vole had attracted considerable attention because of an unusual population explosion in 1907–08 that led to significant crop losses in northwestern Nevada.

The other illustration, a depiction of *Onychomys leucogaster* (Wied-Neuwied, 1841), the short-tailed grasshopper mouse, apparently was not published even though the species was discussed in the same article that focused on the vole (Bailey, 1908). For whatever reasons, a photograph of a museum skin was used to illustrate the mouse rather than the drawing by Morita.[51,52]

Sometime before June 1908, Morita also prepared illustrations for the third edition of the "Handbook of Birds of the Western United States" (1908) by Florence Merriam Bailey (Fig. 9B).[53]

[44]Advertisements published in September and November 1907 in a New York City journal devoted to the publishing trade (Anonymous, 1907) announced that a Japanese romance novel, presumably translated into English, is "Illustrated by the famous Japanese artist, Kako Morita." We have been unable to identify the novel or novelist.

[45]Laura B. Starr (1845–1917) was a writer and editor. Shortly after her husband's death in 1890, she started on a 6-year tour of the world visiting Japan among other countries. Despite their shared name (her surname and David Starr Jordan's middle name), no connection to Jordan is known.

[46]KM to DSJ, 5 January 1908: Stanford Archives.

[47]KM to DSJ, 20 January 1908: Stanford Archives.

[48]Clinton Hart Merriam (1855–1942), better known as C. Hart Merriam, was the first and long-time chief of the Survey who as a scientist made important contributions to ornithology, mammalogy, and biogeography (Osgood, 1944; Sterling, 1977, 2016). The Survey's activities shifted in 1907–08 to emphasize economic considerations related to wildlife.

[49]Morita received a $16.00 (about $530.00 today) payment for artwork from the Bureau of Biological Survey during the fiscal year that began 1 July 1907 and ended 30 June 1908.

[50]Vernon Orlando Bailey (1864–1942) was employed by the U.S. Biological Survey (later a Bureau) from 1877 until he retired in 1933. His collecting and research were focused on mammals. He was a protégé of the survey's chief C. Hart Merriam, and in 1899 he married Merriam's younger sister Florence (Kohler, 2008; Schmidly, 2016).

[51]The black and white drawing depicting the mountain vole has been republished several times (Piper, 1909, pl. 34; Young, 1922, p. 374; Bailey, 1936, pl. 34B). As best we can tell, Morita's drawing of *Onychomys leucogaster* (Wied-Neuwied, 1841) (apparently labeled "*Onychomys brevicauda*, Nevada") remains unpublished. Both original drawings are now on deposit in the Ewall Sale Stewart Library, Academy of Natural Sciences of Drexel University, Philadelphia, Pa. (https://ansp.org/research/library/archives/0800-0899/wildlife808/).

[52]Morita also is credited with "tinting" a color illustration of a pheasant, which served as the frontispiece of a monograph by Shaw (1908). Almost certainly there is a Bureau of Biological Survey connection to this illustration because William Thomas Shaw (1873–1948), an Assistant Professor of Zoology and Curator of the Museum at the State College of Washington (now Washington State University) in Pullman, Wash., assisted the Survey's fieldwork in that northwestern state. Morita probably tinted the image in 1907, but certainly he did it before 10 February 1908, which is when Shaw (1908, p. 7) dated the acknowledgments for his monograph.

[53]The preface to the third edition of Bailey's book is dated June 1908. Florence Merriam Bailey (1863–1948) was an accomplished ornithologist and nature writer (Kofalk, 1989). She married Vernon Bailey in December 1899 (see footnote 50), and when the couple were not in the

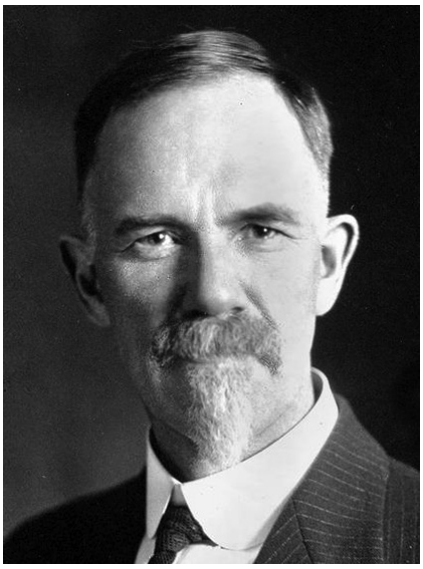


Figure 10.—Charles B. Davenport (https://en.wikipedia.org/wiki/Charles_Davenport).

In the first two editions of her handbook, Bailey (1902, 1904) had used photographs of bird skins, many of which were replaced in the third edition with drawings by Morita.[54] A comparison of the different editions shows this innovation to have been a significant improvement, especially for highlighting diagnostic characters. We assume that Bailey used personal funds to pay Morita, which given the popularity of her handbook would not have been an imposition. As one might surmise from the common surname, Vernon Bailey and Florence Bailey were married and made their home in Washington, D.C. where the Survey also was headquartered.

field they resided in Washington, D.C. (Oehser, 1952). We suspect she learned of Morita's talent from the U.S. Biological Survey, which employed her husband and whose chief was her older brother C. Hart Merriam (see footnote 48).

[54]Many years later, Bailey (1924) published a semi-popular article on the plays and dances of the Taos Pueblo people. One of the illustrations in this article is signed by Morita and it is captioned "Climbing the pole to obtain the prizes at top. Drawn from a photograph." We suspect that Morita drew this while he drew bird skins for her "Handbook of Birds of the Western United States" (Bailey, 1908). Florence and her husband spent many summers in the then Territory of New Mexico (Oehser, 1952), which for Florence, at least, led to the publication of "The Birds of New Mexico" (Bailey, 1928).

Carnegie Institution of Washington, Washington, D.C., 1908–11

Morita next appears as a scientific illustrator working for the Carnegie Institution of Washington.[55] He was not an employee, but from 1908 through 1910 (possibly 1911) he was associated with the institution for extended periods of time and at three of its laboratories. We do not know if his association with the Carnegie was continuous or if he was engaged in other activities during the periods for which we lack information. His Carnegie connection allowed Morita to travel widely, and he spent time working in New York, Arizona, and Florida. Jordan once again appears to have played a key role in opening this valuable connection for Morita.

Cold Spring Harbor, N.Y., 1908

In 1907 or 1908, Morita's aptitude for painting birds came to the attention of Charles B. Davenport (Fig. 10)[56] who was director of the Station for Experimental Evolution (SEE) of the Carnegie Institution at Cold Spring Harbor on the north shore of Long Island. Almost certainly the connection was through Jordan. In 1906, Jordan was involved in forming and funding the Eugenics Committee of the American Breeders' Association, which was established under the direction of Davenport and based at Cold Spring Harbor (Jordan, 1922(2), p. 296–297). Davenport would become a major figure in promoting eugenics in the United States and in 1910 he founded the Eugenics Record Office (ERO) as part of the SEE at Cold Spring Harbor. The questionable premises and research methodologies of the ERO contributed to anti-immigration sentiment and legislation in the United States (Allen, 1986).

It is doubtful that Morita was aware of these connections, although he almost certainly was exposed to xenophobic abuse during his time in the United States. While at Cold Spring Harbor, Morita dutifully prepared colored plates of canaries and poultry for breeding studies published by Davenport (1908, 1909)[57] and a plate of a goose for a paper on the expression of secondary sexual characters in domestic birds published by Goodale (1916).[58] Also while at Cold Spring, Morita prepared black and white line drawings of the flowers of *Digitalis purpurea* L. (the common foxglove) for Shull (1912, pl. 15),[59] who stated that Morita prepared the drawings from life. It is not clear which summer Morita would have done this because Shull simply stated that his study plants bloomed in the experimental garden in 1907, 1909, and 1911.[60]

Tucson, Ariz., 1909

In late January 1909, Morita wrote Jordan that he had arrived in Tucson on New Year's day, that he expected to

[55]The Carnegie Institution of Washington (now Carnegie Institution for Science) was founded in 1902. The Institution soon adopted a model in which support focused on departments of research rather than individuals, and it maintained a few field stations far removed from Washington, D.C. (Trefil and Hazen, 2002). Morita worked for scientists at the Station for Experimental Evolution in Cold Spring Harbor, N.Y.; the Desert Botanical Laboratory in Tucson, Ariz.; and the Marine Biological Laboratory in the Dry Tortugas, Fla.

[56]Charles Benedict Davenport (1866–1944), zoologist, geneticist, and eugenicist, became the first director of the Carnegie Institution of Washington's Station for Experimental Evolution (SEE) in 1904. He undertook breeding experiments with various animals but lacked publishable results until he used canaries and chickens (and later sheep) as his subjects. He then expanded his interest to humans and became one of the leading proponents of eugenics, a pseudo-scientific discipline now discredited (Riddle, 1947; Allen, 2000).

[57]One of the bird plates done by Morita and published by Davenport (1909) is now in the collection of the AMNH (AMNH Art Survey No. 241). It is informally titled "Hybrid Chicken" and described as a "watercolor: Gouache" (15 ¼ × 17 in) on paper.

[58]Hubert Dana Goodale (1879–1968) conducted research at the SEE while a graduate student at Columbia University. After receiving his Ph.D. in 1913, he moved to the Massachusetts Agricultural Experiment Station in Amherst where he specialized in poultry husbandry. Why it took so long for him to publish the research Morita illustrated is unknown.

[59]George Harrison Shull (1874–1954), plant geneticist and breeder, worked for the SEE in Cold Spring Harbor from 1904 to 1915. He is best known for describing heterosis (hybrid vigor) in maize and being a founding editor of the journal *Genetics* (Smocovitis, 2000).

[60]Morita was in New York by May, which would make working for Shull in 1909 feasible (see footnote 59).

stay 3 or 4 months, and that he had arranged to return to New York City by 1 May.[61] Morita also thanked Jordan for having told Daniel T. MacDougal (Fig. 11),[62] director of the Desert Laboratory of the Carnegie Institution of Washington, about Morita's illustration talents when Jordan visited Tucson in November of the previous year. Thus, it appears that Morita's connection to the Desert Laboratory was made courtesy of Jordan and not Davenport or others in Cold Spring Harbor or the Carnegie Institution of Washington.

The Desert Laboratory was relatively new, having been founded in 1903 for research into how plants function in the heat and aridity of deserts (Coville and MacDougal, 1903; Wilder, 1967). MacDougal put Morita to work preparing plates for papers on parasitism in plants, and his research model was cacti (MacDougal and Cannon, 1910; MacDougal, 1911a, b). Morita also contributed a plate for a publication by William A. Cannon,[63] the first resident scientific investigator at the Desert Laboratory, who studied root systems in desert plants (Cannon, 1911). Funding for Morita came from the Bureau of Plant Industry for "Cactus investigations."[64]

In addition to completing plates for MacDougal's research, Morita also painted several species of prickly pear (*Opuntia* Mill.) and related cacti (Fig. 12) when he was in Tucson. Although we once assumed that these were purposely done to illustrate a monograph of the Cactaceae (Britton and Rose, 1919–23), it is not clear that this is why they were painted.[65] Morita's contribution to the botanical monograph was relatively minor compared to the other artists tasked with illustrating cacti, which is curious given that he was the only illustrator working where cacti were abundant (the other illustrators were based in the Bronx or Washington, D.C., and worked from greenhouse-grown material).

When Nathaniel Britton[66] and Joseph Rose[67] began their field, greenhouse, and herbarium studies of the Cactaceae in 1904, their initial focus was diffuse, and a plan for a more complete investigation of the plant family was only proposed by MacDougal in January 1911, several years after Morita's stay in Tucson had ended. Funding from the Carnegie Institution of Washington and work on the cactus project under the new structure began in mid-January 1912 (Britton and Rose, 1919(1): p. 3; Mickulas, 2007, p. 176–205). Thus, it appears that the plates contributed by Morita to "The Cactaceae" (Britton and Rose, 1919–1923) were created originally for some other purpose.

Figure 11.—Daniel T. MacDougal (https://en.wikisource.org/wiki/Author:Daniel_Trembly_MacDougal).

In mid-April 1909, Morita wrote Jordan that "the Carnegie work" was about finished and that he was going back to New York City the first week of May.[68] His opportunities for continued funding through Cold Spring Harbor may have been uncertain because Morita once again expressed an interest in working for Jordan, whether it be rendering scientific illustrations or any other kind of artwork. If Jordan agreed, he would be happy to spend six weeks with him. There is no record of Morita returning to Stanford, and we lose his trail for almost a year.

Dry Tortugas, Fla., 1910

We next find Morita in the Dry Tortugas about 100 km west of Key West, Fla., where the Carnegie Institution maintained a Marine Biology Laboratory on Loggerhead Key.[69] In listing the personnel who spent the 1910

[61]KM to DSJ, 25 January 1909: Stanford Archives.

[62]Daniel Trembly MacDougal (1865–1958), plant physiologist and ecologist, was director of the Desert Botanical Laboratory in Tucson from 1905 to 1928. Earlier he was a lecturer in plant physiology at the University of Minnesota and then Director of Laboratories and ultimately Assistant Director at the New York Botanical Garden in the Bronx. MacDougal and Jordan were on opposite sides of a debate regarding Hugo de Vries's mutation theory (Kingsland, 1991), but this obviously did not prevent them from collaborating in other ways.

[63]William Austin Cannon (1870–1958), plant physiologist, was employed as an assistant to Daniel T. MacDougal at the New York Botanical Garden when MacDougal and Frederick V. Colville selected him in 1903 to be the first resident investigator at the Desert Laboratory in Tucson (Bowers, 1990).

[64]For the fiscal year ending 30 June 1910, Morita received two months' salary ($166.00 total) plus travel and field expenses ($75.55) (Zappone, 1911), which are equivalent to about $5,500.00 and $2,500.00 today, respectively.

[65]The original artwork for Britton and Rose (1919–1923) is in the collection of the Department of Botany, NMNH. The collection includes 49 cactus plates (or parts thereof) by Morita, all of which are watercolors except for two salt prints (https://collections.nmnh.si.edu/search/botany/?ti=7).

[66]Nathaniel Lord Britton (1859–1934) was a founder and first director of the New York Botanical Garden in the Bronx. The co-authored, four-volume monograph of the Cactaceae was a major contribution to plant taxonomy made even more impressive by the breadth of his other research and administrative responsibilities (Merrill, 1938; Mickulas, 2007).

[67]Joseph Nelson Rose (1862–1928) was first employed as an assistant botanist for the U.S. Department of Agriculture in 1888 but was transferred to the Smithsonian Institution in 1896 when the U.S. National Herbarium was reorganized. While collaborating with Britton on the Cactaceae monograph, Rose took unpaid leave from the Smithsonian from 1912 to 1923 to become a Research Associate of the Carnegie Institution of Washington (Cowan and Stafleu, 1981).

[68]KM to DSJ, 16 April 1909: Stanford Archives. The syntax in the letter is awkward and disjointed but this seems to be the intent of Morita's message.

[69]The Marine Biology Laboratory on Loggerhead Key in Florida first welcomed researchers in 1905. This remote research station in the Dry Tortugas played an important role in marine research until economic and social considerations led to its closure in 1939 (Colin, 1980).

season at the laboratory, laboratory director Alfred G. Mayer (later Mayor; Fig. 13)[70] listed "Mr. K. Morita of Japan, artist for the laboratory" (Mayer, 1911). The season for the laboratory was May through July, a narrow period when the field station operated each year.[71] In addition to naming the laboratory's artist, Mayer (1911) also enumerated twelve investigators residing at the station during the 1910 season. Morita completed illustrations for at least four of them.

The investigators who later published artwork Morita prepared in the Dry Tortugas included J. F. McClendon[72] of the Weill Medical College of Cornell University who studied the physiology of echinoderm eggs (McClendon, 1911); David H. Tennent[73] of Bryn Mawr College who was interested in control of dominance in hybrid echinoderms (Tennent, 1911); A. L. Treadwell[74] of Vassar College who focused on marine annelids (Treadwell, 1921); and John B. Watson[75] of Johns Hopkins University who continued "his studies of noddies and sooty terns on Bird Key, Tortugas" and ultimately published on the homing behavior of the latter species, *Onychoprion fuscatus* (Watson and Lashley, 1915). Mayer (1911) indicated that the 1910 season ended early because of the medical evacuation of one person. Morita was back in Cold

Figure 12.—Cactaceae illustrated by Morita: A, *Cylindropuntia spinosior* (Engelm.) F. M. Kunth (see Britton and Rose (1919), The Cactaceae vol. 1: pl. 10, fig. 2); B, *Opuntia azurea* Rose (evidently not published); C, *Opuntia engelmannii* Salm-Dyck ex Engelm. var. *engelmannii* (an interesting example of Morita using watercolor over a photograph, the image evidently not published); D, *Cylindropuntia versicolor* (Engelm. ex J. M. Coulter) F. M. Kunth (see Britton and Rose (1919), The Cactaceae vol. 1: pl. 9, fig. 3). All courtesy of the U.S. National Herbarium, Department of Botany, NMNH, Smithsonian Institution, Washington, D.C.

