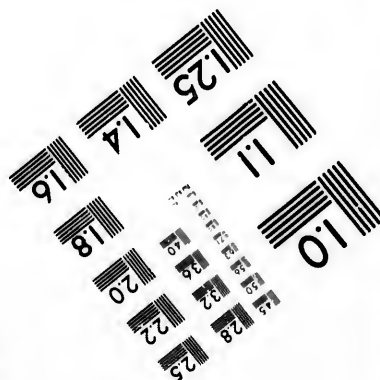
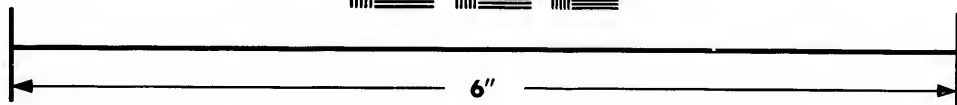
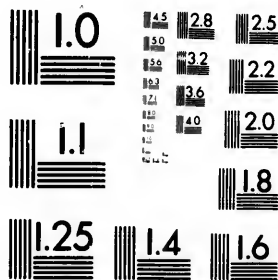


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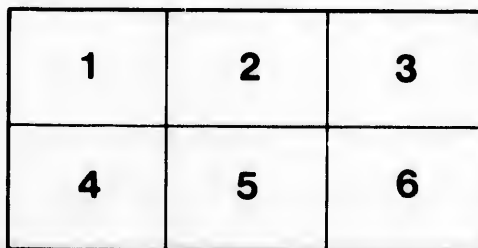
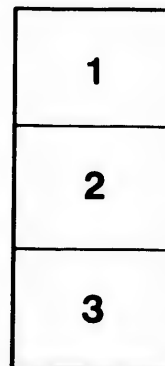
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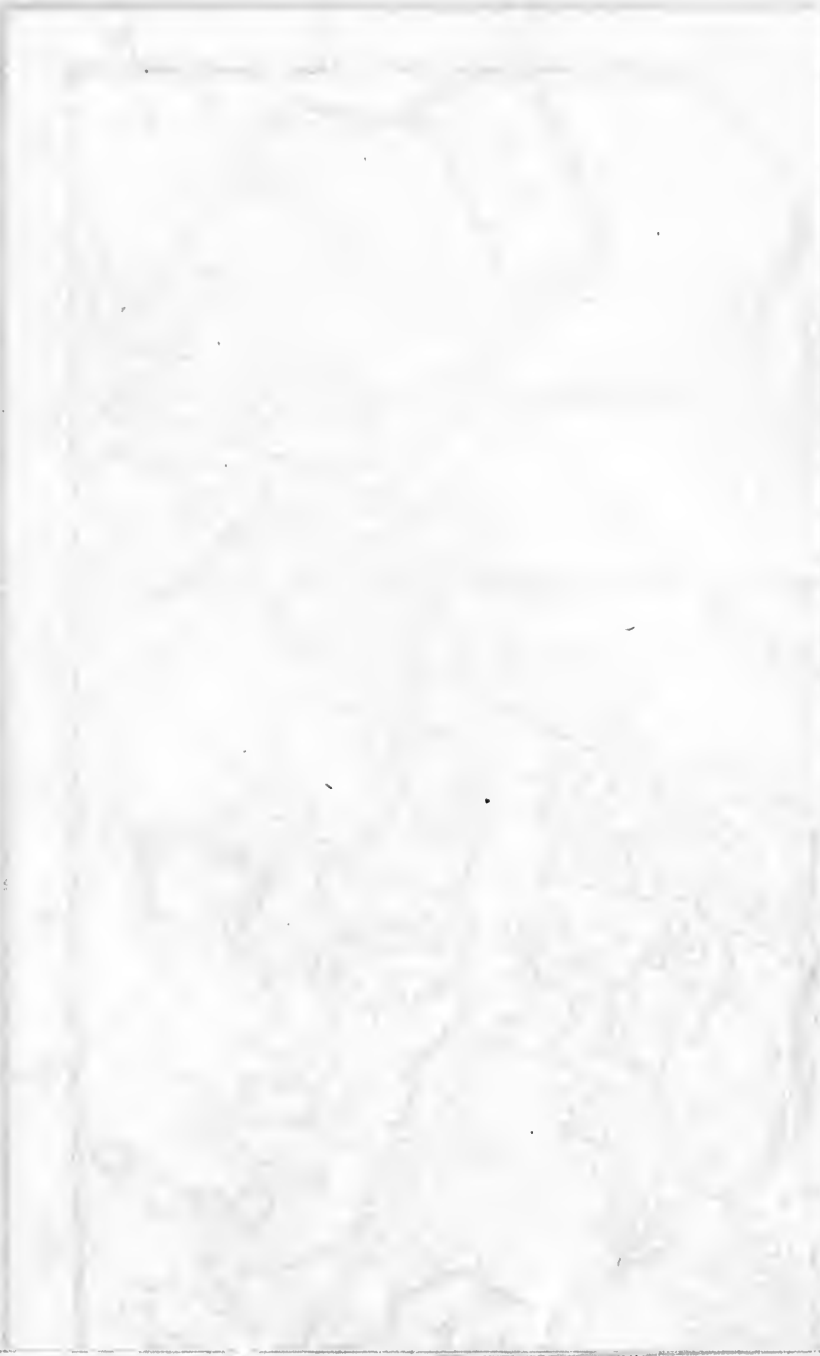
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CARTE dressée Sur la lettre de l'Amiral de FONTE par l'Ecrivain de la Californie.

CARTE GÉNÉRALE DES de l'Amiral de

et autres Navigateurs Espagnols pour la recherche du Passage

Par M. De l'Isle de l'Académie

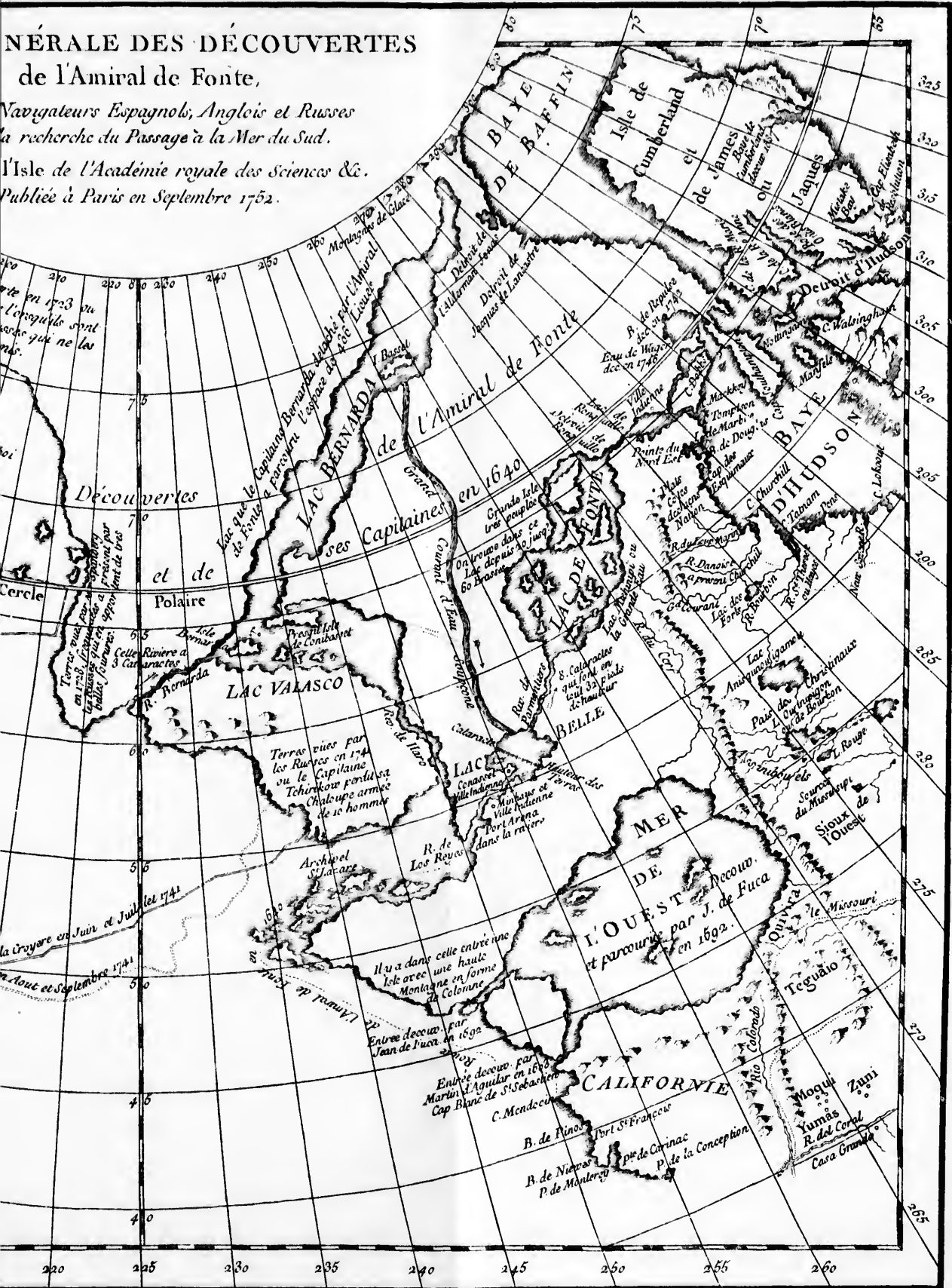
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NÉRALE DES DÉCOUVERTES de l'Amiral de Fonte,

Navigateurs Espagnols, Anglois et Russes
la recherche du Passage à la Mer du Sud.

