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BRITISH COLUMBIA HISTORICAL QUARTERLY

"Any country worthy of a future should be interested in its past."

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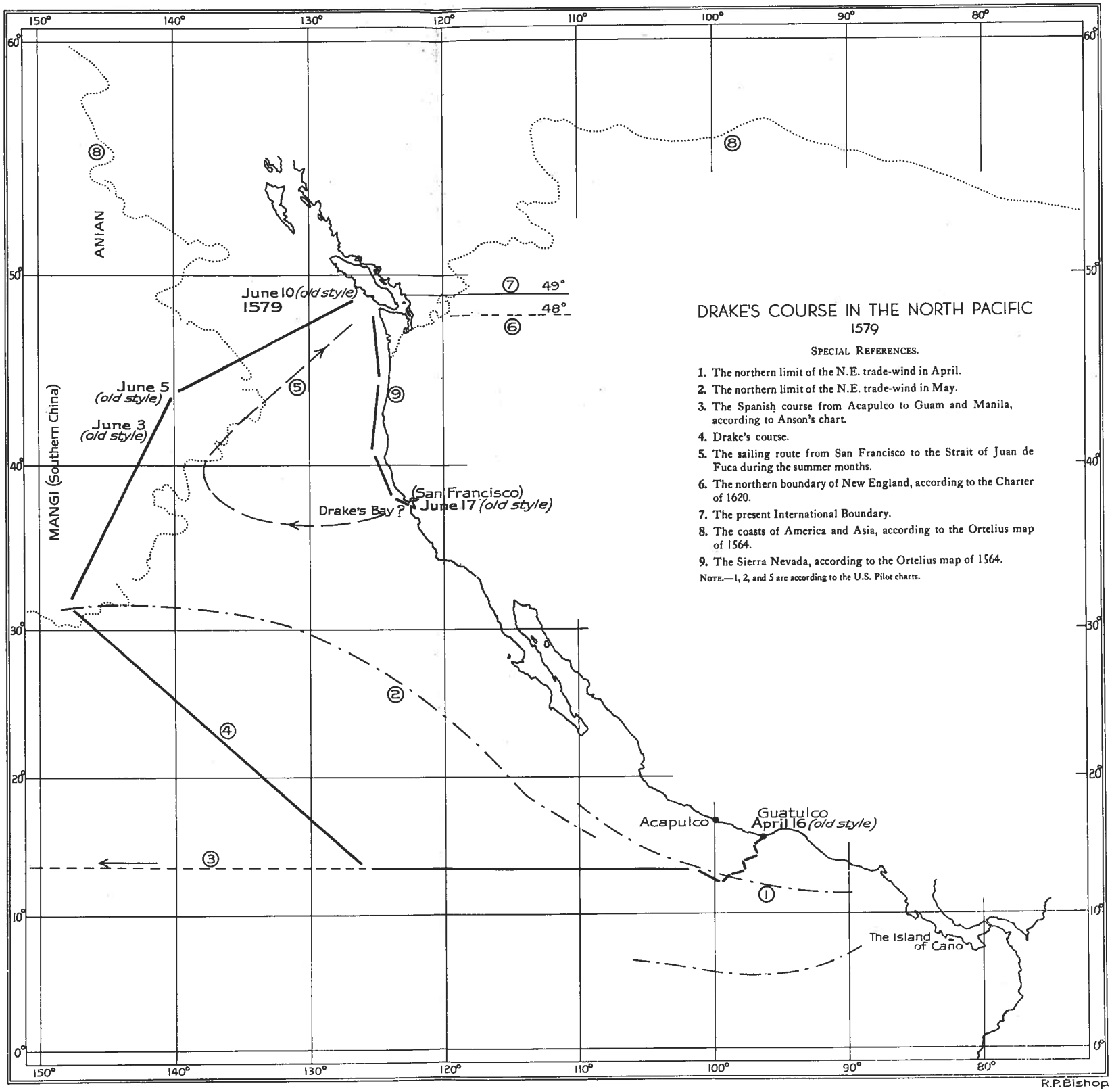
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R.P. Bishop

DRAKE'S COURSE IN THE NORTH PACIFIC.