[70]Alfred Goldsborough Mayer (later Mayor) (1868–1922) was the first director of the Carnegie Institution of Washington's marine laboratory in the Dry Tortugas. He assumed the position in the summer of 1904 and held it until his death. The laboratory's field season, constrained by hurricanes, was limited to 3 months, and in the off-season Mayer resided in Princeton, N.J., where he had an adjunct university appointment. His own research focused on medusae (Davenport, 1926). During WWI he changed his surname from "Mayer" to "Mayor" to distance himself from his Germanic ancestry (Stephens, 1997).

[71]A plate in Watson and Lashley (1915, pl. 2) titled "A view of Bird Key before the hurricane of 1910 destroyed the bay cedar bushes" is dated June 1910 by Morita, which confirms that he was in the Dry Tortugas for that month, at least. Given the constraints of access it is reasonable to assume that Morita was there throughout the entire 1910 field season.

[72]In 1910, Jesse Francis McClendon (1880–1976) was an Instructor in Histology and Embryology at the Cornell University Medical College in New York City. In 1914, he moved to the University of Minnesota where he spent the remainder of his career. He is best known for the first in situ pH measurement of the human stomach (https://archives.lib.umn.edu/repositories/14/resources/1249).

[73]In 1910, David Hilt Tennent (1873–1941) was an instructor in Biology at Bryn Mawr College, Bryn Mawr, Pa., where he spent 34 years teaching and eventually attaining the rank of full professor. After the death of Alfred Mayor in 1922, Tennent also was "Executive Officer" of the marine laboratory in the Tortugas until it closed in 1939. His own research focused on echinoderm development (Gardiner, 1951).

[74]In 1910, Aaron Louis Treadwell (1866–1947) was a professor of Biology and curator of the Museum of Natural History at Vassar College in Poughkeepsie, New York. He published principally on the systematics of polychaetes (http://vcencyclopedia.vassar.edu/faculty/prominent-faculty/aaron-treadwell.html).

[75]In 1910, John Broadus Watson (1878–1958) was a professor and director of the psychological laboratory at Johns Hopkins University, Baltimore, Md. His early research involved studies of animal behavior, including that of terns, which is what brought him to the marine laboratory in the Dry Tortugas (Harris, 2000).

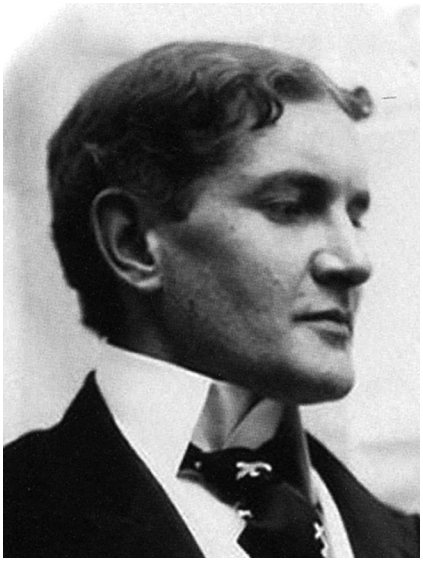


Figure 13.—Alfred G. Mayer (Stephens, 2005).

Spring Harbor on or before 30 August 1910.[76]

Cold Spring Harbor, N.Y., 1910

We know that Morita was in Cold Spring Harbor in August and September 1910, at least. He painted and sketched plants for J. Arthur Harris (Fig. 14)[77] who was studying teratology and inheritance in *Passiflora* L. and engaged in other crossing experiments with common beans. Apparently, these illustrations were never published. In 1924, when Harris became the head of the Botany Department at the University of Minnesota, he brought these watercolors and sketches with him, and after his unexpected death in 1930 they were deposited in the departmental archives before being transferred to the university archives without documentation concerning their provenance.[78] Some of this material is dated August or September 1910, but several of the sketches of *P. gracilis* J. Jacq. ex Link, an annual species, are labeled October 1911, suggesting that Morita was still in New York in late 1911.

Morita received additional salary[79] for "cactus investigations" from the Bureau of Plant Industry during the fiscal year that ran from 1 July 1910 to 30 June 1911 (Zappone, 1912, p. 226, 315). Certainly, this money was for work connected to the Desert Laboratory and not the SEE, but we have no information as to when or where Morita was located when he did this work. There is nothing to indicate that Morita returned to Tucson. It is possible that the illustrations for Desert Laboratory researchers could have been done offsite: several of the cactus plates rendered by Morita were done from photographs rather than from life (see e.g., MacDougal, 1911b, pl. 22–24).

Two other cryptic records indicate that Morita continued to be associated with Cold Spring Harbor in 1911 or even 1912, but neither one provides exact dates. Morita is included in a "List of advisors, collaborators, grantees, and assistants in research ... and all others connected to the Carnegie Institution of Washington from its organization to November 1911" (Anonymous, 1912), which possibly only reflects his earlier association with Cold Spring Harbor, the Desert Laboratory, and the Marine Biological Laboratory. Likewise, Davenport (1912) listed him as a part time artist in a list of "Persons engaged in various activities, December 15, 1912 ...." Morita's presence in New York in mid-December 1912, however, conflicts with other evidence regarding his activities.

Figure 14.—J. Arthur Harris (https://www.findagrave.com/memorial/110025521/james-arthur-harris).

Tokyo, Japan, 1912

In May 1912, Morita returned to Japan,[80] and he was in Tokyo in August and September 1912, at least. He maintained contact with Jordan, and in one letter[81] mentioned that Dr. Evermann had informed him that Jordan would have some drawing work for him. Morita also told Jordan that he was going to New York at the "end of this year" (i.e., 1912) and wished also to visit Stanford for several months for

[76]KM to DSJ, 30 August 1910: Stanford Archives. Morita wrote Jordan to let him know that a childhood friend from the same clan [sic] and currently employed by the Japanese imperial government as a "counselor of the Department State," Mr. G. Yoshimura, wished to call on Jordan when he passed through San Francisco on his return to Japan. We have been unable to identify Yoshimura.

[77]James Arthur Harris (1880–1930), botanist and biometrician, was a botanical investigator with the SEE in Cold Spring Harbor from 1907 until 1924 when he became professor of Botany and head of the Department of Botany at the University of Minnesota. While employed by the Carnegie Institution of Washington he engaged in numerous projects, including studies of vegetable teratology (*Passiflora*) and inheritance of quantitative characters in garden beans (*Phaseolus* L.) (Vayena, 2000).

[78]It is ironic that illustrations Morita made in 1911 at Cold Spring Harbor should end up in the Department of Botany at the university Morita had left 5 years earlier. The watercolors and sketches, a number of them signed by Morita, have been digitized (University of Minnesota Archives, located within "Drawings and Watercolors: Bean and mushroom, Morito, Kako, C. W. Redwood, M. C. Davenport"; https://archives.lib.umn.edu/repositories/14/digital_objects/5225). Some are dated but the handwriting is not that of Morita and we assume it is that of Harris. The collection includes watercolors of *Passiflora gracilis* and *Phaseolus vulgaris* L. ("Burpee stringless beans"), as well as black and white drawings of these same species as well as one drawing of the fruit of *Staphylea trifolia* L., the American bladdernut. This last species is found in New York, but it is not native to Long Island. It does occur sporadically in southern Minnesota.

[79]Morita received $106.00 in salary from the USDA, which is equivalent to about $3,510.00 today.

[80]An article in *The Asahi Newspaper* (Tokyo) (https://database.asahi.com/index.shtml) published on 31 May 1912 states that Morita returned from the United States, and we assume that this would have been a week or so before the article appeared.

[81]KM to DSJ, 7 August 1912: Stanford Archives.

his "health." In a subsequent letter[82] he thanked Jordan for sending a letter of introduction to the American ambassador, a favor Morita had solicited, but then indicated that he would be staying in Japan until the end of the next summer (i.e., 1913). There is some corroboratory evidence that Morita visited the United States in 1913 and again in 1918,[83] but neither visit left a clear or conspicuous trail.

Contact between Morita and Jordan lapsed after 29 September 1912, or if it continued the evidence has not surfaced. Jordan made his third and final visit to Japan in 1922 (Jordan and Hubbs, 1925). In the sparse written record of the two months Jordan spent there, we find no mention of Morita who we suspect would have been very happy to see his patron again. In the summer of 1929 Jordan suffered a severe stroke, which effectively ended his ability to correspond with anyone.[84]

Washington, D.C., 1913

Although the evidence is circumstantial, we suspect that the illustrations that Morita prepared for a monograph on the fishes of Peru (Evermann and Radcliffe, 1917) were done during his 1913 visit to the United States. The fact that Morita mentioned Evermann in his August 1912 letter to Jordan cannot be dismissed as mere coincidence. We know that the illustrations for the Peru monograph coauthored by Evermann had to have been done between early 1909 when the collections first arrived in Washington, D.C., to be studied and determined,[85] and 10 November 1915 when the manuscript for the monograph was transmitted to the Public Printer.[86] Morita's other obligations make 1913 a plausible year for him to have participated in this project.

The monograph is based on collections made by Robert E. Coker[87] in Peru, which ultimately were deposited in the United States National Museum (USNM) of the Smithsonian Institution. Coker worked for the Peruvian government from 1906 to 1908 and served as their official representative for the Fourth International Fisheries Congress in Washington during 22–26 September 1908. The specimens were shipped via steamer from Peru to New York City where they arrived in December 1908. Coker then forwarded them by rail to Washington, D.C. on 15 December. By 11 January 1909, the fishes were at the U.S. Bureau of Fisheries where they were studied by Evermann. After he completed his report, Evermann sent the specimens to the USNM about 21 November 1911, with the expectation that the museum or institution would publish his report by the following spring (i.e., 1912). Evermann insisted that the specimens not be accessioned until the report was published. The manuscript, however, was not approved and transmitted to the Public Printer until 10 November 1915.[88]

Evermann and Radcliffe (1917, p. 1) acknowledged the Peruvian government for supporting the illustrations, presumably meaning it provided the funds to pay the illustrators, "Mr. Kako Morita and Miss Violet Dandridge,"[89] rather than providing payment for the reproduction costs of their illustrations. Dandridge's illustration career is tied exclusively to the USNM and there is nothing to suggest that she and Morita worked together or even at the same time. We have no information about how specimens were selected for illustration nor how they were assigned to Morita vs. Dandridge. Evermann (Fig. 15)[90] was director of the California Academy of Sciences when the monograph finally was issued, but he had been at the Bureau of Fisheries in Washington, D.C., until March 1914. His coauthor, Lewis Radcliffe,[91] was an assistant with the Bureau, but he could not have worked on the monograph until 1910 or later because he

[82]KM to DSJ, 29 September 1913: Stanford Archives.

[83]Immigration officer's comments (7 March 1930) on the passenger manifest created 24 February 1930 (see footnote 3). Morita declared that he had previously entered the United States in 1913 and 1918 and visited "S.F." or San Francisco both times. The manifest includes a place for the immigration officer at the port of arrival to record whether the immigrant is visiting a relative or friend. Morita declared that he was visiting a friend, "Dr D S Jordan of Standford [sic] University S F."

[84]See "Guide to the David Starr Jordan Papers SC0058" (https://oac.cdlib.org/findaid/ark:/13030/tf3f59n6bn/entire_text/). Evermann (1931) simply stated that Jordan "became very seriously ill."

[85]Accession number 49549, USNM, Smithsonian Institution (Smithsonian Institution Archives, Record Unit 305, SIA000305_R102_Y1909_A0049549) documents when the fishes and other specimens collected by Robert E. Coker (see footnote 87) in Peru arrived in the United States and then Washington, D.C.; who received these specimens for identification and when; and other details. The fishes were given to Evermann and accession number 59892 (Smithsonian Institution Archives, Record Unit 305, SIA000305_R195_Y1916_A0059892) includes a copy of his report and records not only when he conveyed them to the USNM but also when they were officially added to the museum's collection.

[86]The monograph was issued 1 August 1917. However, an "Advertisement" or statement regarding the monograph's inclusion in the Bulletin series is dated 18 April 1917.

[87]Shortly after receiving his Ph.D. from Johns Hopkins University, Robert Ervin Coker (1876–1967) accepted a position from the government of Peru to develop that country's nitrate industry and marine fisheries. Over the course of 2 years from 1906 to 1908, he helped boost Peru's guano bird population and increased its fertilizer output substantially. After the 1908 Fisheries Congress he remained in the United States, initially joining the U.S. Bureau of Fisheries Biological Laboratory at Fairport, Iowa, and ultimately moving on to a faculty position at the University of North Carolina at Chapel Hill (https://www.ncpedia.org/biography/coker-robert-ervin).

[88]The fishes from Peru were ultimately gifted by the Peruvian government to the USNM on 16 June 1916 (Accession no. 59.892).

[89]Serena Katherine Dandridge ("Violet" Dandridge) (1878–1956), a native of West Virginia, first began to illustrate specimens for researchers in the USNM in 1903. She specialized in marine organisms. Apart from her career as an illustrator, Dandridge was also a committed suffragist (https://siarchives.si.edu/blog/serena-katherine-%E2%80%9Cviolet%E2%80%9D-dandridge-suffragist-and-scientific-illustrator).

[90]Barton Warren Evermann (1853–1932), a protégé and collaborator of Jordan, had been employed by the U.S. Fish Commission (after 1903 Bureau of Fisheries) since 1891. He also served concurrently from 1905 to 1914 as Curator of Fishes at the USNM. Later, in 1914 he left the Bureau of Fisheries (and Smithsonian) to become Director of the California Academy of Sciences where he remained until his death (Hanna, 1932; Jennings, 1997).

[91]Lewis Radcliffe (1880–1950) was interested in ichthyology and malacology. He was assistant naturalist on the 1907–10 *Albatross* Philippines Expedition when Coker's Peruvian fish specimens arrived in the United States. Radcliffe later served as Deputy Commissioner of the United States Bureau of Fisheries and a Director of the Oyster Institute of North America (Anonymous, 1950; Hubbs, 1964).

was a member of the 1907–10 *Albatross* Philippine Expedition. This combination of circumstances narrows the window when work on the monograph could have occurred, and Morita's other activities narrow the window even further leading us to believe that Morita could only have participated between late 1908 and 1913.

San Francisco, Calif., 1918

Morita declared on an immigration form that he had visited "S.F." (San Francisco) in 1918.[92] We have no further information about the purpose or precise dates of this trip.

Seattle, Wash., 1930

The last written records of Morita that we have relate to an aborted attempt to enter the United States before going on to Europe. On 24 February 1930, Morita boarded the SS *President Lincoln* at Yokohama, Japan. The ship arrived 2 weeks later in Seattle on 7 March.[93] Morita evidently hoped to continue to San Francisco but was debarred and prevented from entering the United States. He was detained long enough to be included in the national census, which confirms that he was in detention in Seattle on 1 April.[94] Several days later, on 4 April he was sent back to Japan.[95] Either during his detention or during the return voyage he channeled his anger into an article that was published in *The Asahi Newspaper* in Tokyo on 19 April.[96]

"KAKO MORITA ILLEGALLY REPATRIATED FROM THE UNITED STATES."

"MORITA TALKS FURIOUSLY ABOUT THE TERRIBLE ATTITUDE OF SEATTLE IMMIGRATION OFFICERS."

"I was going to stay in the United States for about six months and [then] go to Europe. I showed my passport and clearly stated my plan, but the immigration officer in Seattle would not allow entry unless I paid $500.[97] I was thrown into a camp with the Chinese stowaway[s]. I had previously been a part-time worker at the Carnegie Institute [sic], taught Japanese art at Stanford University, and had been in the United States for about 10 years. Although I presented all my documents of my work history in the United States, the officers didn't accept any of them. They thought I came to the United States to find a job, so they imprisoned me. It seems that the policy of the United States is to make such doubts to all those who come from Japan."[98,99]

We have no information regarding Morita's activities after he was forced to return to Japan in April 1930. Jordan died the following year on 19 September 1931. We do not know if Morita was ever aware of his patron's passing. In any case, the world, including Japan and the United States, was increasingly unsettled economically and politically as it headed toward the cataclysm that culminated in World War II.