L'Isle de l'Académie royale des Sciences &c.
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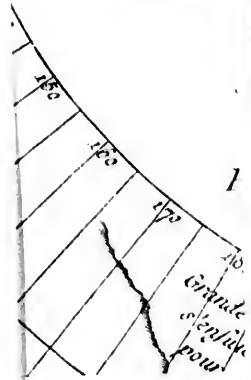
Terras vues par
les Russes en 1741
ou le Capitaine
Tchirikow...

Il y a dans cette entrée une
Isle avec une haute
Montagne en forme
de Colonne

Entrée decouv. par
Martin d'Aguilar en 1606
Cap Blanc de Stobachien

Entrée decouv. par
Cap Blanc de Stobachien
en 1606

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A. W. Greeley

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VOL. III, PP. 205-230, PL. 21

JANUARY 28, 1892

THE
NATIONAL GEOGRAPHIC MAGAZINE



THE CARTOGRAPHY AND OBSERVATIONS
OF
BERING'S FIRST VOYAGE.

BY
GENERAL A. W. GREELEY.

(Presented before the Society March 20, 1891.)

It was with no ordinary pleasure that the members of the National Geographic Society listened to the critical review and admirable essay on Bering's first expedition, 1725-1730, read before this Society, together with a translation of Bering's report on the expedition in question, by one of our learned and distinguished members, Professor William H. Dall. The subject then under consideration is one of great interest, and this Society owes a debt of gratitude to Professor Dall for his assiduous labor in collating and translating the available data on this voyage, and must indorse the general conclusions reached in a critical essay which is the result of careful, conscientious research conjoined to much erudition. It is especially fortunate, in view of the vagueness of Bering's report, that it should have been translated and reviewed by a traveler and investigator so thoroughly familiar with the topography of Bering strait and the adjacent region.

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It may appear somewhat presumptuous for the present writer to further dwell on some points of subordinate importance, even with the view of supplementing the investigations of Professor Dall; but he is encouraged to the effort by the admirable spirit in which that gentleman works, which is so clearly indicated in his own words: "I am well aware this paper cannot be regarded as a finality, but as a contribution to the geographical history of North America it will not be without its value." This spirit encourages every one to contribute his mite to elucidate the history of this interesting and ill-known period.

The supplementary remarks now presented mainly relate to two points: first, the cartographic reproduction of Bering's discoveries; second, the alleged observations of lunar eclipses in Kamshatka by Bering and his lieutenants in 1728-'29.

In attempting to add to Professor Dall's essay or to elucidate some points, it is but natural to felicitate one's self that chance has put in one's way rare data in the shape of text and map. Nevertheless, much difficulty has been experienced in efforts to consult publications and charts bearing on this subject, as supplementary to the data in the writer's own library. Fortunately, among his personal books and maps are the following, which have escaped the critical, if not casual, observation of Professor Dall:

1. The original Hague* edition of Père du Halde, which Dall was unable to consult; it is entitled "Description Géographique, Historique, Chronologique, Politique, et Physique de l'Empire et de la Tartarie Chinoise," etc. 4 vols., 4°: à la Haye, 1736.
2. De l'Isle's scattered essays, entitled "Mémoires pour servir à l'histoire et au progres de l'Astronomie, de la Géographie, et de la Physique, etc., etc.: à St. Petersbourg, de l'imprimerie de l'Académie des Sciences. MDCCLXXXVIII [1738]."
3. "Atlas Russien: contenant une Carte Générale et dix-neuf Cartes particulieres de tout l'Empire de Russie et des Pays limitrophes construites conformément aux règles de la Geographie et aux dernières Observations. Par l'Académie Impériale des Sciences de St. Petersbourg. St. Petersbourg, 1745."

This was the first atlas published in Russia in the map department established by order of Peter the Great in the Academy of Sciences of St. Petersburg. It includes a general map of the Russian Empire and nineteen maps of provinces.

* The first edition, in French, was published at Paris, 4 vols., folio, 1735.

4. "Carte de la Sibérie et des Pays voisins. Pour servir à l'Histoire générale des Voyages par le S. Bëllin, Ing. de la Marine," two parts, undated, but to which E. Dufosse, of Paris, assigns the date of 1749. The atlas for this work was originally published by Abbe Prevost at Paris, 1747, et seq., the charts being engraved by Bellin.

This chart appears on casual inspection to be more accurate than either that of d'Anville or of de l'Isle, or of the Russian atlas.

5. The very interesting and valuable map of J. N. de l'Isle, Paris, 1752 (without, however, the accompanying memoir).

I do not think the original map has ever fallen under the notice of Professor Dall, although a garbled reproduction of it is mentioned in his review as follows :

"A chart which deserves notice, though almost wholly fictitious, being chiefly devoted to the spurious discoveries of the alleged Admiral de Fonte, was issued by J. N. de l'Isle with the concurrence of M. P. Bauche or at his suggestion. It appeared at Paris in 1752, and was copied for Jeffery's second edition of voyages from Asia to America in 1764. I do not know if this copy appeared in the first edition, but presume it did."

As the original of de l'Isle's chart (1752) is here exhibited tonight, it is evident that Jeffery was careless, and that the map, which I infer Dall has never seen, is really more valuable than is set forth in his address; otherwise so critical an observer as Dall would not have said: "I suspect this (referring to d'Anville's map of 1753, with Bering island thereon) is the first publication of a cartographic kind on which Bering island is laid down, as the map of the Imperial Academy of Sciences, embodying the geographical results of Bering's voyage to the coast of America, was not engraved until a year later, while de l'Isle's of 1752 does not contain them." You will see that this is an error, for the "I (sle) de Beerig" is plainly inscribed on the map. (This map has been reproduced by photolithography and forms the accompanying plate 21.)

Dall further describes the copy of this map in the following terms :

"Connected with America and north of the Chukchi peninsula is land with an island off it corresponding not badly to Wrangell and Herald islands and marked 'Discovered in 1722.' It is possible that this land is a hypothetical compound of the land reported by the Chukchis east of the strait with that which they knew to be visible in clear weather from Cape Yakan, more or less confused accounts of which had long been current among persons interested in these regions."

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The legend on the original chart indicates that Dall's surmise is correct, for the copy is not only abbreviated, but is in error as to date. On the original it runs: "Grande Terre découverte en 1723 au s'enfeuit les Tzutzy l'orsqu'ils sont poursuivis par les Russes que ne les ont pas encore soumis."

There is another important legend on a very large imaginary island about five degrees of longitude to the east of Bering island. On the northern side of this land the text runs thus: "Terres dont le Capitaine Beering's à en des indices dans son premier voyages en 1728." On the southern edge is the legend: "Cotes vues par Mrs. Tchirikow et de l'Isle en Septembre 1741." Immediately south of the land are two route tracks, with these legends: "Route du Kamtschatka a l'Amerique par le Capitaine Tchirikow et Mr. de l'Isle de la Croyere en Juin et Juillet, 1741," "Retour de l'Amerique au Kamtschatka en Aout et Septembre 1741." The latter route track touches an indentation in the southwestern coast, as though the vessel had entered the bay, which has five mountains in the background.

The legend—"Terres vues par les Russes en 1741 ou le Capitaine Tchirikow perdit sa Chaloupe armée de 10 hommes"—is likewise of interest, as controverting the statement that "De l'Isle's (chart) of 1752 does not contain * * * the geographical results of Bering's voyage to the coast of America." It embodies a large part, but not all, of the discoveries.

6. Buache's memoir and maps entitled: "Considerations géographiques et physiques sur les Nouvelles Découvertes au Nord de la Grande Mer, appelée vulgairement la Mer du Sud; avec des Cartes qui y sont relatives. Par Philippe Buache, Premier Géographe," etc. A Paris M.DCC.LIII [1753], 4°, 158 pp. With my copy there is a separate pamphlet, consisting of 13 maps, folio, with a preface and index, quarto. The preface (4°, two leaves unpagéd) is entitled: "Exposé des Découvertes au Nord de la Grande Mer, etc., etc. Présenté au Roy le 2. Septembre 1753, par Philippe Buache, etc." The index (4°, 4 pp.) runs: "Liste des Cartes concernant les Nouvelles Découvertes au Nord de la Grande Mer, &c. Par Philippe Buache, &c. Janvier, 1755."

These thirteen maps are very interesting. The first and second charts bear particularly on the subject of this paper. The first is entitled: "Carte des Nouvelles Découvertes entre la partie Orient'le de l'Asie et l'Occid'le de l'Amerique avec des Vues sur la Gr'de Terre reconnue par les Russes en 1741 &c., &c. Dressée

par Philippe Buache. Présentée a l'Acad. des Sciences le 9. Aout 1752 et approuvée dans son Assemblée du 6 Septembre suivant."

This map, somewhat fuller in details than that of de l'Isle, shows: "Découvertes des Russes depuis 20 ans." There are route tracks of the first expedition marked: "Route des Russes au N.E. et au N. en 1728 et 1731," and "Retour en 1731." Two route tracks of the later voyage have the legends: "Route de Kamtehatka a l'Amerique en 1741. Retour des Russes au Kamtehatka." Other legends are as follows: "Isle Beering;" "Detroit du Nord" (Bering strait); "Terre déc. en 1723 par les Russes, ou Isle dont le P. Avril a parle" (large land near Wrangell island); "Terres reconnues par les Russes" (American coast in latitude 56 N.); "Côtes vues par les Russes en 1741; Port ou les Russes ont aborde" (fictitious and extensive land east of Bering island, on which are also the following: "Puchochotskes selon Strahlenberg," and "Terre habitée, ou Presqu' Isle, que je suppose joindre les découvertes des Russes avec celles de l'Am'l de Fonte").

The second map, "Carte des Découv'tes de l'Am'al de Fonte avec les Terres vuës et reconnues par les Russes, par Philippe Buache," has other pertinent and interesting legends. In Bering strait appears: "Beering a trouvé au N. et a l'E. de ce parage que la Mer y étoit libre," and immediately eastward on the American coast below the parallel of the arctic circle: "Terre découv. en 1731, et où les Russes ont rencontré un home qui s'est dit habitant d'un gr'd Continent." On the American coast from 55° to 57° north latitude: "Terres déc. en Juill., 1741, et où les Russes ont laisse 10 homes qu' ils n' ont pu rejoindre." Over "Terre habitée," a large land just east of Bering island: "Le Capitaine Beering a trouvé dans ce parage de 50 à 60 deg. les Indices d'une Côte et une gr. Riv. ou il a envoye quelqu's homes qui ne sont revenus."

It is evident that these maps must have been actually published as early as September 2, 1753, the date on which was presented the "Exposé des Découvertes, etc., au Roy," but the charts give no further indication than the legend: "Publiée sous le privilege de l'Acad. R'le. des Sc. du 6 Sept'bre, 1752: à Paris." The actual date of issue may or may not have been earlier than the map of de l'Isle of September 9, 1752.

7. (Possibly most important of all) a letter of an officer of the Russian Navy. This appeared first in Russian, presumably

printed at St. Petersburg in 1752 or 1753; the original Russian I have not seen. It was translated, however, into French and printed at Berlin (not dated) in 1753, under the following title: "Lettre d'un officier de la Marine Russe. A un Seigneur de la Cour concernant la carte des nouvelles découvertes au nord de la mer du Sud et le mémoire qui y sert d'explication. Publiée par M. de l'Isle. à Paris en 1752. Traduit de l'Original Russe, à Berlin, chez Haude et Sperer, Libraires de la Cour et de l'Academie Royale (1753)."

This edition forms part of my library, and is the only copy which I know of in the United States. It is not to be found in the Library of Congress, the Astor Library, the Boston Athenæum, or the Boston Public Library. It is not even in the Royal Library at St. Petersburg, but, as might be anticipated, is in the British Museum. I find it nowhere catalogued in any bibliography of arctic or subarctic works. The French edition was inserted, with some changes, it is believed, in the eighteenth volume of the *Nouvelle Bibliothèque Germanique*.

8. "A letter from a Russian Sea-Officer to a Person of Distinction at the Court of St. Petersburg, containing Remarks on Mr. de l'Isle's Chart and Memoir relative to the New Discoveries North and East from Kamtschatka, together with some Observations on that Letter by Arthur Dobbs, Governor of East Carolina, to which is added Mr. de l'Isle's Explanatory Memoir on his Chart." 8vo, 85 pp., London, 1754.

The "Arthur Dobbs" who published this edition, and who possibly was the translator thereof, is well known as the energetic promoter of the discovery of the "northwest passage," and was personally interested in discovery voyages to Hudson bay. The explanatory memoir of de l'Isle's chart is a translation of the memoir previously mentioned as belonging to the map of 1752, which memoir I have not been able to consult in the original French. It may be added that Dobbs' reproduction of the "Letter from a Russian naval officer" is not accurate, the translation in places being so carelessly or indifferently made that the text cannot be relied on for critical purposes.

This English translation is to be found neither in the Library of Congress, the Boston Public Library, the Boston Athenæum, nor in the Library of the American Geographic Society. It is, however, in the Astor Library, and a second copy at one time belonged to the library of Mr. J. C. Brevoort.

9. "Mappe Monde. Carte Universelle de la Terre. Par J. B. Nolin, Geographe." 1755, 20½ x 27 inches. On this appear the legends: "I. de Beering; Detroit de Nord; Terres découvertes par les Russes [sic] en 1741; Terres veues en 1741."

It is quite possible that this is the first map of the world on which Bering island was charted.

10. John Christopher Adelung's very interesting history of sea voyages for the discovery of a "northeast passage," which was published in quarto form under the following title: "Geschichte der Schiffahrten und Versuche welche zur Entdeckung des Nordöstlichen Weges nach Japan und China von verschiedenen Nationen unternommen worden. Zum Behufe der Erdbeschreibung und Naturgeschichte dieser Gegenden entworfen von Johann Christoph Adelung, Herzoglich Sachsischen Rath Halle bey Johann Justinus Gebauer, 1768."

11. Notice des Ouvrages de M. d'Anville. 8°, Paris, An. X [1802], 120 pp. By Barbic du Bocage.

In addition to these and other works from my own collection, I have consulted at the library of the United States Naval Observatory, in this city, "Histoire de l'Academie Royale des Sciences, Année 1750," Paris, 1754, and the same, "Année 1754," Paris, 1757, which contain articles on de l'Isle's manuscript maps of 1731 and 1752, the latter being substantially identical with the published map of 1752.

From Dall's review we learn that Lauridsen is responsible for the statement that the discoveries of Bering in his first voyage were shown on a chart made at Moscow in 1731, but no authority is given as to the cartographer. Later I shall adduce evidence to confirm Dall's opinion that the Moscow map was merely a copy, such as were distributed to personages of importance or to those connected with the expedition. It is further susceptible of, as I think, tolerably satisfactory proof that the outlines of Kamshatka, with fairly correct meridians of longitude, were made public in a chart by de l'Isle not in 1731, but the year following, 1732, and it is likely that the lost map of that year was substantially reproduced in the chart of 1752, which I have the pleasure of now presenting for your examination.