Morita and Jordan

When Morita first met Jordan, he was about 25 years old and Jordan, at 51, was old enough to be his father. Jordan was a well-known ichthyologist and president of Stanford University, while Morita was merely an aspiring young artist from Japan. At that time, age and rank were paramount in Japanese society. Young people were expected to strictly pay great respect to their parents, grandparents, teachers, and supervisors in every manner. Orders or instructions from elders were absolute. This tradition still exists in Japan, although it is somewhat moderated.

Morita came of age in this hierarchical world of the late 1800's, so we are surprised to read his letters to Jordan and see how frank, friendly, and even audacious he was in persistently asking favors of someone his parent's age. Somehow Morita acquired aspects of westernized behavior while living in Japan. Perhaps this can be explained, in part, by the fact that he was fortunate to obtain a higher education.[100] Judging from Morita's letters, his English was passable although he was often apologetic about it. For whatever reason, it appears that Morita was able to maintain a cordial relationship with Jordan that lasted several decades.

Jordan clearly had a fondness for the Japanese, having visited Japan three times. He employed Japanese "house boys" at his California residence (Jordan, 1922(2), p. 10). Japanese students attended Stanford University (Jordan, 1922(2), p. 80–81) and Jordan even brought at least one of these students, Michitaro Sindo,[101]

[92]Information regarding a 1918 visit to San Francisco was gleaned from Morita's 1930 immigration documents, which include a passenger manifest and immigration notes (see footnote 3).

[93]Immigration officer's comments (7 March 1930) on the passenger manifest created 24 February 1930 (see footnotes 3, 83, and 92).

[94]U.S. Census 1930 (Ancestry Library Edition: Year: 1930; Census Place: Seattle, King County, Washington; Page: 11B; Enumeration District: 0127; FHL microfilm: 2342233). Although the census form states that Morita did not speak English, his letters to Jordan are all written in English.

[95]The passenger manifest that was created 24 February 1930 when Morita departed Japan (see footnote 3) is stamped "Debarred" next to his name and an immigration officer annotated this by hand "Deported 4-5-30."

[96]*The Ashai Newspaper* (Tokyo), 19 Apr. 1930 (see footnote 6).

[97] This is equivalent to about $9,400.00 today.

[98]Translated from the Japanese by AN.

[99]Although Japan and the United States were allies during WWI, tensions between the two countries arose in its aftermath especially with respect to Japan's dominance of China. The U.S. Immigration Act of 1924 (The Johnson-Reed Act) prevented immigration from Asia and may have contributed to Morita's hostile reception in Seattle (https://history.state.gov/milestones/1921–1936/immigration-act).

[100]Jordan (1922(2), page 50), commenting on the Japanese caste system, suggested that someone like Morita would have been born to his profession: "At that time – and even now, so far as I know – to become an artist in Japan one had either to be the son of an artist or be adopted as a pupil, for humble genius had practically no chance."

[101]In 1901, Michitaro Sindo (ca. 1887–?) "late of Yamaguchi" was assistant curator of fishes at Stanford (Jordan and Snyder, 1901) and assisted Jordan in his Hawaiian research (Jordan, 1922(2):86–87). Sindo later received credit, but not co-authorship, for several articles published by Jordan (1902a, b). The articles are "By David Starr Jordan (assisted by Michitaro Sindo) ..." while the running heads are "Jordan and Sindo." Sindo accompanied Jordan to Samoa in 1902 (Jordan, 1922(2), p. 98, 1929) and subsequently

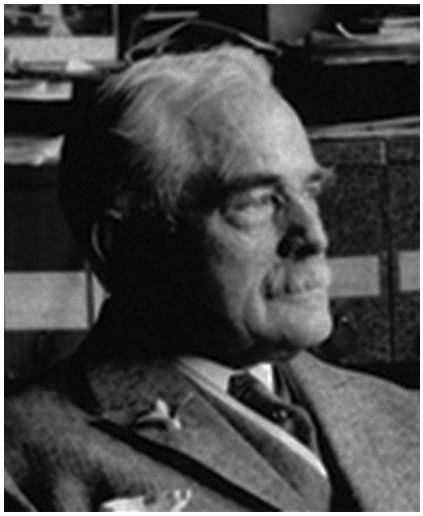


Figure 15.—Barton W. Evermann (https://commons.wikimedia.org/wiki/File:Barton_Warren_Evermann.gif).

into his laboratory. In 1905, Jordan co-founded, with Henry Pike Bowie, the Japan Society of Northern California, which was (and continues to be) devoted to advancing United States-Japan collaboration and understanding.

Despite his fascination with Japan and the Japanese, Jordan was paradoxically a strong believer in and promoter of eugenics. It is difficult to understand how someone with these beliefs could be so attracted to a different culture. It is ironic that Morita, whose talent as an illustrator was utilized by Jordan (and Charles B. Davenport), was probably denied entry into the United States in 1930 because of the xenophobic sentiment the eugenics movement had created. We find it difficult to imagine that Morita had any suspicion that the political and social views of his mentor and employers may have impacted his fate. To the contrary, Morita was aware, if not proud, of having worked for the United States Government.[102]

was described as a Stanford student when he participated in the *Albatross* expedition of 1906 to Japanese waters (Dunn, 1996). Sindo eventually gave up ichthyology, and Jordan (1922(2):385–386) reported that in 1911, at least, he was involved in Japanese emigration to South America.

[102]KM to DSJ, 7 August 1912: Stanford Archives.

Morita as Painter and Artist

While our focus has been on Morita as a scientific illustrator, he also was a painter and artist (Fig. 16). Painting dominated his early career, but by about 1902 he shifted to designing prints and scientific illustration. The earliest prints designed by Morita that can be reliably dated are related to the Russo-Japanese War, which began in February 1904 (Steinberg, 2008). Apart from several war prints (senso-e 戦争絵), Morita's subjects were birds and flowers (kacho-e 花鳥絵), the latter often also featuring insects. He also designed prints of sea- and landscapes. We have no evidence that Morita attempted to establish himself as a designer of prints in the United States, and we believe that his contributions to printmaking were mostly restricted to periods when he resided in Japan. Overall, the chronology of his fine art design activities remains poorly known.

An auction catalog (Anonymous, 1901) provides one of the few clues to Morita's training as an artist. It describes an art sale held in New York City on 9 April 1901, which featured a private collection of 160 Japanese prints by older masters, and through a special arrangement with Okakura Tenshin[103] of the Art Institute of Tokyo, approximately 80 contemporary paintings on silk by "prominent Japanese painters," all of whom were his students. Among the paintings offered for sale were four by "Morita Kako." Their titles were "Morning glory," "Lily," "Iris," and "Ducks." Who purchased these paintings is not recorded.

Several years later, a painting by

[103]Okakura Tenshin (Kakuzō) (1862–1913) is a complicated figure who was at times a government bureaucrat, student of Asian and "Western" ideas, writer in Japanese and English, curator and art historian, and both an ultra-nationalist and internationalist. In 1890, he became President of the Imperial Art School, but in 1898 he resigned and formed a private institution called Nippon Bijutsuin dedicated to preserving old Japanese art forms. He spent 1901 in India, returned to Japan, and in 1904 accepted an appointment at the Museum of Fine Arts in Boston (Korhonen, 2001; Clark, 2012). Morita would have had opportunity to visit Tenshin in Boston, but evidence is lacking.

Figure 16.—Palanquin bearers (untitled). Provided by The Lavenberg Collection of Japanese Prints.

Morita titled "Late Autumn" done in the Japanese style (nihonga 日本画) was awarded honors at "The 4th Exhibition of Jitsu-getsu Association" (The Sun and Moon Association). We do not know the date of the exhibition, but the painting was reproduced in the 20 November 1904 issue of *Bijutsu Gaho* 美術画報, an art magazine, when Morita was in Minneapolis.[104] Apparently, Morita also contributed one or more illustrations to the popular magazine *Fuzoku Gaho* 風俗画報,[105] the first graphic magazine produced in Japan, but we have not traced the issues or dates.

Among the senso-e or war prints

[104]We have not seen the original magazine, only an excerpt (see https://www.tobunken.go.jp/materials/gahou/210521.html).

[105]Reported online by Irwin Lavenberg (see http://www.myjapanesehanga.com/home/artists/morita-kako-active-late-1890s-to-1930s).

made from Morita's artwork is a dramatic triptych of the Battle of Port Arthur, which took place on 8–9 February 1904[106] (Fig. 17). Remarkably the publisher's colophon indicates the image was printed on 10 February and released for sale on 18 February (Paget, 2016). It is highly unlikely that Morita was present during this naval engagement, and it is doubtful that he worked from photographs of the battle, which was scarcely over when the image was first printed. Lack of proximity to the action and exposure times would have made photography impractical.

Moreover, Morita depicted something of an imagined battle. The actual Russian ship in this battle scene sank after striking mines and was not sunk by Japanese torpedo boats. Apparently, publishers had prepared propaganda prints before the first shots in the Russo-Japanese War were fired. According to Paget,[107] "Artists referenced photos when depicting the ships, [and] for the explosions, there were various military exercises and demonstrations that they might have been able to see (as well as prints from the first Sino-Japanese War, 10 years earlier)."

With an audience receptive to stirring nationalistic scenes, one can see the advantage in commissioning artists to create battle scenes ahead of actual engagements so that prints could be released quickly. Another triptych produced by Morita, which further supports the observation that publishers commissioned propaganda prints before actual battles, shows Russian cavalry being repulsed by Japanese soldiers in the Battle of the Yalu River.[108]

Figure 17.—A, Destruction of two Russian battleships (S2003.8.2787); B, The Japanese Russian War No. 2 naval fight before the harbor of Port-Arthur (S2003.8.2788). Provided by the Arthur M. Sackler Gallery, Robert O. Muller Collection.

This was the first major land battle of the war, and it took place from 20 April to 1 May 1904. Amazingly, the triptych was printed in April 1904 before the battle was over.

Morita adhered to the ukiyo-e 浮世絵 style when designing prints of birds and flowers (kacho-e) as well as sea- and landscapes.[109] We have not ascertained the dates of prints that bear his name and cannot fit them into the context of his travels to the United States. The fact that they were printed in Japan leads us to assume that they were made by Morita when he was there. The presence of Morita's name on various prints indicates that he worked with two different publishers. All his war and some of his nature prints were published by Heikichi Matsuki (Daikokuya) or Daikokuya Heikichi Matsuki, a Japanese publishing house founded in 1764. Other prints were published by Buemon Akiyama (Kokkeidō), which operated from the 1880's to the 1920's (Marks, 2010). Akiyama Buemon might also be Morita's connection to the romantic novel that a publisher's advertisement in 1908 said he illustrated because this publisher is known to have issued many romantic novels with illustrations by print designers.

Kako Morita is often confused with

[106]The artist's seal on this triptych as well as that found on a number of ukiyo-e prints is identical to one placed on a letter that Morita sent to Jordan in 1905, which confirms the connection between Kako Morita the designer of prints and Kako Morita the scientific illustrator. See KM to DSJ, 15 December 1905: Stanford Archives.

[107]Rhiannon Paget, The John and Mable Ringling Museum of Art, Sarasota, Fla. 34243 (personal commun., 24 February 2021).

[108]Incorrectly attributed to Kakō Tsuji (see text) by the Ackland Art Museum, Chapel Hill, N.C. (see http://ackland.emuseum.com/objects/26587/the-enemy-attacked-yizhou-but-our-troops-turned-them-back-an?ctx=bf3b1610a67f02c48124590b2a6adca9c375d4f0&idx=22). The Ackland has a second naval triptych, which it attributes to "Norita [sic] Kako" (see http://ackland.emuseum.com/objects/25580/our-fleet-at-chemulpo-harbor-sinks-the-enemy-fleet).

[109]Examples of prints designed by Morita, many misattributed to Kakō Tsuji (see text), are scattered across the web in auction sites and in compilations of ukiyo-e artists (see e.g.: https://ukiyo-e.org/search/?q=Kako%20Morita; http://www.jaodb.com/db/compareitems.asp?varPDindex=15288&varscholar=&varlanguage=E; and http://www.myjapanesehanga.com/home/artists/morita-kako-active-late-1890s-to-1930s).

Kakō Tsuji (都路華香) (ca. 1870–1931),[110] but the latter artist who combined Yōga 洋画 (Western-style of painting) and Nihonga (Japanese-style) did not design prints. The birth and death dates or at least the period when each man flourished are similar, but this is nothing more than coincidence. Both artists used "Kako," spelled with the same kanji characters 華香, but a comparison of their signatures and seals confirms that they are two different artists.[111] More importantly, Kakō Tsuji is not known to have ventured into scientific illustration.

Ebisu, the Fish God

As Jordan (1922(2), p. 17–19, 37) described in his autobiography, he was fascinated during his first trip to Japan by "the patron saint" Ebisu holding a sea bream. We wonder what prompted Jordan to request that Morita illustrate Ebisu, an illustration that Jordan used in three of his publications (Jordan, 1905, 1907; Holder and Jordan, 1909).

Did Ebisu bring Kako Morita luck? The god of fisherman certainly smiled on Morita during his first visit to the United States when Morita was painting fishes for Jordan and his collaborators. The time spent at Stanford University was the most productive of Morita's career as a scientific illustrator. He painted many color plates and executed black and white drawings of fishes, which appeared in monographs, books, and even a newspaper. His renditions demonstrated a high degree of skill.

After Morita left Stanford and began alternating his time between Japan and the United States, he demonstrated a high degree of competence in illustrating other organisms, but he never replicated the productivity demonstrated while at Stanford. Also, despite interacting with a wide range of prominent American scientists, we have no evidence that Morita developed the same rapport with any of them that he established with Jordan.

Although we have mainly focused on Morita's activities in the United States, we hope that what we have discovered will reach a wider audience, including Japanese readers and perhaps even Morita's descendants. Certainly, further research into Japanese sources will round out his activities in Japan as an artist and designer of prints and possibly expand our knowledge of his training and early influences.

Morita's Fish Illustrations

The NMNH is the largest repository of Morita's original fish illustrations. Currently, there are 97 fish paintings and drawings (representing 10 orders, 42 families, 78 genera, and 95 species), both color and black and white, housed in the collection of the Division of Fishes (https://collections.nmnh.si.edu/search/fishes/). Although these illustrations are accessible electronically, we believe it is useful to reproduce them here (Plates I to XVIII; see also Table 1 for List of Illustrations including valid scientific names as of January 2023). Morita's artwork is not only magnificent but also an extremely important contribution to ichthyology.

Acknowledgments

First and foremost, we are indebted to the late Victor G. Springer (Division of Fishes, NMNH) who encouraged us to write-up our investigations into the activities of Kako Morita. Our research, spread out over many years, was aided in Botany (NMNH) by Rachel A. Barclay (Katzenberger Art History Intern) and Rose A. Gulledge, and in Fishes (NMNH) by Sandra Raredon who photographed type specimens; Kasia Ahern, George Tillery, and Yujia Jing who digitized illustrations and made them publicly accessible; and G. David Johnson (NMNH) who read and provided advice as our manuscript took shape. The Department of Special Collections and University Archives, Stanford University Libraries, Stanford, Calif., supplied photocopies of Morita's correspondence with Jordan. Rhiannon Paget, The John and Mable Ringling Museum of Art, Sarasota, Fla., shared information on Russo-Japanese War prints. Kit Brooks and Motoko Shimizu, National Museum of Asian Art (Smithsonian Institution) provided the high-resolution images of Morita's Russo-Japanese War prints reproduced here. Miki Takeuchi, Keio University Mita Campus Media Center, sent AN several newspaper articles from Japan. Irwin Lavenberg, The Lavenberg Collection of Japanese Prints, sent several high-resolution images of prints designed by Morita in his collection, also reproduced here. The Archives and Special Collections, University of Minnesota Libraries, Minneapolis, Minn., and the University of Tokyo Library System, Tokyo, Japan, furnished useful resources about Morita and his contacts. Toshikazu Doi kindly shared his research on Morita. Archivists at the Bancroft Library, University of California, Berkeley, checked the Florence Merriam Bailey Papers for information on Morita. Likewise, archivists at the University Archives, Special Collections Research Center, Syracuse University Libraries, Syracuse, N.Y., checked the Alfred Goldsborough Mayer (Mayor) Papers. Finally, two anonymous reviewers provided helpful suggestions for improving the manuscript.