De l'Isle presented this map to the Academy of Sciences of Paris on April 8, 1750. The circumstances connected with the

presentation have been drawn from the official records of the Royal Academy of Sciences, and are as follows:*

Cette année (1750) M. de l'Isle lut à l'Assemblée publique de l'Académie, un Mémoire sur les Nouvelles Découvertes au nord de la mer du Sud ; et presenta en meme temps une Carte que M. Buache avoit dressée sur ses Mémoires, et qui representoit ces Découvertes avec toute la partie du Globe terrestre, à laquelle elles appartiennent. Ces Ouvrages, alors manuscrit, furent depuis publiés en 1752, M. Buache presenta dans cette meme année la première partie de ses Considérations géographiques sur le meme sujet, avec les Cartes qui y étoient relatives.†

"Muni de ces premières connoissances [referring to the discoveries of 1729-1739] M. de l'Isle traça une carte qui representoit l'extremite orientale de l'Asie, avec la partie opposée de l'Amérique septentrionale qui y répond, afin de faire voir aisément ce qui restoit à découvrir, et il dressa un Mémoire dans lequel il exposoit la manière qu'il jugeoit la plus avantageuse pour faire ces découvertes."‡

"Mais les vaisseaux Russes qui avoient été envoyés pour les découvertes dont nous venons de parler (1731-1741), n'étant pas encore revenus lorsqu'elle lui fut envoyé il fut envoyé à l'extremite l'examen après son retour en France, qui étoit assez prochain. A son arrivée, il communiqua ses vues et cette relation à M. Buache ; celui-ci, qui par la," etc., etc.§

"Cette Mémoire [de l'Isle, 1750] étoit accompagnée d'une carte qui étoit comme l'esquisse du système géographique de M. de l'Isle sur toute partie."*

It has been pointed out by several authorities that some of M. de l'Isle's statements in his memoir of 1752 are to be received with caution, especially his elaborate endeavors to impress the Paris Academy with the belief that the discoveries of Bering subsequent to the first voyage were the result of his (de l'Isle's) own carefully considered instructions. In this connection Adeling says :

"De l'Isle, in his Explication de la carte des nouvelles découvertes au Nord [1752], traces out his proposed route quite differently [referring to de l'Isle's previous statements in his report to the St. Petersburg Academy in 1732], somewhat as if it had been outlined in view of accomplished facts."

* Extracts from *Histoire de l'Académie Royale des Sciences, Année MDCCL (1750)*, 4°, Paris, 1754; and the same, *Année 1753*, 4°, Paris, 1757.

† *Loc. cit.*, "Année MDCCL," p. 142

‡ *Ibid.*, p. 151.

§ *Ibid.*, p. 145.

* *Loc. cit.*, "Année 1753," p. 263.

It behooves us, then, to inquire carefully into the authenticity of the alleged map of de l'Isle of 1731, since if he antedated his opinions as to the route he might also have antedated his map. Fortunately we do not have to depend only on de l'Isle's own statement, either in 1750 before the Academy of Sciences at Paris, or as published in 1738 at St. Petersburg and printed at the printing office of the Royal Academy; for we also have extraneous and convincing evidence, even from sources critically hostile to the French astronomer.

M. de l'Isle, in his *Mémoires sur les Nouvelles découvertes au Nord de la mer du Sud*, Paris, 1752, says:

"After I had, near twenty years ago, got these first informations of the longitude of Kamshatka by means of Captain Bering's map and journal, I made use of them in constructing the map, representing the eastern extremity of Asia, with the opposite coast of North America, in order to show at once what still remains for discovery between two large parts of the world.

"This map I had the honor of presenting to the Empress Anne and the Senate, in order to animate the Russians to undertake these discoveries, and it took effect, this princess ordering a second voyage to be made according to the plan which I had drawn up for it."

"Two maps," he adds, were presented to the Academy in Paris, "one being a copy of the map which I had drawn at St. Petersburg, 1731, on Captain Bering's first voyage, and had the honor of presenting to the Empress Anne and the Senate, with a manuscript memoir explaining its use and construction." The other map (from which the lithograph before you was lately reproduced) was, according to de l'Isle, only changed by adding the later discoveries of Bering and his lieutenants.

De l'Isle further says of this chart:

"The second manuscript map which I laid before the Academy at Paris was in all respects like the former, only with the advantages of the new discoveries made since 1731."

Ph. Buache, the French geographer, made for de l'Isle a reduced copy of the second chart, and it is supposed that the map before you is a substantial reproduction of that copy.

In the preface to de l'Isle's scattered essays, 1738, St. Petersburg, page 2, we find:

"Aiant comparé la situation du Kamshatka et des pais voisins, avec celle de la Chine, du royaume de Corée, du Japon, et de la terre d'Yeco, qui m'étoit connue d'ailleurs, je me suis fait un système, & j'ai dressé l'an

1731, une carte de cette extremité orientale de l'Asie. J'ai marque aussi sur cette carte les dernières terres connues de l'Amérique, les plus voisines de cette partie septentrionale de l'Asie, afin de faire voir ce qui restoit encore d'inconnu entre-deux. On trouvera dans ce recueil une reduction de cette carte, avec le Mémoire que j'ai dressé dans ce tems-la, & lu a l'Academie, dans lequel je rends raison de la construction de cette carte."

Only one volume of de l'Isle's essays appeared, so that the map and memoir promised in the introduction were never, so far as can be learned, published in their original form. The statements made by de l'Isle, however, unless definitely refuted, should be given full credit, seeing that the work was published by the Academy of Sciences at St. Petersburg, to which the map and memoir were presented, as is claimed, only seven years earlier. A doubt does, however, exist as to the date of the map made by de l'Isle. On this point Adelung, in his "History of Northeastern Voyages," Halle, 1768, page 569, evidently quoting from Müller, says:

"On the 17th of April, 1732, the order was, therefore, sent from the privy Cabinet to the Senate, which thereupon inquired of the Academy of Sciences of St. Petersburg what and how much had as yet been found out about Kamschatka, the surrounding countries and waters. The Academy confided the making of the report to Mr. Delisle, who prepared a chart upon which Kamschatka, Jeso, according to the description of the crew upon the Castricom, the Staten island, Company island, and the coast of Gama were designated. This chart was supplemented by a memoir in which he described the discoveries already made and suggested various routes for making new ones. He expressed himself in regard to those routes in the following manner: 'If one have attained the northern boundary of Asia, and at the same time the eastern limits, as far as Captain Bering went on his first voyage, one cannot fail to arrive in America, and might even choose the route, either northeast or southeast, whichever he prefers, as he would have, at most, only 600 miles to pass over. 2. Or, without venturing so far, it would perhaps be better and more comfortable to sail from the east coast of Kamschatka, go directly east, to look for the neighboring country which Bering found traces of in his first voyage. 3. Finally, he thought that if they should sail southeast from Kamschatka they would perhaps more speedily and more certainly discover the country seen by Juan de Gama.'

Can the inconsistency between the dates, as given by Müller and Adelung on the one hand, and by de l'Isle on the other, be reconciled, or is it apparent rather than real? As Bering, according to the Russian marine officer (Waxel?) returned to St. Petersburg on March 1, 1730, it is reasonable to suppose that de l'Isle,

whose duties were those of a cartographer, had finished within the next year and a half his reproduction of Bering's working chart. The fact that the order of inquiry about the results of the voyage did not leave the privy council until April 17, 1732, does not necessarily indicate that the map at least, if not the memoir, was not already prepared, even if not in possession of the Academy of Sciences. It appears probable that the map may have been drawn by de l'Isle in 1731, but it is quite certain that it was not made public until 1732.

Lauridsen speaks of a map in Moscow in 1731, and, as it is evident from "Lettre d'un" that there was no difficulty in persons of influence procuring copies from the Senate, it is likely that the Moscow chart was a copy of the map of de l'Isle, and that the date of 1731 is correct; but this theory must rest on Lauridsen producing evidence that such a map existed in Moscow in 1731.

The Russian officer speaks with authority as to the map of 1732. Commenting on de l'Isle's account of the circumstances under which he compiled the map of 1732, he continues as follows:

"The Empress Anne having directed her Senate to give instructions to M. Bering for the second voyage, that body believed that it could not act with success unless it obtained from the Academy the fullest information relative to the situation of the lands and seas to be traversed. Therefore the Academy was so ordered by the Senate, which enjoined on M. de l'Isle the construction of the map of which I speak, and, for a clearer understanding, an explanatory memoir; which being done, both map and memoir were presented to the Academy by the Senate. Consequently, there is no reason to doubt that, far from exciting the Russians to new discoveries, far from being the cause of Bering's second voyage, M. de l'Isle only worked under specific orders. It is quite another question whether or not the memoir contributed to the success of the expedition, which I will discuss later. However that may be, the Senate gave a copy of it, as well as of the map, to M. Bering. I took a second copy of the memoir, which enabled me to compare it with what M. de l'Isle has now said to us of it in his later memoir of Paris."

These and other statements confirm those of de l'Isle as to the date of the map, in which year d'Anville engraved it (1732, or 1731 at the earliest), and likewise indicate that copies of both map and memoir were obtainable without great difficulty.

An interesting note as to the authenticity and origin of the

chart of d'Anville, 1737, appears in the narrative of Adelung, who speaks with a certain air of authority. He says :

"These Beering maps were, after the captain's return, sent from Russia to the King of Poland, who presented them to Mr. du Halde or, rather, to Mr. d'Anville, who made the charts for his work. Du Halde is therefore very correctly informed when he, in the *Mémoires de Trevoux* (737 pages, 2,389 f.) considers these charts questionable and imagines that they were merely made by d'Anville from Beering's journal."

But further evidence from an unquestionable source is available as to date. The charts in du Halde's "China" were engraved between the years 1729 and 1734, and all but the general maps were completed prior to 1733. The date 1732 is assigned by d'Anville's colleague to the map of Bering's journey. Of these maps it is further said :

"They form what is commonly known as d'Anville's Atlas of China. Nevertheless this geographer did not participate equally in the production of all. The detailed maps (of which the Bering map is one) were furnished by the Jesuits and he only supervised the engraving, but the general charts were entirely the work of d'Anville, who reconstructed and amplified them from all possible sources. They were reproduced at Hague under the title 'New Atlas of China,' etc., by M. d'Anville."

These statements of d'Anville's colleague, M. Barbic du Bocage, are thus verified by du Halde, page lxix :

"Pour les Cartes Générales, nous y avons peu touché & celle du Voyage du Capitaine Beerings paroît sans le moindre changement."

In the Russian atlas, 1745, the explanatory text regarding map 19, whereon appears the extreme northeastern coast of Siberia and the greater part of Kamshatka, runs as follows :

"We have determined the location of these provinces in part by astronomical observations which have been made there, and in part upon certain geographical and hydrographic maps which have been transmitted to us."

So far as Kamshatka and the Bering strait regions go, it is reasonable to believe that this chart, since it was published by the Royal Academy of Sciences, is substantially a reproduction of the map transmitted to the Academy by de l'Isle in 1732, especially as this geographer was employed for about thirteen years in amassing data for the atlas in question.

The writer has very carefully compared the chart of Kamshatka and adjoining regions as published in d'Anville's atlas of 1736, in the Russian atlas of 1745, and in the de l'Isle chart of 1752. From comparisons he is led to believe that these maps have substantially the same basis—that is, the chart prepared by de l'Isle in 1732 for the Academy of Sciences, St. Petersburg. In this connection the criticism of the Russian officer is significant. He says: "I will now finish with a general observation about the part of Siberia that we see on M. de l'Isle's chart (1752). It is simply a copy of the Russian atlas (1745), without even corrections of the errors of drawing and writing which have crept into that work." Elsewhere he adds: "We can correct the error of M. de l'Isle, who places Bering island at 54 degrees, only a short distance from Avatscha, whereas it is on the 56th parallel, 60 miles off Avatscha, and 40 Dutch miles from the mouth of the Kamschatka river."

It is worthy of note that on Bellin's map of 1749(?) Bering island is crossed by the 56th parallel of latitude, and that along the southern edge of the Arctic ocean is a route track, marked "Voyage fait par Mer en 1648 par 3 vaisseaux Russiens dont un est parvenu a la Kamtschatka." On de l'Isle's chart of 1752 also appears the route of 1648, but Bering island is in latitude 54°. As to the position of Bering isle, the truth, as the Wise Man tells us is oft the case, abides between the two, as the 55th parallel intersects the land in question. At Cape Shelagskoi, d'Anville, 1737, the Russian atlas of 1745 and the de l'Isle of 1752 agree in charting four islands northeast of the cape instead of two islands to the west. This indicates a common origin to the charts, and where else can it be ascribed than to the de l'Isle map of 1732? The Russian officer, however, gives a clue as to the date when work on the map was commenced. He says:

"At that time I visited M. de l'Isle. I was a witness of his geographical labors as far as they had new discoveries for their object. I acted as interpreter to M. Bering in the conversations which he had with him; and I can assert positively that when M. de l'Isle began that chart the second expedition was already ordered, and Captain Bering, knowing what was still wanting to his discoveries, offered to continue them and his lieutenants with him, and they received promotion in consequence."

Lauridsen says:

"On January 5, 1732, the Senate gave him leave of absence to go to St. Petersburg. * * * Almost simultaneously he was promoted, in regular

succession, to the position of captain-commander in the Russian fleet, the next position below that of rear-admiral."

This indicates that the expedition was decided on at least as early as January 5, 1732; possibly earlier. Fortunately we are not left to inference, for elsewhere the Russian officer says:

"Mr. de l'Isle 'throws discredit on our discoveries by leaving on his chart the fictitious land of Gama, which, in order to avoid conflicting with our accounts, he places (in 1752) a little more to the west and south than he did on his chart of 1732.'"

This definitely fixes the year in which de l'Isle presented the map to the Senate.

We learn, however, from Lauridsen that "as early as April 17 (1732) the Empress ordered that Bering's proposition should be executed, and charged the Senate to take the necessary steps for that purpose. * * * On May 2 it [*i. e.*, the Senate] promulgated two ukases, in which it declared the objects of the expedition and sought to indicate the necessary means." It is very improbable that, in the case of so dilatory a man as de l'Isle, this chart could have been elaborated and drawn, the memoir written, a report made by the Academy to the Senate, and action be taken in the fifteen days which elapsed between the order for the chart and Bering's instructions. It is possible that the chart was drawn at the end of 1731, and that de l'Isle, for obvious reasons, gave it the earliest possible date.

In giving an account of Bering's provisions, as Dall says, every historian has followed a mutilated, if not garbled, paragraph from Bering's original report. The excerpts from Brooke's translation of du Halde, which was followed in Campbell's edition of Harris' Voyages, are as follows:

"The provisions consisted of carrots for want of corn [= grain or wheat], the fat of fish, uncurd, served instead of butter, and salt fish supplied the place of all other meats."

"Fish oil was his butter and dried fish his beef and pork. Salt he was obliged to get from the sea; * * * he distilled spirits from 'sweet straw.'"

It appears from Bering's own journal, as well as from du Halde's account, that in 1727 Bering ordered one of his officers to endeavor to "deliver to the command at Kamschatka some part of the provisions, iron, and tar." Bering himself said that he was obliged to use tar made from the native spruce, "since

the tar which we should have brought with us had not arrived." This is confirmed by the additional note in du Halde, which says that the provisions, iron, pitch, and tar did not arrive till 1728, conveying the inference that it came too late to be of service. Bering appears to have had, on July 3, 1727, 2,300 poods of flour, equal to about 8,300 pounds, which would be less than a year's supply for his entire party. I cannot agree with Dall that Bering had plenty of flour or meal and meat.

I have said "From Bering's own report," because it seems incredible that du Halde did not have a transcript of Bering's report, since his narrative (du Halde's) follows almost word for word Dall's translation. It is not surprising that different transcripts should differ slightly on unimportant matters.

However this may be, it is evident that Brooke's translation of du Halde is careless. For instance, in Brooke's translation (edition London, 1736) of du Halde, on page 430, the number of Bering's party should be 33 instead of 30, and on page 440, where the voyage from Ochotsk to Takutski is given as from July 23 to October 2, the first-named date should be July 29.

Dall doubts that "carrots" were of Bering's provisions. Brooke omits the italicized words of du Halde's narrative (p. 567, la Haye, 1736): "*Les provisions consistoient en carottes et en racines.*" As indicated by context, the roots were radishes and turnips. The word "carottes" is explained by a passage in Grieve's Kamshatka as follows: "The morkovai poushki, or carrot bunches, are so called because they are like carrots in their leaf as well as in taste. They likewise eat this green in the spring, but they oftener sour it like sour croust or make a liquor with it." Doubtless Bering took these "carrot bunches" with him.

Another question which has engaged my attention is that concerning the lunar eclipses which Bering or his party is said to have observed in the winter 1728-9. Dall says: "In none of the published reports of the expedition is any mention made by Bering or his officers of the occurrence or observation of an eclipse. * * * However, Middendorf states (Sib. Reise, iv. I, p. 56) that Bering and his lieutenants in the years 1728 and 1729 observed in Kamtschatka two eclipses of the moon, by which they corrected the longitude. He gives," says Dall, "no authority for this statement, and it is probable that an eclipse observed at Ilimsk, in middle Siberia, by Chirikoff is thus erroneously referred

to." Mr. Marcus Baker, in a paper appended to Dall's account, makes it evident that such eclipses, if any, were those of February 25 (local calendar), 1728, or February 24, 1729.