[110] What little we know about Tsuji Kakō is derived from art museum and gallery exhibit announcements (see https://samblog.seattleartmuseum.org/2011/12/samart-the-wave-paintings-of-tsuji-kako/; https://www.momak.go.jp/English/exhibitionArchive/2006/350.html; and https://www.sarugallery.com/japanese_paintings/artists/kako_tsuji.html).

[111] A side-by-side comparison of their seals and signatures shows that the two artists are different people (see http://www.myjapanesehanga.com/home/artists/morita-kako-active-late-1890s-to-1930s).

Table 1.—List of plates.

FIN no.	Letter	Family	Original name	Valid scientific name	Author(s)	Common name: English	Common name: Japanese
Plate I.—Fishes in Peru 1							
15871	A	Sciaenidae	*Stellifer minor*	*Stellifer minor*	(Tschudi, 1846)	Minor stardrum	N/A
05902	B	Sciaenidae	*Sciaena delisiosa*	*Sciaena deliciosa*	(Tschudi, 1846)	Lorna drum	N/A
14634	C	Sciaenidae	*Larimus pacificus*	*Larimus pacificus*	Jordan and Bollman, 1890	Pacific drum	N/A
15638	D	Latilidae	*Caulolatilus cabezon*	*Caulolatilus affinis*	Gill, 1865	Bighead tilefish	N/A
13733	E	Sciaenidae	*Menticirrhus cokeri*	*Menticirrhus ophicephalus*	(Jenyns, 1840)	Snakehead kingcroaker	N/A
22102	F	Sciaenidae	*Sciaena gilberti*	*Cilus gilberti*	(Abbott, 1899)	Corvina drum	N/A
Plate II.—Fishes in Peru 2							
3146	A	Pomacentridae	*Chromis intercrusma*	*Chromis intercrusma*	Evermann and Radcliffe, 1917	Peruvian chromis	N/A
5629	B	Sebastidae	*Sebastichthys chamaco*	*Sebastes capensis*	(Gmelin, 1789)	Cape redfish	N/A
11346	C	Gerreidae	*Gerres periche*	*Eugerres brevimanus*	(Günther, 1864)	Short fin mojarra	N/A
1453	D	Balistidae	*Balistes polylepis*	*Balistes polylepis*	Steindachner, 1876	Finescale triggerfish	N/A
01563	E	Gobiesocidae	*Arbaciosa hieroglyphica*	*Tomicodon chilensis*	Brisout de Barneville, 1846	Smallsucker clingfish	N/A
00856	F	Aplodactylidae	*Aplodactylus punctatus*	*Aplodactylus punctatus*	Valenciennes, 1832	No English equivalent	N/A
Plate III.—Fishes in Peru 3							
04609	A	Carangidae	*Trachurus symmetricus*	*Trachurus symmetricus*	(Ayres, 1855)	Pacific jack mackerel	N/A
06893	B	Batrachoididae	*Porichthys longicephalus*	*Aphos porosus*	(Valenciennes, 1837)	Banded toadfish	N/A
14699	C	Labrisomidae	*Lepisoma philippi*	*Labrisomus philippii*	(Steindachner, 1866)	Chalapo clinid	N/A
22176	D	Ophidiidae	*Brotula maculata*	*Brotula clarkae*	Hubbs, 1944	Pacific bearded brotula	N/A
Plate IV.—Fishes in Peru 4							
10341	A	Chaenopsidae	*Emblemaria hudsoni*	*Emblemaria hudsoni*	Evermann and Radcliffe, 1917	N/A	N/A
15954	B	Scaridae	*Xenoscarus denticulatus*	*Nicholsina denticulata*	(Evermann and Radcliffe, 1917)	Loosetooth parrotfish	N/A
Plate V.—Fishes in the United States							
10633	A	Percidae	*Etheostoma hildebrandti*	*Etheostoma exile*	(Girard, 1859)	Iowa darter	N/A
01515	B	Agonidae	*Hypsagonus quadricornis*	*Hypsagonus quadricornis*	(Valenciennes, 1829)	Fourhorn poacher	Tsuno-shachi-uo ツノシャチウオ
10556	C	Labrisomidae	*Ericteis kalisherae*	*Gobioclinus kalisherae*	(Jordan, 1904)	Downy blenny	N/A
11443	D	Gobiidae	*Gnatholepis thompsoni*	*Gnatholepis thompsoni*	Jordan, 1904	Goldspot goby	N/A
Plate VI.—Fishes in Japan 1							
00849	A	Aploactinidae	*Aploactis aspera*	*Aploactis aspera*	(Richardson, 1845)	Dusky velvetfish	Ibo-okoze イボオコゼ
12270	B	Cottidae	*Hemilepidotus gilberti*	*Hemilepidotus gilberti*	Jordan and Starks, 1904	Gilbert's Irish Lord	Yokosujikajika ヨコスジカジカ

Table continued

Table 1.—*Continued*.

FIN no.	Letter	Family	Original name	Valid scientific name	Author(s)	Common name: English	Common name: Japanese
00186	C	Cottidae	*Alcichthys alcicornis*	*Alcichthys elongatus*	(Steindachner, 1881)	N/A	Nijikajika ニジカジカ
03706	D	Cottidae	*Cottus kazika*	*Rheopresbe kazika*	(Jordan and Starks 1904)	Fourspine sculpin	Kamakiri カマキリ(アユカケ)
04720	E	Cottidae	*Trachidermus ansatus*	*Trachidermus fasciatus*	Heckel, 1837	Roughskin sculpin	Yamanokami ヤマノカミ
07219	F	Cottidae	*Pseudoblennius totomius*	*Pseudoblennius totomius*	Jordan and Starks 1904	N/A	Hamaanahaze ハマアナハゼ
Plate VII.—Fishes in Japan 2							
01756	A	Synanceiidae	*Erosa erosa*	*Erosa erosa*	(Cuvier, 1829)	Pitted stonefish	Darumaokoze ダルマオコゼ
11061	B	Synanceiidae	*Minous echigonius*	*Minous monodactylus*	(Bloch and Schneider, 1801)	Grey stingfish	Hime-okoze ヒメオコゼ
15141	C	Setarchidae	*Lythrichthys eulabes*	*Setarches longimanus*	(Alcock, 1894)	Red deepwater scorpionfish	Akakasago アカカサゴ
Plate VIII.—Fishes in Japan 3							
13755	A	Menidae	*Mene maculata*	*Mene maculata*	(Bloch and Schneider, 1801)	Moonfish	Ginkagami ギンカガミ
12740	B	Chaetodontidae	*Heniochus acuminatus*	*Heniochus acuminatus*	(Linnaeus, 1758)	Pennat coralfish	Hatatatedai ハタタテダイ
09507	C	Agonidae	*Occa iburia*	*Occella iburia*	(Jordan and Starks, 1904)	No English equivalent	Saburou サブロウ
Plate IX.—Fishes in Hawaii 1							
04543	A	Tetraodontidae	*Tropidichthys coronatus*	*Canthigaster amboinensis*	(Bleeker, 1864)	Spider-eye puffer	N/A
14568	B	Tetraodontidae	*Lagocephalus oceanicus*	*Lagocephalus lagocephalus*	(Linnaeus, 1758)	Oceanic puffer	Kumasakafugu クマサカフグ
01514	C	Ostraciidae	*Ostracion oahuenisis*	*Ostracion meleagris*	Shaw, 1796	Whitespotted boxfish	Kurohakofuku クロハコフグ
05207	D	Monacanthidae	*Stephanolepis pricei*	*Pervagor spilosoma*	(Lay and Bennett, 1839)	Fantail filefish	N/A
10372	E	Bothidae	*Engyprosopon arenicola*	*Engyprosopon arenicola*	Jordan and Evermann, 1903	Fringelip dwarf flounder	N/A
Plate X.—Fishes in Hawaii 2							
00731	A	Antennariidae	*Antennarius drombus*	*Antennatus coccineus*	(Lesson, 1831)	Hawaiin frogfish	Uruma-kaeruankou ウルマカエルアンコウ
00744	B	Antennariidae	*Antennarius nexilis*	*Antennatus coccineus*	(Lesson, 1831)	Hawaiin frogfish	Uruma-kaeruankou ウルマカエルアンコウ
06164	C	Scaridae	*Scarus bennetti*	*Scarus dubius*	Bennett, 1828	Regal parrot	N/A
10288	D	Carangidae	*Carangus elacate*	*Caranx sexfasciatus*	Quoy and Gaimard, 1825	Bigeye trevally	Gingame-aji ギンガメアジ
Plate XI.—Fishes in Hawaii 3							
13551	A	Moringuidae	*Moringua hawaiiensis*	*Moringua hawaiiensis*	Snyder, 1904	Hawaiian spaghetti eel	N/A
11169	B	Carapidae	*Fierasfer umbratilis*	*Encheliophis gracilis*	(Bleeker, 1856)	Graceful pearlfish	Shimofuri-kakureuo シモフリカクレウオ
11752	C	Muraenidae	*Gymnothorax hilonis*	*Gymnothorax pictus*	(Ahl, 1789)	Paintspotted moray	N/A
11778	D	Muraenidae	*Gymnothorax mucifer*	*Gymnothorax kidako*	(Temminck and Schlegel, 1846)	Kidako moray	Utsubo ウツボ
01527	E	Muraenidae	*Gymnothorax nuttingi*	*Gymnothorax nuttingi*	Snyder, 1904	Nutting's moray	N/A

Table continued

Table 1.—*Continued*.

FIN no.	Letter	Family	Original name	Valid scientific name	Author(s)	Common name: English	Common name: Japanese
Plate XII.—Fishes in Hawaii 4							
08013	A	Apogonidae	*Apogon snyderi*	*Pristiapogon kallopterus*	(Bleeker, 1856)	Iridescent cardinalfish	Kasuri-ishimochi カスリイシモチ
14452	B	Labridae	*Julis flavovittata*	*Coris flavovittata*	(Bennett, 1828)	Yellowstripe coris	N/A
03154	C	Pomacentridae	*Glyphisodon sindonis*	*Plectroglyphidodon sindonis*	(Jordan and Evermann, 1903)	Rock damelsfish	N/A
01518	D	Holocentridae	*Holocentrus diadema*	*Sargocentron diadema*	(Lacepède, 1802)	Crown squirrelfish	Niji-ebisu ニジエビス
00917	E	Apogonidae	*Apogonichthys waikiki*	*Apogonichthys perdix*	Bleeker, 1854	Waikiki cardinalfish	Hawaimatoishimochi ハワイマトイシモチ
09473	F	Kyphosidae	*Sectator azureus*	*Kyphosus ocyurus*	(Jordan and Gilbert, 1882)	Bluestriped chub	Koshinagaisuzumi コシナガイスズミ
Plate XIII.—Fishes in Samoa 1							
13897	A	Blenniidae	*Petroscirtes atrodorsalis*	*Meiacanthus atrodorsalis*	(Günther, 1877)	Forktail blenny	Ougon-nijiginpo オウゴンニジギンポ
01755	B	Monacanthidae	*Oxymonacanthus longirostris*	*Oxymonacanthus longirostris*	(Bloch and Schneider, 1801)	Harlequin filefish	Tengu-kawahagi テングカワハギ
14144	C	Malacanthidae	*Oceanops latovittatus*	*Malacanthus latovittatus*	(Lacepède, 1801)	Blue blanquillo	Kitsune-amadai キツネアマダイ
12955	D	Pomacanthidae	*Holacanthus nicobariensis*	*Pomacanthus imperator*	(Bloch, 1787)	Emperor angelfish	Tatejima-kinchakudai タテジマキンチャクダイ
01531	E	Pomacanthidae	*Holacanthus bispinosus*	*Centropyge bispinosa*	(Günther, 1860)	Twospined angelfish	Ruriyakko ルリヤッコ
Plate XIV.—Fishes in Samoa 2							
00034	A	Pomacentridae	*Abudefduf dicki*	*Plectroglyphi-dodon dickii*	(Liénard, 1839)	Blackbar devil	N/A
00044	B	Pomacentridae	*Abudefduf leucopomus*	*Chrysiptera brownriggii* (juvenile)	(Bennett, 1828)	Surge damselfish	N/A
07442	C	Pomacentridae	*Pomacentrus vaiuli*	*Pomacentrus vaiuli*	Jordan and Seale, 1906	Ocellate damselfish	Kurogane-suzumedai クロメガネスズメダイ
00069	D	Pomacentridae	*Abudefduf uniocellatus*	*Chrysiptera cyanea*	(Quoy and Gaimard, 1825)	Sapphire devil	Ruri-suzumedai ルリスズメダイ
00065	E	Pomacentridae	*Abudefduf taupou*	*Chrysiptera taupou*	(Jordan and Seale, 1906)	Southseas devil	N/A
00018	F	Pomacentridae	*Abudefduf amabilis*	*Chrysiptera brownriggii*	(Bennett, 1828)	Surge damselfish	N/A
07453	G	Pomacentridae	*Pomacentrus pavo*	*Pomacentrus pavo*	(Bloch, 1787)	Sapphire damsel	Kujyaku-suzumedai クジャクスズメダイ
01537	H	Pomacentridae	*Abudefduf sexfasciatus*	*Abudefduf sexfasciatus*	(Lacepède, 1801)	Scissortail sergeant	Rokusen-suzumedai ロクセンスズメダイ
03139	I	Pomacentridae	*Chromis caeruleus*	*Chromis viridis*	(Cuvier, 1830)	Blue green damselfish	Deba-suzumedai デバスズメダイ
Plate XV.—Fishes in Samoa 3							
14067	A	Chaetodontidae	*Megaprotodon trifascialis*	*Chaetodon trifascialis*	Quoy and Gaimard, 1825	Chevron butterflyfish	Yarikatagi ヤリカタギ
02825	B	Chaetodontidae	*Chaetodon rafflesi*	*Chaetodon rafflesii*	Anonymous [Bennett], 1830	Latticed Butterfly	Ami-chô-chô-uo アミチョウチョウウオ
00400	C	Blenniidae	*Alticus saliens*	*Alticus saliens*	(Forster, 1788)	Leaping Blenny	Tamakaeru-uo タマカエルウオ
01526	D	Monodactylidae	*Monodactylus argenteus*	*Monodactylus argenteus*	(Linnaeus, 1758)	Silver moony	Himetsubameuo ヒメツバメウオ

Table continued

Table 1.—*Continued*.