My own investigations confirm the statements of Middendorf, and in support of this I refer to de l'Isle and to the author of the "Letter." In this connection, however, we have the clear and definite statements of de l'Isle, both in his essays of 1738 at St. Petersburg and his memoir of 1752 at Paris. These statements are fully confirmed by the evidence of the Russian marine officer, who certainly served with Bering in his later expeditions if not in the first, and whose familiarity with all the records and papers should have enabled him definitely to contradict de l'Isle on the main question instead of correcting him in details. In his St. Petersburg memoirs of 1738 (page 10) de l'Isle writes:

"On verra a cette occasion la situation du Kamtchatka de terminée par deux eclipses de Lune, que M. le Capitaine Bering & ses gens y sont observées dans leur premier voyage [the expedition 1725-'30], & dont j'ai rendu compte a l'Academie aussi-tot que ces observations m'ont ete communiquées."

In the paper of Paris, 1752 ("Nouvelles découvertes au Nord de la Mer du Sud") de l'Isle says on this point:

"Captain Beering and his lieutenant likewise took observations at Kamchatka of two eclipses of the moon in the years 1728 and 1729, which helped me to chart the longitude of that eastern extremity of Asia with all the precision which the nature of these observations, made by seamen and with their own instruments, would admit of; but these first determinations have been since confirmed by observations on Jupiter's satellites, taken in that place with the utmost accuracy by my brother and some Russians conversant in this kind of observations and who were provided with the best of instruments."

It appeared to me possible that the report on the eclipses of the moon made by de l'Isle to the St. Petersburg Academy of Sciences might be traced up among the archives of that society. In searching for information on this point it was learned from Mr. O. Fassig, librarian of the Signal Office, that among the unpublished manuscripts in the Pulkova library, St. Petersburg, were a number by de l'Isle. A list of the manuscripts of M. de l'Isle was compiled and published in 1844 by the distinguished astronomer O. Struve, and among the number is one entitled: "Observations pour la longitude du Kamchat, d'où se conclut aussi de Tobolsk. 1729, MSS."

It was reasonable, in view of de l'Isle's statements in 1738, to suppose that this is the report made to the Academy by him as soon as the observations were furnished him. I had hoped to present with this sketch definite information on this point, since a kinsman of the collator of the manuscripts (I refer to the very distinguished representative of Russia to the United States, M. de Struve) most courteously offered his valuable mediation in the matter. Unfortunately, I have as yet no further information, but I expect a communication as to the contents of the MSS. at an early day.

Criticising the memoir of de l'Isle of 1752, the Russian officer ridicules the author for speaking of Kamshatka as a town, but he adds :*

"It is certain likewise that M. Bering and his lieutenant, M. Tschirikow [quoting from de l'Isle's Memoir of 1752], had, in the years 1728 and 1729, observed at Kamshatka two eclipses of the moon; but that by these observations M. de l'Isle was enabled to determine the longitude of this most eastern part of Asia, with such precision that the same had been confirmed in the second expedition, by precise observations of the satellites of Jupiter is what I cannot well conceive. Mr. de l'Isle himself intimates that Messieurs Bering and Tschirikow were not provided with astronomical instruments. They observed both these eclipses by the help, not of pendulums, but of their watches, without being able to know whether they went right or wrong; which makes it almost incredible that a determination based on these two eclipses should exactly agree with that deduced from the observations of Jupiter's satellites."

The officer, from his own account, served with Bering. In the introduction to "Une Lettre" he says:

"The orders of your Excellency [to whom the letter was addressed as written by his orders] will be complied with by me with more than one inspiring motive, and I shall not dwell on my unfitness, although I could find excellent pretexts for such an excuse, inasmuch as many of greater experience and equal application participated with me in the discoveries which resulted from the two voyages, called by us the Kamtschatkan expeditions. The only grounds on which preference could be shown me over them arise from my being charged, after my return from America, with the comparison of the journals of the various vessels together and with whatever was elsewhere to be found relative to lands situated in the South Sea, in order to therefrom construct a map which should accurately represent them all."

* "Une Lettre," Berlin, p. 19.

This officer, then, should be the very best authority on this question, especially as he gives details, is always exact in his dates, and sets no value on the observations. Whether or not such observations of lunar eclipses took place, these extracts tend to confirm Dall's opinion that they served no purpose in determining the longitude of Kamshatka.

The letter and its author are worth some attention at our hands. As has been said, it was published anonymously, and I do not know that its authorship has ever been traced. It appears from the letter that the writer was an officer of the Russian navy; that he was a Russian; that he was on familiar terms with both Bering and de l'Isle; that he acted as interpreter between them in 1730-1731; that he was with Bering in his last voyage to America, and was one of the ship-wrecked mariners on Bering island, and that on his return to St. Petersburg he was charged with the compilations from the various ship journals. As the naval officer states he was with Bering on Bering island, it is evident that it must have been either Swen Waxel, Sophron Chitrow, or Steller, the well-known scientific professor serving with Bering's expedition. It could not have been Steller, since the professor was a German, and moreover he died in November, 1746, prior to the date of the letter. It is improbable that it was Chitrow, who was originally in a subordinate position as a master-of-fleet, but while serving in Kamshatka and prior to Bering's second voyage was made a lieutenant. It is not likely that a subordinate of Chitrow's position should have been so situated in St. Petersburg as to have served as an interpreter between Bering and de l'Isle. It is therefore more than probable that Lieutenant Swen Waxel was the author of the letter. In further confirmation, this officer says that he is charged with the preparation of a chart out of the material furnished by the maps and journals of the separate vessels. As we know from other sources, Waxel later made a chart of the Kamshatka region.

Waxel displayed great energy and excellent judgment in conducting affairs on Bering island, both before and after Bering's death, and it is gratifying to note his intellectual discrimination in dealing with de l'Isle's fictitious account of a journey in America said to have been made by one Admiral de Fonte. Waxel skilfully dissects this geographical invention, clearly proving its inconsistencies, while geographical writers in England were engaged years later in endeavoring to prove its truthfulness.

It is significant that although Waxel omits any reference to it, the following paragraph, which is evidently intended to be exculpatory of Bering's turning back at the most northerly point of his first voyage, forms part of Bering's report as translated by Dall: "Neither from the Chukchi coast nor to the eastward could any extension of the land be observed." This very important sentence does not appear in du Halde's account, and evidently was not in the copy which was furnished him. Possibly the person who furnished the copy to du Halde omitted it. Elsewhere Waxel adds:

"I say nothing here which I have not repeatedly heard M. Bering say. I also saw his instructions."

This gives value to his statements in reference to Bering's efforts to find land east of Avatscha bay, whereof Waxel quotes de l'Isle as saying:

"On his return to Kamtschatka (in 1729) M. Bering learned that there was a land to the east, which could be seen in clear, fine weather. He attempted to go thither, after having repaired the damage his vessel had suffered in a storm. The second attempt was fruitless, for after sailing about forty leagues to the east without seeing land, he was assailed by a violent tempest and a contrary wind, which quickly drove him back to the port whence he had emerged."

In criticism Waxel adds:

"Would not this narrative lead one to believe that the second attempt of M. Bering had been made immediately after the first voyage [in 1729]? However, it was entirely otherwise: Before making this journey M. Bering wintered at Kamtschatka, set sail only on June 5, 1729, and, *without intending to return to the port which he was quitting*, doubled the southern point of Kamtschatka and went straight to the mouth of the river Bolschaia-Reka and thence to Ochozk."

He further says:

"Perhaps it may appear strange that M. Bering during this voyage did not fall in with the island (Bering island) whereon he was shipwrecked during his second expedition; but the isle might have been hidden by fogs, which are very common in that sea."

Waxel's account of the second voyage is worth translating, being the plain tale of a participant, who is as modest as he is truthful, for Waxel nowhere mentions his own name nor the

efficient service he rendered first to his chief and later to his shipwrecked comrades. He writes in "Une Lettre" as follows:

"Let us now come to the details of the second expedition, which M. de P'Isle pretends owes its origin to a map of *his* and was undertaken according to a memoir made by himself. 'I had the honor,' he says, 'in 1731 to present this chart to the Empress Anne and to the Senate, in order to stimulate the Russians to explorations of what still remained to be discovered, and it had its effect.' Was it time or age which caused M. de P'Isle to commit this error? Could he have forgotten the orders which led him to make the chart in question? Had he remembered it, perhaps he would not have said that he presented the chart to the Empress, and still less that he made it in order to excite the Russians to new discoveries. At that time I visited M. de P'Isle; I was a witness of his geographical labors, as far as they had new discoveries for their object; I acted as interpreter to M. Bering in the conversations which he had with him; and I can assert positively that when M. de P'Isle began that chart the second expedition was already ordered, and Captain Bering, knowing what was still wanting to his discoveries, offered to continue them and his lieutenants with him; and they each received promotion in consequence.

"It is therefore true that M. de P'Isle's work must be attributed to the orders of his superiors; and I remember that the Empress Anne having commissioned her secretary to give the necessary instructions to M. Bering for his new voyage, the latter did not think he could carry it on successfully without getting from the Academy all the information possible concerning the countries and waters where he was to navigate. The Academy was therefore called upon by the Senate, and it ordered M. de P'Isle to compile the chart of which I speak, and in order that it might be better understood, to explain it in a memoir; which having been done, the chart and the memoir were presented to the Senate by the Academy; so that there can be no possible doubt that, so far from having stimulated the Russians to new discoveries, so far from having occasioned the new voyage of M. Bering, M. de P'Isle only worked according to the orders he had received. There arises another question, as to whether the memoir caused the success of the expedition, which I will treat later on. However that may be, the Senate gave a copy of it to M. Bering as well as of the chart. I took a second copy, which enables me to compare it with what M. de P'Isle tells us about it in his last memoir from Paris.

"He pretends to have proposed three different routes to be followed in order to discover what was still unknown. The first, to sail straight to Japan, pass Yeco, or rather the straits which separate it from the island of the States and the land of the Company, to discover what is to the north of Yeco and search for the passage between that country and the coast of eastern Tartary. This is what is called giving advice after the event. In the original memoir there is not a word said about any such researches. M. de P'Isle contents himself with proposing three different routes for finding the countries lying near to Kamshutka on the east.

The first two, we must admit, agree well enough with the second and third routes mentioned in the Paris memoir. They are expressed in these terms:

"1. 'If one advances to the most northern extremity of Asia, and at the same time the most eastern point reached by Captain Bering (wrong supposition, as I have already remarked), one cannot fail to reach America, no matter what route one takes between the northeast and southeast, at a distance of not more than 600 leagues (great error in estimating the distance of the opposite lands of Asia and America, since they are only separated in the north by a narrow strait which widens as it goes south).

"2. Without going so far, it would perhaps be easier to start from the eastern coast of Kamshatka, sail directly east and reconnoitre the neighboring land, of which M. Bering discovered indications on his first voyage.'

"In regard to the third route, M. de l'Isle conjectures as follows:

"3. 'Perhaps the countries seen by Don Juan de Gama might be found more speedily and with more certitude by seeking them to the southeast of Kamshatka;' the outcome of which project showed him his mistake, which is apparently the reason that induced him to change it to that of the route by Japan and Yeco.

"Nothing is so imperfect in detail, and withal so dry, as the recital of M. Bering's voyage with which M. de l'Isle regales us. He makes him start in 1741 to look to the east of Kamshatka for the land which he had seen indications of in his first voyage. 'He did not go very far,' he says, 'for, being assailed by a violent storm during thick weather, he could not remain at sea, and brought up on a desert island in latitude 54°, only a short distance from the Port of Avatcha from whence he had sailed.'

"M. Bering, then, did nothing but fail, and he did so soon after leaving port. I must therefore supplement the meagreness of M. de l'Isle's relation by giving an account of the voyage of M. Bering and the other officers, chiefs of these expeditions, which will be so much the more easy as I took part in them and as I can, besides, refer to the charts and journals of each vessel as proofs of my correctness.

"The Captain Commanding Bering and Captains Spangenberg and Tschirikow, with several other naval officers, left St. Petersburg in the spring of 1733. They waited at Yakouzk and Ochozk until the vessels being built at this latter place for their expedition were completed, and when all was ready for the departure of M. de Spangenberg he was dispatched first, according to the orders of the Senate. He started, then, from Ochozk in the month of June, 1738, having three vessels under his command, to which he added a large covered row-boat of 24 oars, which he caused to be constructed at Bolscherezkoï Ostrog in Kamshatka, where he wintered. This boat was to be used to go into the narrow straits between the islands that they might find and where the ships could not go. In the summer of 1739 he went to Japan, the long chain of islands situated between Japan and Kamshatka serving to guide him. He landed at two different places in Japan and was received with great civility by the people of the country; but he never went to Matsmai, the principal place

on the island of Yeco, as M. de l'Isle erroneously states. He thought he had sufficiently complied with his instructions without doing so, and returning to Ochozk, passed the winter at Yakouzsk. As soon as a detailed account of this voyage was seen in St. Petersburg they concluded by the route which M. Spangenberg had followed that he must have passed near the coast of Corea, and he was therefore ordered to make a second voyage in order to confirm the first. He started in 1741 and 1742, but his ship, built hastily and of unseasoned wood, leaked and obliged him to return.

"MM. Bering and Tschirikow left Ochozk the 4th of September, 1740. They both had the same destination; the second was to follow the track of the first. They only took different vessels so as to be able to assist each other more efficaciously in case of any accident. Without entering the Rolschaia-Reka river, as is customary in coming from Ochozk, they immediately rounded the southern point of Kamshatka and anchored at Avatscha, or port of St. Peter and St. Paul, as they called it. While wintering in these places, they made all their preparations for commencing in spring their principal voyage, which was to have America as its object. Owing, however, to the uncertainty as to the route which they were to follow, M. Bering assembled a naval council on the 4th of May, 1741, and it was resolved to endeavor first to discover the land of Don Juan de Gama, a fatal resolution which was the cause of all of our disasters. The 4th June we put to sea. M. Bering had on his vessel, sent by the Academy, an adjutant, M. Steller, physician by profession, but above all well versed in all that pertained to natural history. M. de la Croycere was with M. Tschirikow. Although M. Bering and M. Tschirikow were not to separate, according to their instructions, they could not avoid it, for eight days after sailing they were separated by storms and fogs. The search for the pretended land of Gama caused them to direct their course southeast; they continued to sail in that direction as far as the 46th degree without, however, finding the slightest vestige of it. They then changed their course to the northeast and both reached the coast of America, but in different places and without knowing of the whereabouts of the other. M. Bering and we who accompanied him saw land for the first time after being six weeks at sea. We then calculated that we were about five hundred Dutch leagues from Avatscha. We provided ourselves with fresh water. We saw indications of inhabitants, but could perceive no one. After being at anchor three days, M. Bering consulted with his officers, and it was resolved to return. The 21st July we weighed anchor before sunrise. There was nothing to do but to follow the coast, which stretched westward; but navigation was seriously embarrassed by frequent islands, and when we tried to put to sea we were met by storms and contrary winds, which caused us new delays every day. In order to procure fresh water, we returned towards the coast, from which we had kept as far as possible. Soon it was in sight, seeming about ten miles distant. We anchored between the islands, and the one where we landed was Schoumagin-Ostrow. The water was good, but although taken from a lake, there was, nevertheless, some sea water in it brought by the tide, which sometimes inundated the island. Afterwards

we felt disastrous effects from its use, in sickness and the loss of several of our men, who died. We tried in vain during three or four days to discover some natives of the country, whose fires we could see at night on the coast. The 4th of September these savages finally came, of themselves, in little canoes, and, having announced their arrival to us by a loud cry, they presented us with their calumets, in sign of peace. These calumets were sticks with the wings of falcons attached to the end. We understood from their gestures that they were inviting us to come on land in order to furnish us with provisions and fresh water. We wished to profit by the opportunity, and some of us ventured to follow them; but soon, however, misunderstandings arose and all communication was broken off.