FIN no.	Letter	Family	Original name	Valid scientific name	Author(s)	Common name	
						English	Japanese
04169	E	Scorpaenidae	*Dendrochirus melissa*	*Dendrochirus barberi*	(Steindachner, 1900)	Hawaiian lionfish	N/A
01536	F	Scorpaenidae	*Pterois volitans*	*Pterois volitans*	(Linnaeus, 1758)	Red lionfish	Hanaminokasago ハナミノカサゴ
05007	G	Callionymidae	*Synchiropus xanthochir*	*Neosynchiropus ocellatus*	(Pallas, 1770)	Ocellated dragonet	Kouwan-teguri コウワンテグリ
01790	H	Serranidae	*Grammistes sexlineatus*	*Grammistes sexlineatus*	(Thunberg, 1792)	Goldenstriped soapfish	Nunosarashi ヌノサラシ
Plate XVI.—Fishes in Samoa 4							
06176	A	Scaridae	*Scarus aeruginosus*	*Scarus ferrugineus*	Forsskål, 1775	Rusty parrotfish	N/A
05960	B	Scaridae	*Callyodon maoricus*	*Scarus niger*	Forsskål, 1775	Dusky parrotfish	Buchibudai ブチブダイ
01525	C	Scaridae	*Pseudoscarus jordani*	*Scarus rubroviolaceus*	Bleeker, 1847	Ember parrotfish	Nagabudai ナガブダイ
06118	D	Scaridae	*Callyodon spilonotus*	*Scarus globiceps*	Valenciennes, 1840	Globehead parrotfish	Daidai-budai ダイダイブダイ
04417	E	Gobiidae	*Valenciennea violifera*	*Valenciennea sexguttata*	(Valenciennes, 1837)	Sixspot goby	Mizutamahaze ミズタマハゼ
06842	F	Mullidae	*Pseudupeneus moana*	*Parupeneus multifasciatus*	(Quoy and Gaimard, 1825)	Manybar goatfish	Ojisan オジサン
01572	G	Apogonidae	*Archamia lineolata*	*Taeniamia lineolata*	(Cuvier, 1828)	Shimmering cardinal	N/A
08683	H	Gobiidae	*Paragobiodon echinocephalus*	*Paragobiodon echinocephalus*	(Rüppell, 1830)	Redhead goby	Daruma-haze ダルマハゼ
07907	I	Plesiopidae	*Pharopteryx melas*	*Plesiops coeruleolineatus*	Rüppell, 1835	Crimsontip longfin	Tanabata-uo タナバタウオ
Plate XVII.—Fishes in Samoa 5							
12075	A	Labridae	*Halichoeres centiquadrus*	*Halichoeres hortulanus*	(Lacepède, 1801)	Checkerboard wrasse	Tokarabera カラベラ
08232	B	Labridae	*Platyglossus floscorallis*	*Halichoeres bivittatus*	(Bloch, 1791)	Slippery dick	N/A
12144	C	Labridae	*Halichoeres daedalma*	*Halichoeres margaritaceus*	(Valenciennes, 1839)	Pink-belly wrasse	Akanijibera アカニジベラ
13137	D	Labridae	*Halichoeres trimaculatus*	*Halichoeres trimaculatus*	(Quoy and Gaimard, 1834)	Three-spot wrasse	Mitsuboshi-kyusen ミツボシキュウセン
01530	E	Labridae	*Novaculichthys taeniourus*	*Novaculichthys taeniourus*	(Lacepède, 1801)	Rockmover wrasse	Obi-tensumodoki オビテンスモドキ
14770	F	Labridae	*Leptojulis pardalis*	*Macropharyngodon meleagris*	(Valenciennes, 1839)	Blackspotted wrasse	Nodoguro-bera ノドグロベラ
Plate XVIII.—Fishes in Samoa 6							
01524	A	Labridae	*Coris gaimard*	*Coris gaimard*	(Quoy and Gaimard, 1824)	African coris	Tsuyubera ツユベラ
05148	B	Labridae	*Stethojulis casturi*	*Stethojulis trilineata*	(Bloch and Schneider, 1801)	Three-lined rainbowfish	Onibera オニベラ
12142	C	Labridae	*Halichoeres opercularis*	*Halichoeres margaritaceus*	(Valenciennes, 1839)	Pink-belly wrasse	Akanijibera アカニジベラ
17333	D	Labridae	*Stethojulis bandanensis*	*Stethojulis bandanensis*	(Bleeker, 1851)	Red shoulder wrasse	Akaobibera アカオビベラ
07227	E	Labridae	*Pseudocheilinus hexataenia*	*Pseudocheilinus hexataenia*	(Bleeker, 1857)	Sixline wrasse	Nisemochinouo ニセモチノウオ
08233	F	Labridae	*Platyglossus marginatus*	*Halichoeres marginatus*	Rüppell, 1835	Dusky wrasse	Kanoko-bera カノコベラ

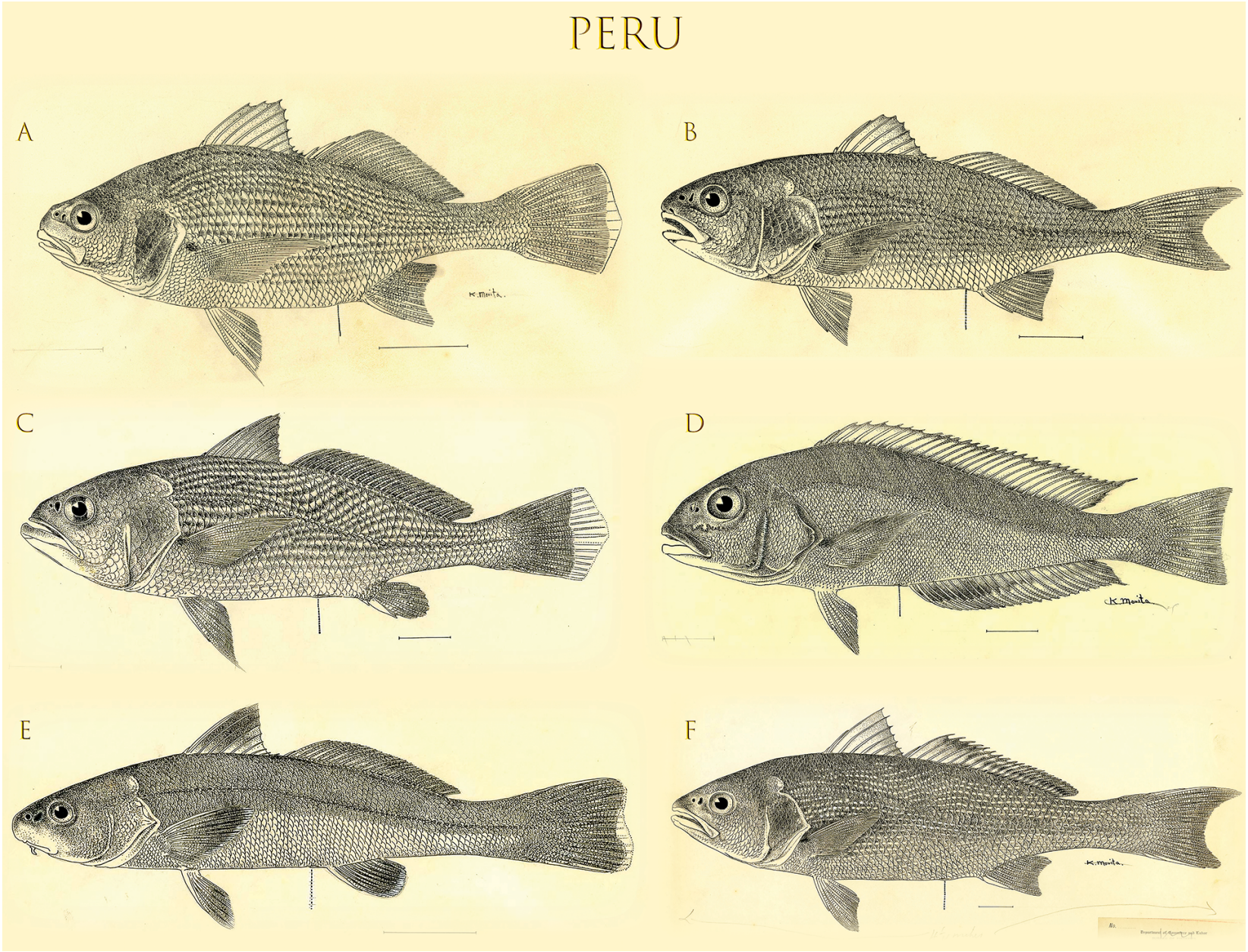


Plate I.—Fishes in Peru 1: A, FIN15871 Sciaenidae *Stellifer minor*; B, FIN05902 Sciaenidae *Sciaena deliciosa*; C, FIN14634 Sciaenidae *Larimus pacificus*; D, FIN15638 Malacanthidae *Caulolatilus cabezon*; E, FIN13733 Sciaenidae *Menticirrhus cokeri*; F, FIN22102 Sciaenidae *Sciaena gilberti*.

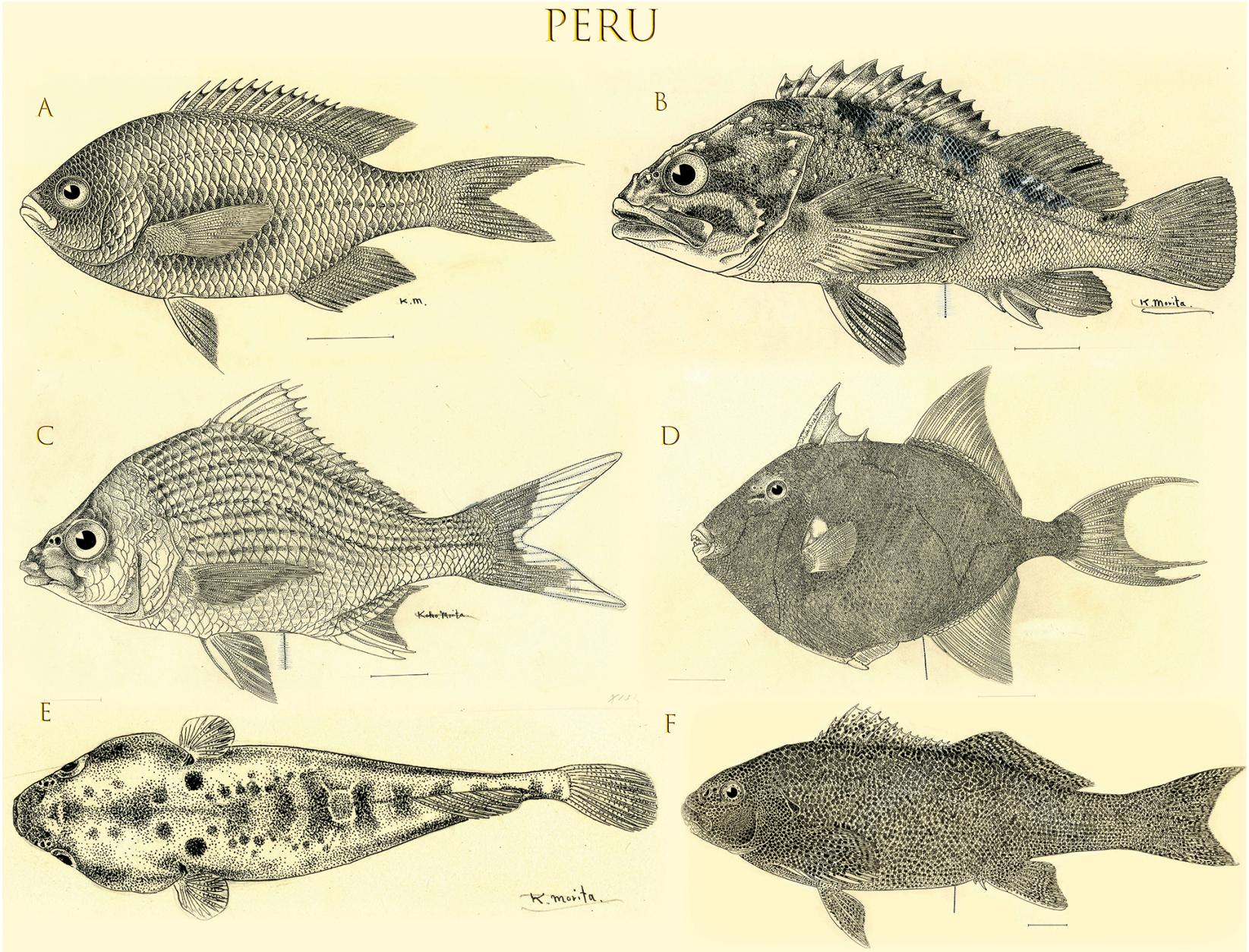


Plate II.—Fishes in Peru 2: A, FIN03146 Pomacentridae *Chromis intercrusma*; B, FIN05629 Sebastidae *Sebastichthys chamaco*; C, FIN11346 Gerreidae *Gerres peri-che*; D, FIN01453 Balistidae *Balistes polylepis*; E, FIN01563 Gobiesocidae *Arbaciosa hieroglyphica*; F, FIN00856 Aplodactylidae *Aplodactylus punctatus*.

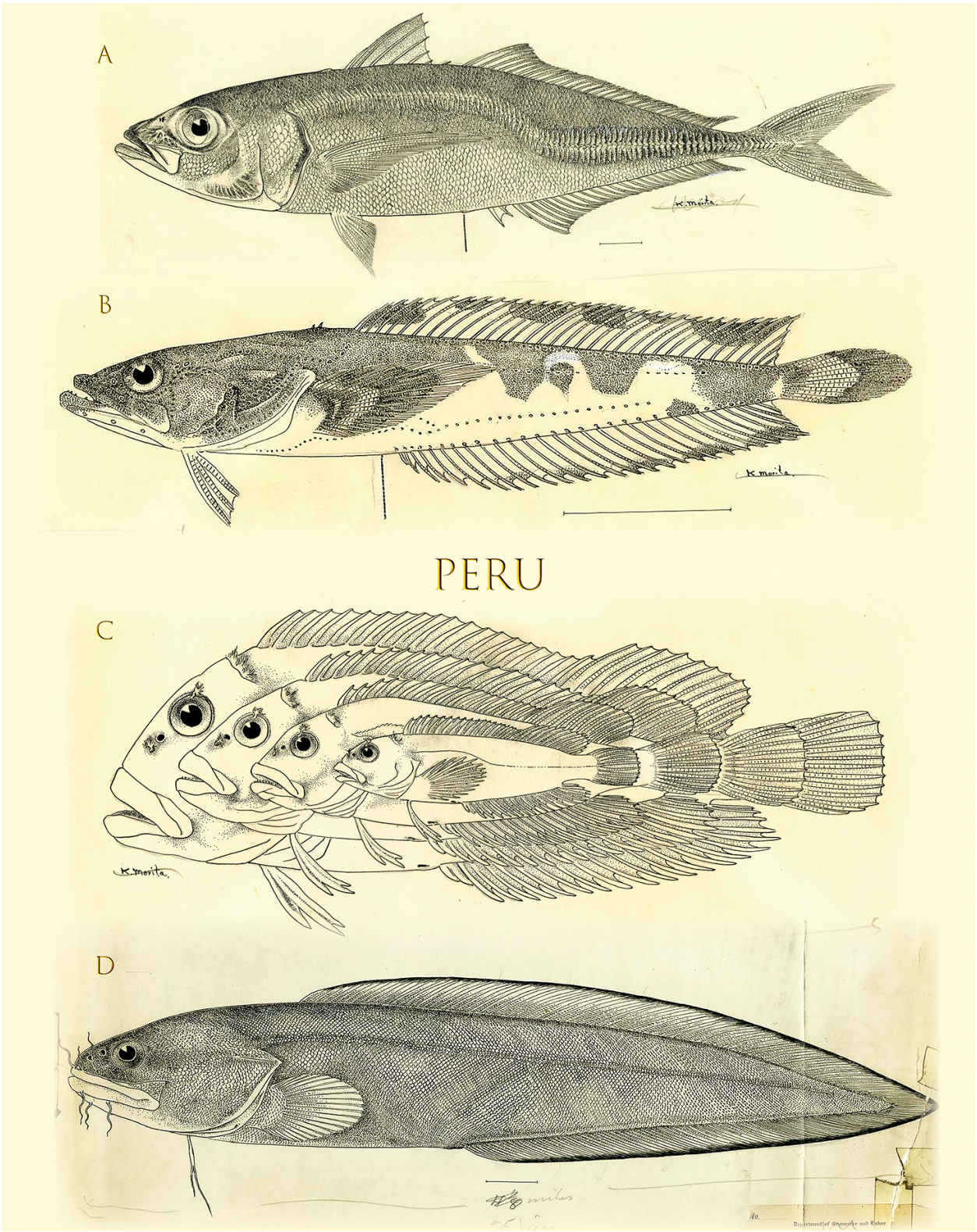


Plate III.—Fishes in Peru 3: A, FIN04609 Carangidae *Trachurus symmetricus*; B, FIN06893 Batrachoidae *Porichthys longicephalus*; C, FIN14699 Labrisomidae *Lepisoma philippi*; D, FIN22176 Ophidiidae *Brotula maculata*.