"The 6th of September, after having at first had a tolerably good wind for the voyage, we began to find that as we advanced the obstacles were increasing, nothing but coasts and islands on every side. M. Bering wished to get away from them by sailing more southwards, and, in truth, for several days the sea appeared much more free. Our joy, however, was of short duration. The 24th of September, in latitude 54 degrees, we came upon coasts bordered with a number of islands, and at the same time a violent tempest arose, which lasted seventeen days and sent us back a distance of eighty miles. An old pilot acknowledged that during the fifty years that he had followed the sea he had never seen such a storm. We should then stop calling this ocean "Pacific." This name may, perhaps, be suitable to it in the tropics, but certainly is wrongly given to it here. The weather became calm again, but our provisions were by this time considerably diminished and there was only about a third of our crew who remained well and serviceable after all the hardships to which they had been exposed. There was still more than half of our way to make, counting from the extreme point of our voyage in the East to Avatscha. In view of these facts, many of us were of opinion that it would be better to winter somewhere in America, rather than run the risk of encountering new dangers worse, perhaps, than those we had just escaped; and these counsels came near prevailing over those who were of opinion that we should make a supreme effort to reach Avatscha, and that it would be time to think of seeking another refuge when we had lost all hope of succeeding in so doing. The month of October, however, was passed as fruitlessly as the preceding ones. The 30th of that month we came upon two islands, which seemed to us to bear some resemblance to the first two of those islands which stretch from the southern extremity of Kamshatka to Japan. Thereupon we directed our course northwards, and the 4th November, having observed the latitude, we found that we were under the 56th parallel. The 5th, however, finished our voyage. Wishing to sail to the west, we struck upon a desert island, where we had a good prospect of finishing our lives. Our vessel went to pieces upon one of those banks with which the island is surrounded, and we were not long in seeking land, which we fortunately reached with everything which we thought we should need. By a special dispensation of Providence, the winds and waves threw the remains of our vessel on shore; we gathered them to-

gether to try, with the aid of God, to put ourselves in a position to leave this sorry dwelling. The island where we now found ourselves was destitute of trees. We were, therefore, obliged to depend upon the wood that the sea brought us to build our cabins and warm ourselves. We gave to this desert place the name of Bering island, in honor of the chief of our expedition, and it was there that he died, on the 8th of December, of grief and sorrow at having to give up all hope of returning to Kamshatka. He refused to eat or drink, and disclaimed the shelter of our cabins; his advanced age could not rally under such a disaster. We young men kept our courage up, resisted with firmness all discouragement, made it a duty to still enjoy life and to make as much as we could out of our prison home. Before our arrival, Bering island was the refuge only of the inhabitants of the sea, who came there to breathe the air and deposit their young. We were, therefore, able at first to observe these creatures very closely without their taking fright. It was only after having seen several of their number fall before our guns that they fled at our approach. We killed a great number of them, as much to furnish us with food as for their skins. It was by these valuable spoils, splendid castor skins, that we were repaid in some measure for our sufferings.

"At the approach of spring the following year we built of the remains of our vessel, as we had intended, a large covered boat, furnished with anchors and sails and able to live at sea if not exposed to storms. In this boat we confided ourselves to the sea, trusting in Providence, the 17th of August, 1742, and after nine days at sea, with beautiful calm weather, we arrived safely at Avatscha on the 26th, giving thanks to the Almighty, who had delivered us from such great dangers, and imbued us with gratitude such as time can never efface.

"From this account we can correct the error of M. de l'Isle, who places Bering island at the 54th degree, only a short distance from Avatscha, whereas it is on the 56th parallel, sixty miles from Avatscha and forty Dutch miles from the mouth of the Kamshatka river.

"The voyage of M. Tschirikow, although attended with less fatigue and danger, was not less painful to him. His tender heart, which his profession of mariner had not rendered indifferent to the sufferings of others, was indeed sorely tried. After parting from M. Bering, sailing north-west, he came on the 15th of July to a country the shores of which were lined with rugged rocks, at the foot of which rolled a deep sea. He prudently refrained from approaching too near the shore, but at the end of three days sent the pilot, Abraham Dementiew, with a crew of ten men, to reconnoiter the country. Neither Dementiew nor any of those who accompanied him ever returned; and most sincerely was he mourned, and deservedly so, for he was young, good-looking, of an honorable family, steady and clever in his profession, and zealous in the service of his country. After waiting six days, M. Tschirikow sent the boatman, Sidor Sawelef, with three men, but they did not return any more than the others. While waiting for their return we constantly saw smoke on the shores, and the day after the departure of the boatman two men, in different boats, came from the spot where Dementiew and Sawelew had

landed. When they had approached near enough to be heard they began to call out, 'Agai, agai,' and then went back. M. Tschirikow did not know what to think of their conduct, and now, despairing of the return of his men and having no more boats to send on shore, he determined, on the 27th of July, to leave the place, follow the coast as much as possible, and then return to Kamshatka. M. de l'Isle, then, makes an addition of his own when he says that 'M. Tschirikow made many excursions into the country, during the month of August, while waiting for the return of his men.' To return to the truth, M. Tschirikow, in a distance of one hundred miles, never lost sight of land; he battled often with contrary winds, had much anxiety on account of the heavy fogs, and lost an anchor which he had put out, not far from the coast, in a moment of great danger. He was visited by twenty-one canoes, of tanned skins, each one containing a man; but this was all—for he was unable to converse with them. The scarcity of water and the scurvy carried off many of his men. Among the officers he lost two lieutenants—Lichatschew and Plautin, fine men and excellent mariners—who might have rendered good service had they lived. M. Tschirikow himself began to have the symptoms of disease, but good food and the air on land restored him to health. M. de la Croyere was not so fortunate; he appeared to have held his own until he was just at the point of death. His companions marveled at the good effects of the large quantities of brandy which he drank every day; but they soon saw that the only good it did him was to make him forget his sufferings. He died on the 10th of October, as they were entering the port of Avatscha, having dressed himself to go on shore and having celebrated his arrival by new excesses. We cannot ignore the important service rendered by M. de la Croyere to the expedition, when he recognized the Americans who came to M. Tschirikow as bearing great resemblance to the inhabitants of Canada, whom he had met while serving in that country seventeen years before coming to Russia, with the King of France's troops."

NOTE.—A pamphlet which has just come into my possession, entitled "Lettre de Monsieur d'Anville au R. P. Castel, Jesuit. Au sujet des Pays de Kamtschatka," etc (24mo, Paris, 1737), throws some light on the map of du Halde (1732), and definitely fixes the date and locality of the observation of the eclipse of the moon referred to by de l'Isle and the Russian officer, as well as later geographers.

D'Anville says: "The map of Bering's voyage is attributed to me. * * * The only part I had therein was to reduce it from the much larger original map, of which I had made a tracing by means of oiled paper. * * * I first learned of Bering's voyage by letters from de l'Isle, then in Russia; and finally an account of this voyage having been sent to R. P. du Halde by His Majesty Stanislas, King of Poland, it was placed in my hands.

“Likewise, both by a sheet of *astronomical observations made by Bering which came to me* later, and by the same letters of M. de l'Isle, I knew that the mouth of the river of Kamtchatka was found by astronomical determination to be in latitude 56° and some minutes.

“Bering in his navigation doubled the southern point of this continent [Kamshatka] in latitude $51^{\circ} 10'$, as is expressly noted in the sheet of *observations* which is now before me.

“But though the solution of the difficulty in the case of the Land of Jeco may be very simple and natural, yet it was not obvious to me, it may be said, for Bering's voyage and observations caused me to recur to this subject, and I can no longer doubt that the eastern coast of Tartary should be moved to the east as far as the maps of the Jesuits first indicated; for although M. de Strahlenberg in his excellent map of Siberia shows only 65° of longitude between Tobolsk and Okhotsk, and there are even less in de l'Isle's map of Tartary, yet Bering's map indicates that there are 74° .

“It was found that it (Okhotz) is 25° off of the meridian of Peking, which the observations of P. Gaubil placed in 113° fifty-odd minutes from Paris, so that it closely approximates the 139° which we have found it to be from Bering's observations. This determination does not differ much from the result of some astronomical observations, which, as I learn from Chim, M. de l'Isle, now in Russia, contemplated using in order to ascertain approximately the longitude of Kamtchat. The observation upon which I place the most dependence, and which likewise gives the greatest difference, is of an eclipse of the moon of February 25, 1728, of which the end was observed on the west coast of Kamtshat in latitude $52^{\circ} 46' N.$, Sirius having an altitude of $19^{\circ} 18'$ to the west, wherefrom M. de l'Isle calculated that the true time answered to 6h. 52m. p. m.

“This eclipse, the end especially, fell throughout Europe in the daytime, but having been observed at Carthagen, West Indies, by D. Jean Herrera, where it ended at 3h. 34m. a. m., a difference of 8h. 42m. is deduced between the meridians of Carthagen and the coast of Kamtshat.”

It is thus evident that Bering observed an eclipse of the moon in Kamshatka, and that the observations came into the hands of M. d'Anville.

A. W. G.