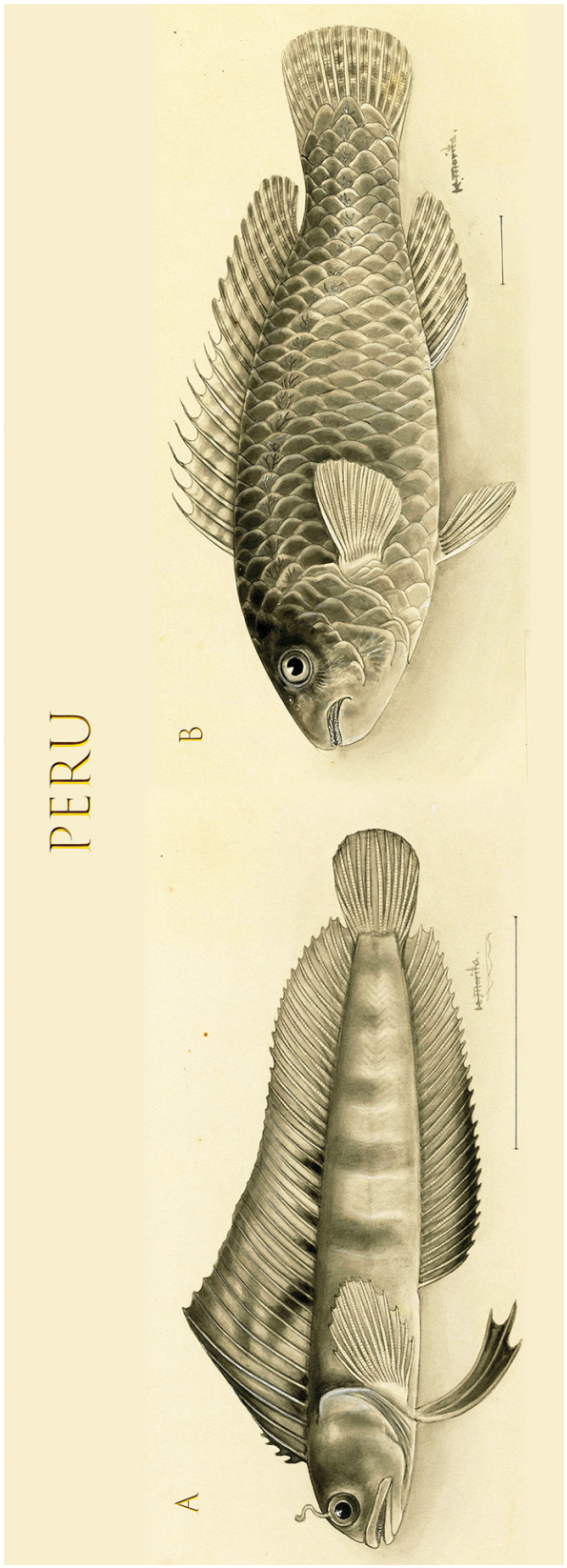


Plate IV.—Fishes in Peru 4: A, FIN10341 Chaenopsidae *Emblemaria hudsoni*; B, FIN15954 Scaridae *Xenoscarus denticulatus*.

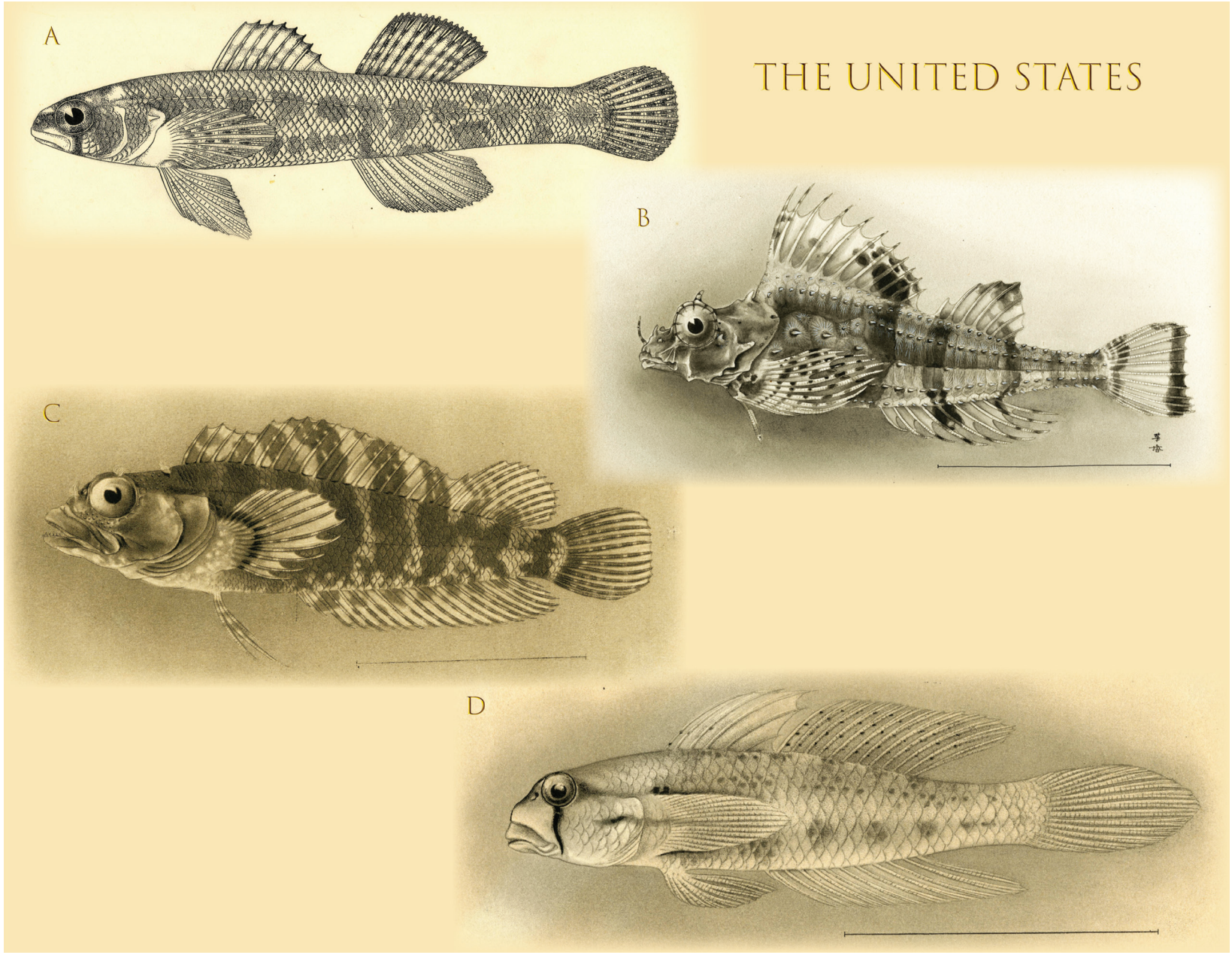


Plate V.—Fishes in the United States: A, FIN10633 Percidae *Etheostoma hildebrandti*; B, FIN01515 Agonidae *Hypsagonus quadricornis*; C, FIN10556 Labrisomidae *Ericteis kalisherae*; D, FIN11443 Gobiidae *Gnatholepis thompsoni*.

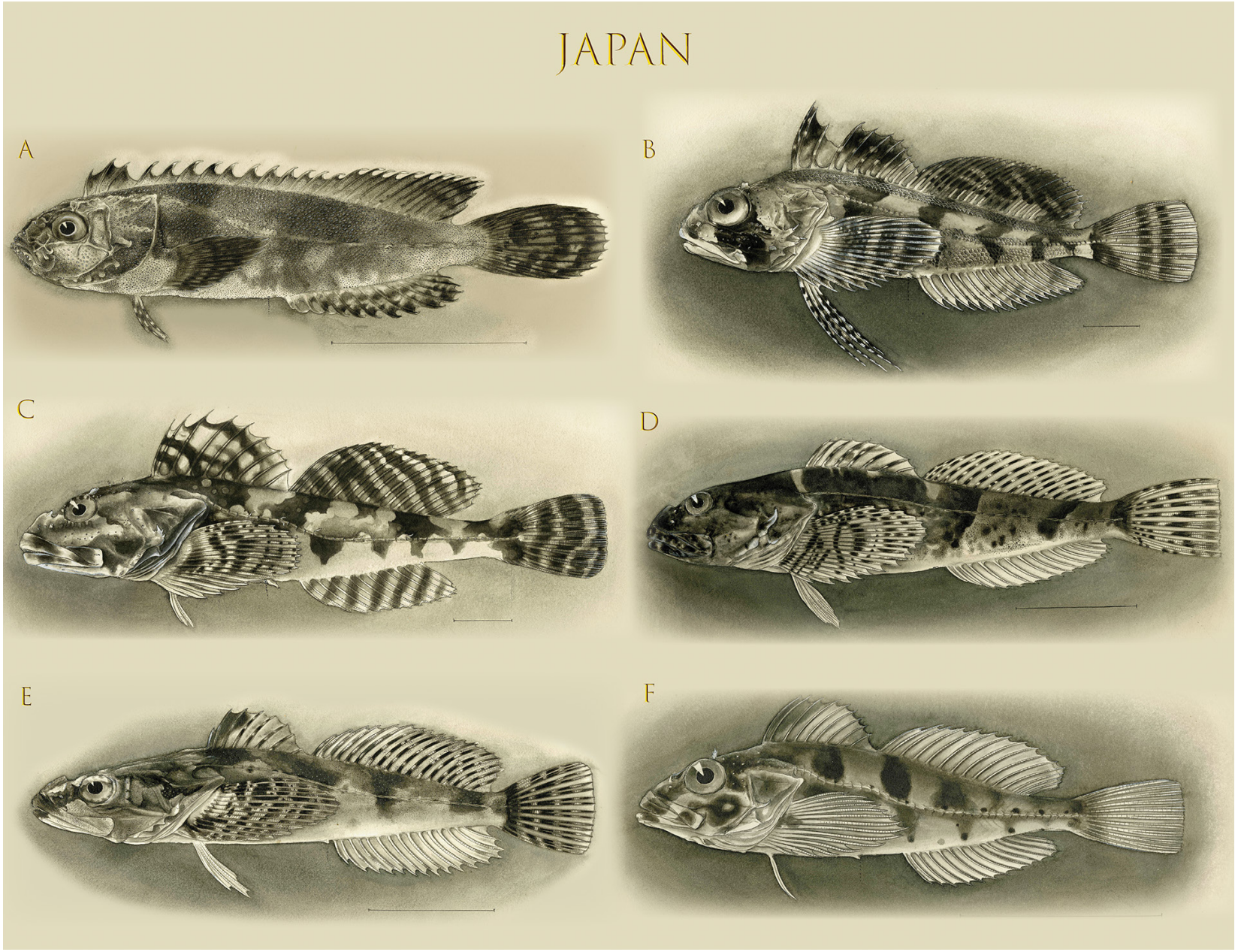


Plate VI.—Fishes in Japan 1: A, FIN00849 Aploactinidae *Aploactis aspera*; B, FIN12270 Cottidae *Hemilepidotus gilberti*; C, FIN00186 Cottidae *Alcichthys alcicornis*; D, FIN03706 Cottidae *Cottus kazika*; E, FIN04720 Cottidae *Trachidermus ansatus*; F, FIN07219 Cottidae *Pseudoblennius totomius*.

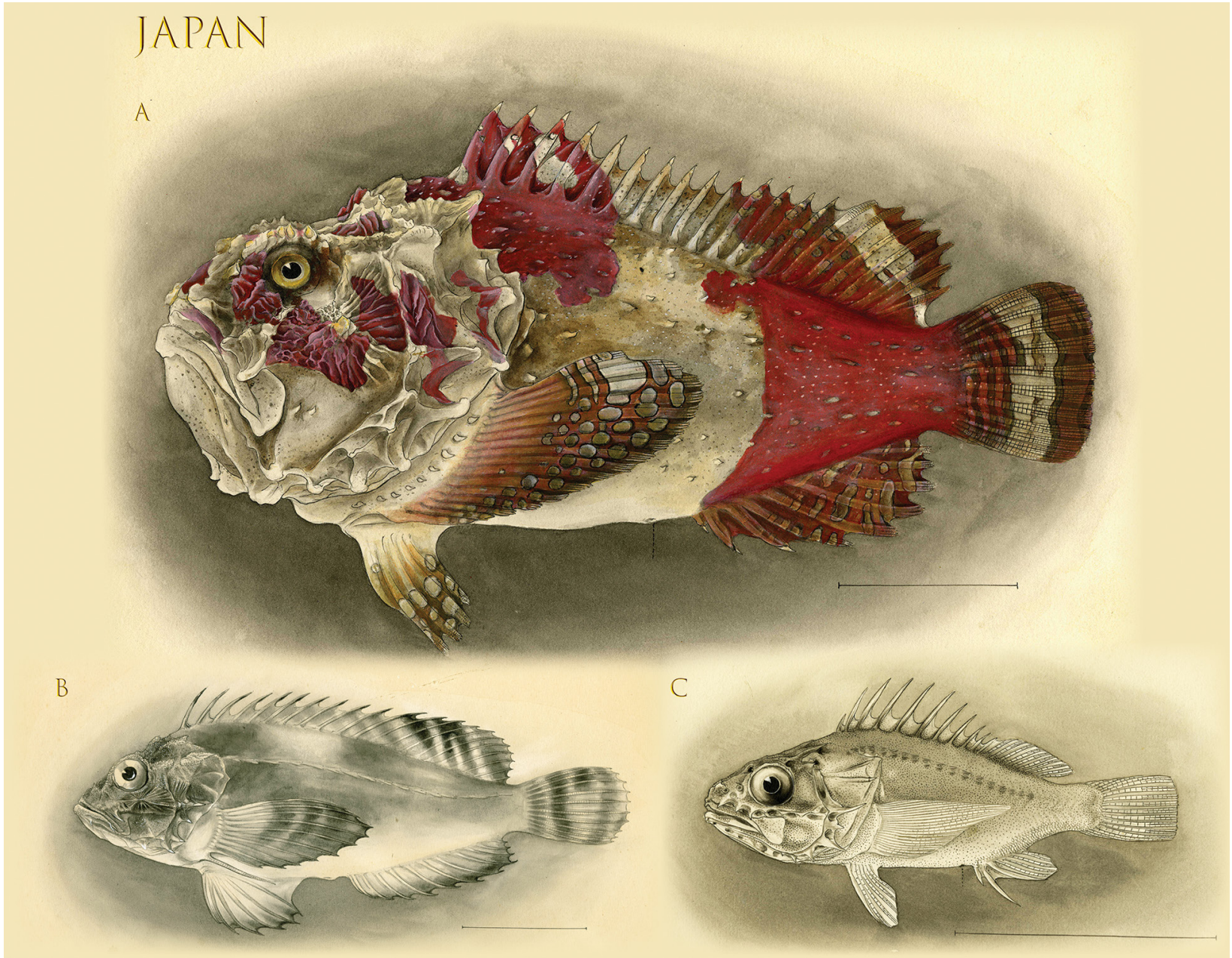


Plate VII.—Fishes in Japan 2: A, FIN01756 Synanceiidae *Erosa erosa*; B, FIN11061 Synanceiidae *Minous echigonius*; C, FIN15141 Setarchidae *Lythrichthys eulabes*.

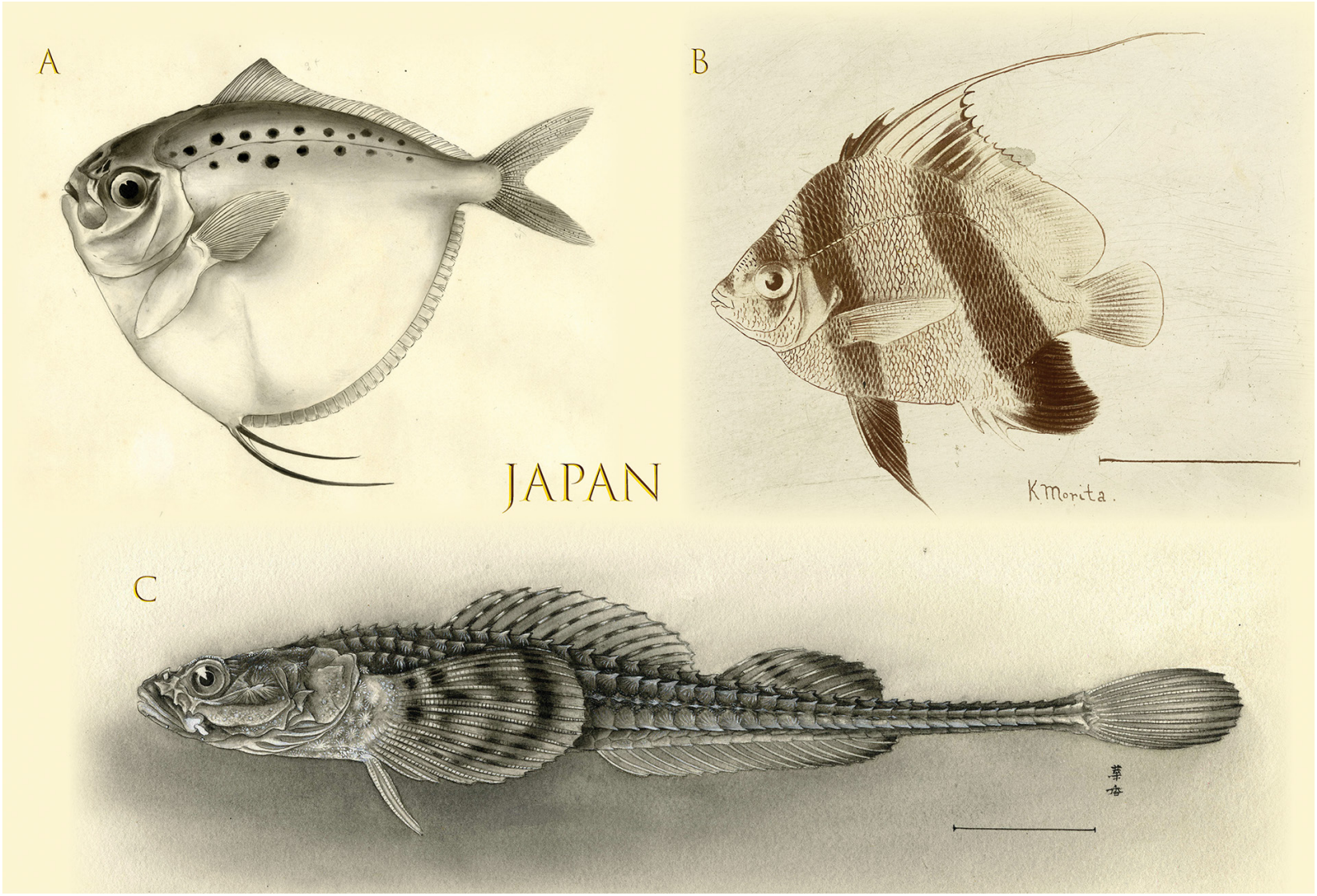


Plate VIII.—Fishes in Japan 3: A, FIN13755 Menidae *Mene maculate*; B, FIN12740 Chaetodontidae *Heniochus acuminatus*; C, FIN09507 Agonidae *Occa iburia*.

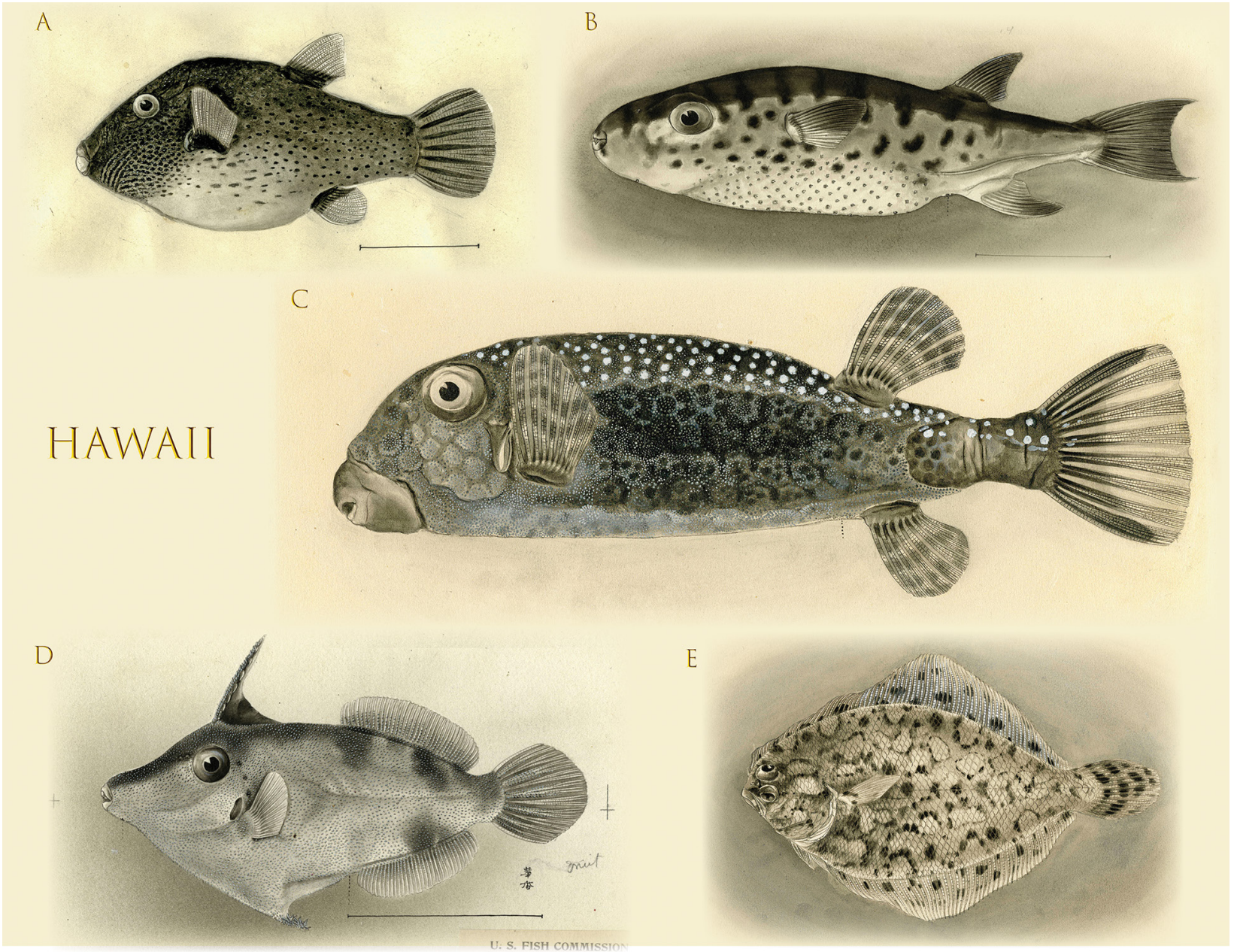


Plate IX.—Fishes in Hawaii 1: A, FIN04543 Tetraodontidae *Tropidichthys coronatus*; B, FIN14568 Tetraodontidae *Lagocephalus oceanicus*; C, FIN01514 Ostraciidae *Ostracion oahuensis*; D, FIN05207 Monacanthidae *Stephanolepis pricei*; E, FIN10372 Bothidae *Engyprosopon arenicola*.

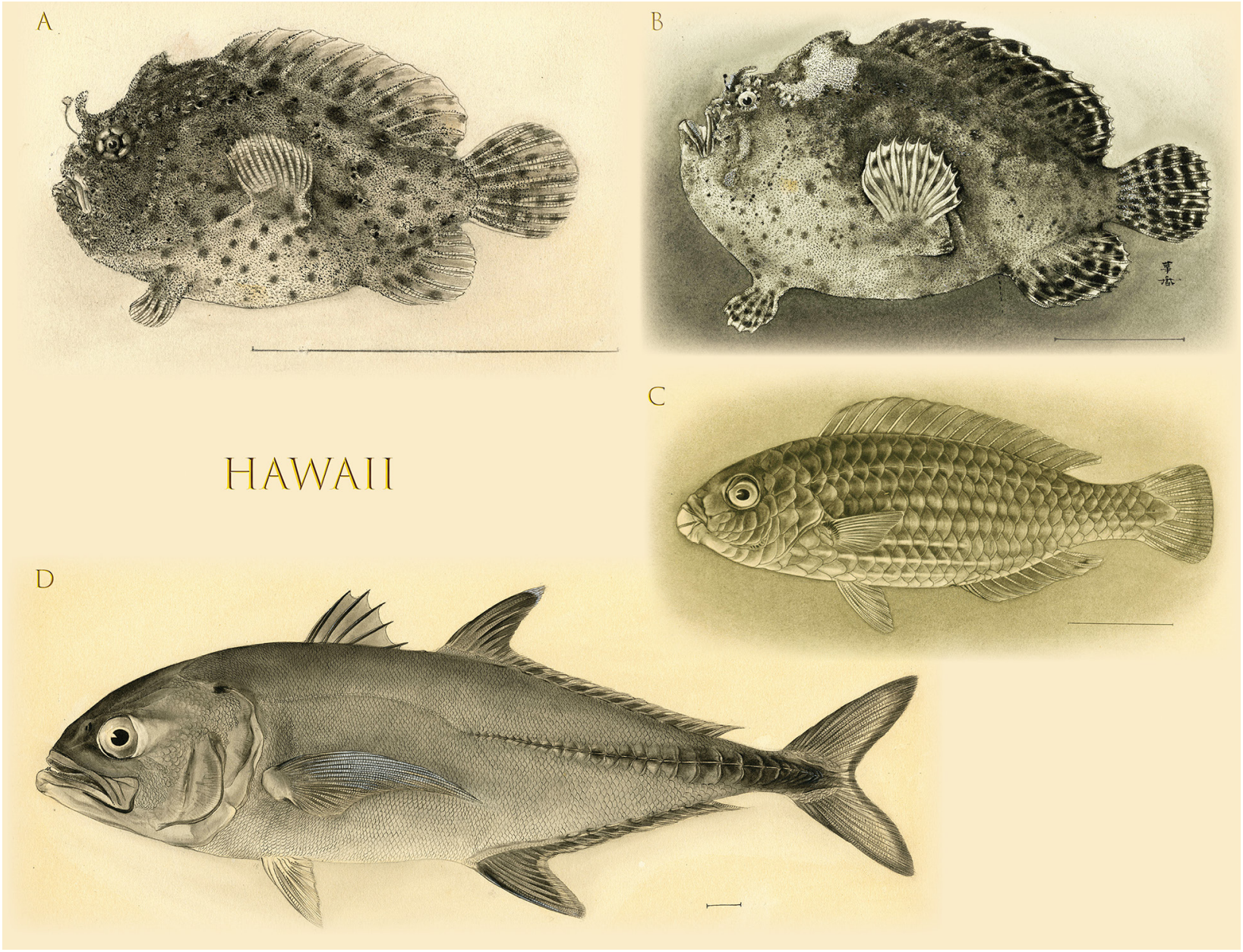


Plate X.—Fishes in Hawaii 2: A, FIN00731 Antennaridae *Antennarius drombus*; B, FIN00744 Antennaridae *Antennarius nexilis*; C, FIN06164 Scaridae *Scarus bennetti*; D, FIN10288 Carangidae *Carangus elacate*.

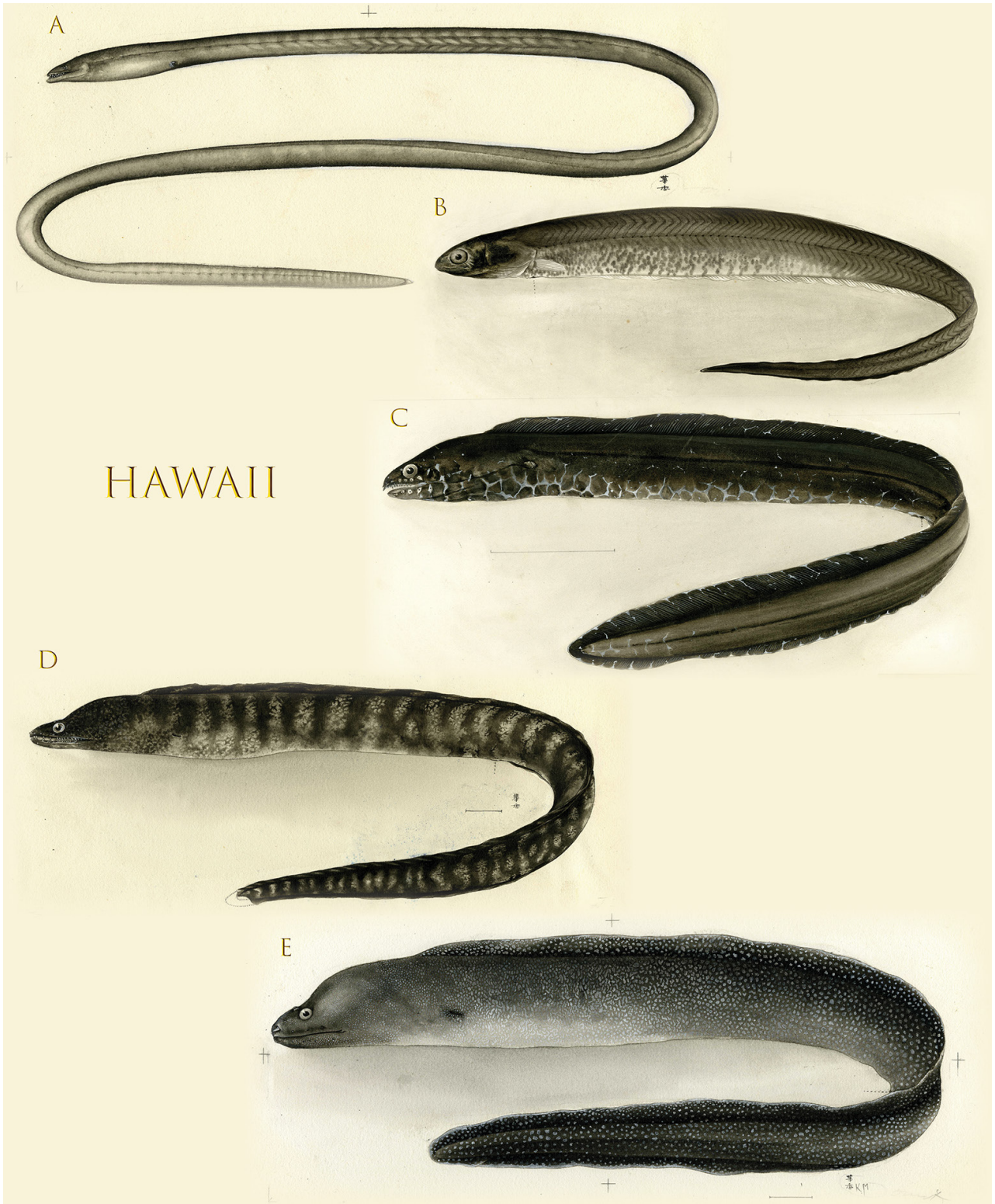


Plate XI.—Fishes in Hawaii 3: A, FIN13551 Moringuidae *Moringua hawaiiensis*; B, FIN11169 Carapidae *Fierasfer umbratilis*; C, FIN11752 Muraenidae *Gymnothorax hilonis*; D, FIN11778 Muraenidae *Gymnothorax mucifer*; E, FIN01527 Muraenidae *Gymnothorax nuttingi*.

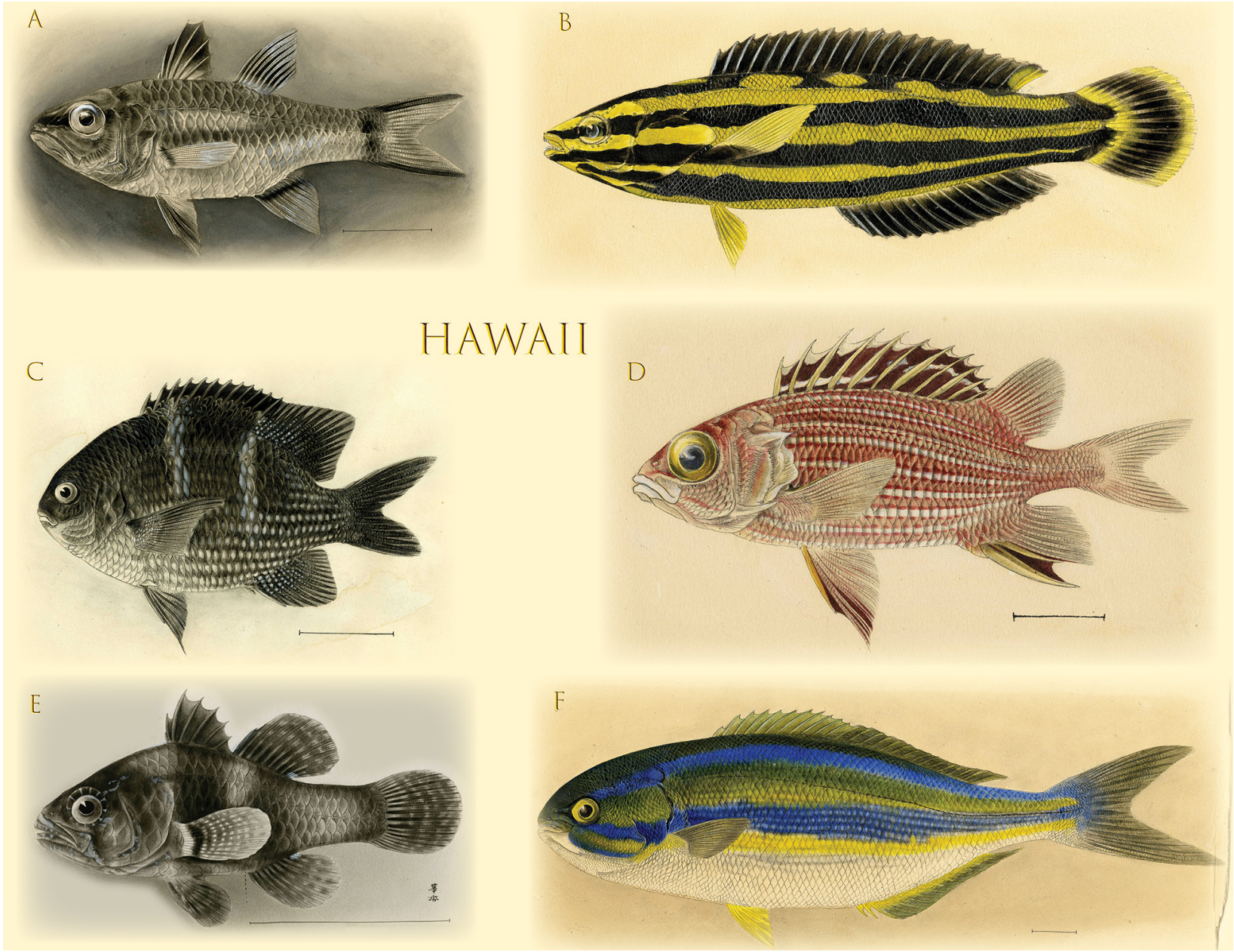


Plate XII.—Fishes in Hawaii 4: A, FIN08013 Apogonidae *Apogon snyderi*; B, FIN14452 Labridae *Julis flavovittata*; C, FIN03154 Pomacentridae *Glyphisodon sindonis*; D, FIN01518 Holocentridae *Holocentrus diadema*; E, FIN00917 Apogonidae *Apogonichthys waikiki*; F, FIN09473 Kyphosidae *Sectator azureus*.

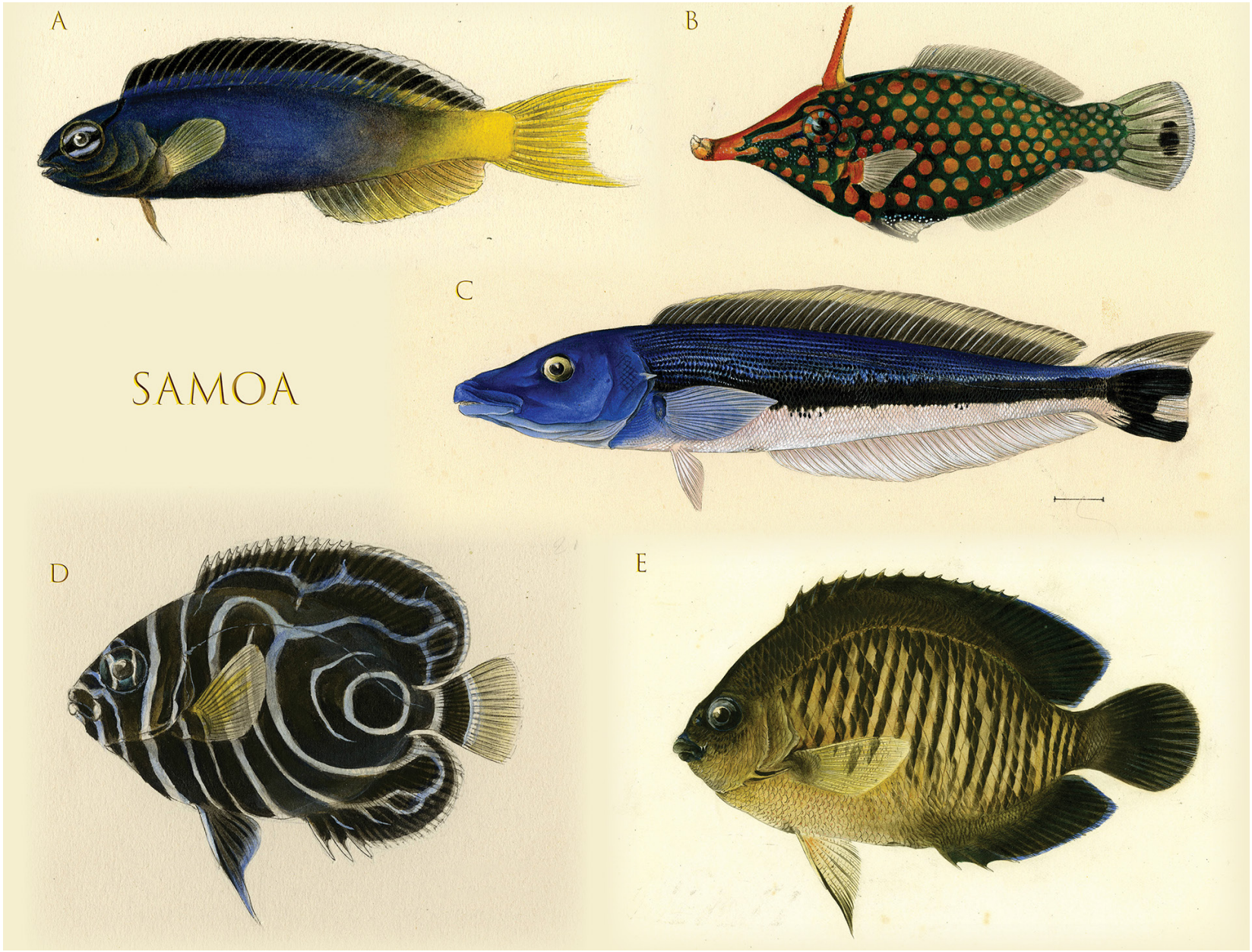


Plate XIII.—Fishes in Samoa 1: A, FIN13897 Blenniidae *Petroscirtes atrodorsalis*; B, FIN01755 Monacanthidae *Oxymonacanthus longirostris*; C, FIN14144 Malacanthidae *Oceanops latovittatus*; D, FIN12955 Pomacanthidae *Holacanthus nicobariensis*; E, FIN01531 Pomacanthidae *Holacanthus bispinosus*.

Plate XIV.—Fishes in Samoa 2: A, FIN00034 Pomacentridae *Abudefduf dicki*; B, FIN00044 Pomacentridae *Abudefduf leucopomus*; C, FIN07442 Pomacentridae *Pomacentrus vaiuli*; D, FIN00069 Pomacentridae *Abudefduf uniocellatus*; E, FIN00065 Pomacentridae *Abudefduf taupou*; F, FIN00018 Pomacentridae *Abudefduf amabilis*; G, FIN07453 Pomacentridae *Pomacentrus pavo*; H, FIN01537 Pomacentridae *Abudefduf sexfasciatus*; I, FIN03139 Pomacentridae *Chrois caeruleus*.

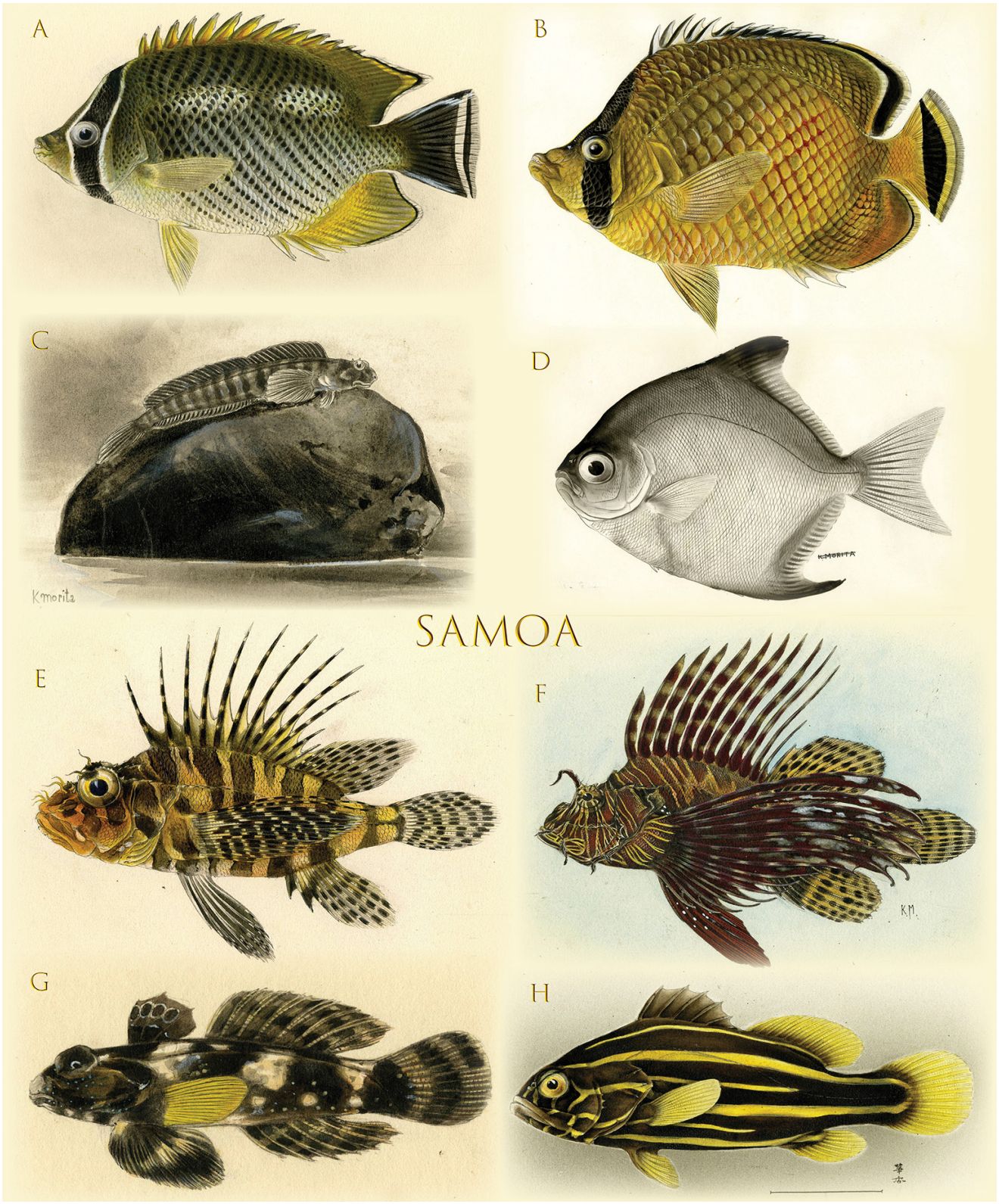


Plate XV.—Fishes in Samoa 3: A, FIN14067 Chaetodontidae *Megaprotodon trifascialis*; B, FIN02825 Chaetodontidae *Chaetodon raffflesi*; C, FIN00400 Blenniidae *Alticus saliens*; D, FIN01526 Monodactylidae *Monodactylus argenteus*; E, FIN04169 Scorpaenidae *Dendrochirus melissa*; F, FIN01536 Scorpaenidae *Pterios volitans*; G, FIN05007 Callioymidae *Synchiropus xanthochir*; H, FIN01790 Serranidae *Grammistes sexlineatus*.

Plate XVI.—Fishes in Samoa 4: A, FIN06176 Scaridae *Scarus aeruginosus*; B, FIN05960 Scaridae *Callyodon maoricus*; C, FIN01525 Scaridae *Pseudoscarus jordani*; D, FIN06118 Scaridae *Callyodon spilonotus*; E, FIN04417 Gobiidae *Valenciennea violifera*; F, FIN06842 Mullidae *Pseudupeneus moana*; G, FIN01572 Apogonidae *Archamia lineolata*; H, FIN08683 Gobiidae *Paragobiodon echinocephalus*; I, FIN07907 Plesiopidae *Pharopteryx melas*.

Plate XVII.—Fishes in Samoa 5: A, FIN12075 Labridae *Halichoeres centiquadrus*; B, FIN08232 Labridae *Platyglossus floscorallis*; C, FIN12144 Labridae *Halichoeres daedalma*; D, FIN13137 Labridae *Halichoeres trimaculatus*; E, FIN01530 Labridae *Novaculichthys taeniourus*; F, FIN14770 Labridae *Leptojulis pardalis*.

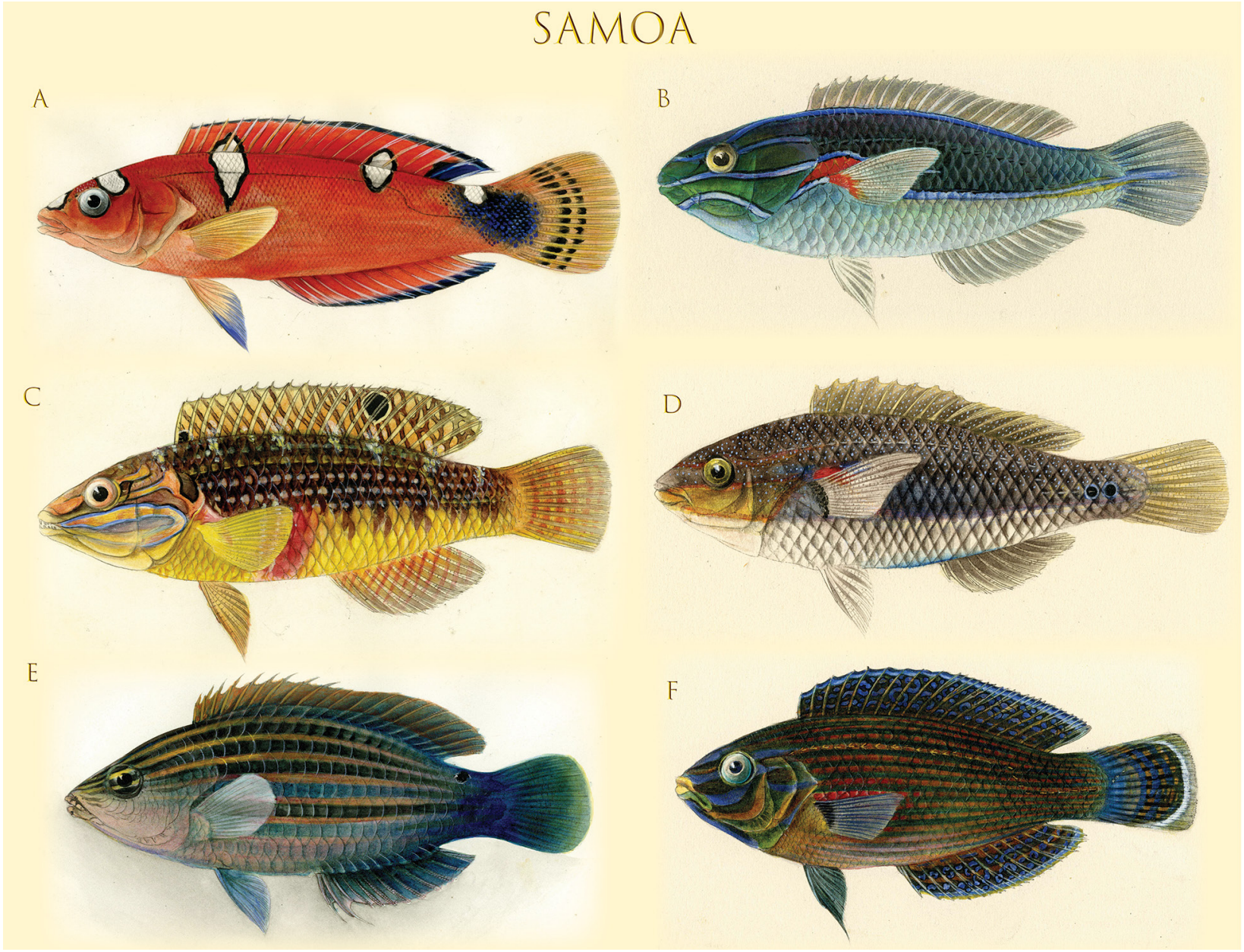


Plate XVIII.—Fishes in Samoa 6: A, FIN01524 Labridae *Coris gaimard*; B, FIN05148 Labridae *Stethojulis casturi*; C, FIN12142 Labridae *Halichoeres opercularis*; D, FIN17333 Labridae *Stethojulis bandanensis*; E, FIN07227 Labridae *Pseudocheilinus hexataenia*; F, FIN08233 Labridae *Platyglossus marginatus*.

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