For many a year Sir Francis Drake's great voyage of circumnavigation in 1577–80 was looked upon as having been primarily a buccaneering expedition. It was taken for granted that he had set out with no greater purpose than to despoil the Spaniards in the grand manner. Of recent years, however, H. R. Wagner and other scholars have done a service of inestimable value both to Drake's reputation and to history by showing that the voyage was, in actual fact, a serious enterprise undertaken in the interests of trade and exploration, and possibly with a view to colonization as well.

A moment's digression into the field of heraldry may not come amiss. The first ship to sail around the world was Magellan's *Victoria;* the second, Drake's *Golden Hinde.* Magellan, who sought to reach the Spice Islands by sailing south and west, met his death in the Philippines. The expedition reached the Moluccas, and del Cano, who brought the *Victoria* back to Spain, was granted as crest a terrestrial globe and the motto *Primus circumdedisti me.* Drake was granted a globe and the words *Auxilio Divino.*

Even more significant were the augmentations to the respective coats of arms. To del Cano twelve cloves, three nutmegs, and two bars of cinnamon; supporters, the kings of Tidore and Gilolo. These, according to Kirkpatrick, indicated that the Emperor and the Council of the Indies believed the objects of the voyage to have been accomplished. . . .[1]

Drake also reached the Moluccas, and his trading arrangement with the Sultan of Ternate has been considered by some as the most important result of the voyage. But Drake's arms do not display a single potentate or peppercorn:—

(1) F. A. Kirkpatrick, *The Spanish Conquistadores,* London, 1934, p. 131. An illustration appears in *Early Spanish Voyages to the Strait of Magellan,* Hakluyt Society, London, 1911, p. 12.

Sable, a fess wavy between two stars argent.[2]

The *Golden Hinde* was the first English ship to enter the Pacific Ocean. The waves, then, explain the fesse. The star below—the Cape Horn passage, and, perhaps, the farthest south attained by man. The star above—*Noua Albion vpon the backside of Canada, further then euer any Christian hitherto hath pierced.* The quotation is from the title page of Hakluyt's *Principall Navigations, Voiages and Discoveries*, 1589, apparently the first appearance of the name in type, though *Nova Albion* had appeared on a map in 1587, in Hakluyt's Paris edition of Peter Martyr.

The whole question of the genesis of Drake's voyage is too complex to be considered here, but it is now recognized that he was seeking to carry out earlier proposals for trade and colonization. In his recent biography of Sir Richard Grenville, A. L. Rowse refers to the intense interest taken in geographical matters in the years immediately preceding Drake's departure from England, and the cardinal point about which it is centred:—

> The real significance of this interest in geography was the passionate excitement aroused in the question of a North-East or a North-West Passage to Cathay. It was a matter of the greatest importance for the future of English expansion. The riches of the trade with the Far East had been revealed by the Portuguese voyages via the Cape of Good Hope; but southward expansion up to the time of Hawkins' voyages was blocked by the Portuguese and Spanish monopoly, and it was now being made abundantly evident that any attempts to penetrate their privileged sphere would mean fighting. . . . And so the question of a northern Passage to the Far East was a vital one; if there were one at all, and most geographical opinion agreed that there was, it would fall naturally into the sphere of English control, and being nearer than the Cape of Good Hope, give this country the larger control of the trade in Far Eastern commodities at cheaper rates.[3]

In a word, a clash with Spain might be avoided if a practicable northern passage existed; for discoveries by the North-

(2) Sir Julian Corbett, *Drake and the Tudor Navy*, London, 1899, p. 411.

(3) A. L. Rowse, *Sir Richard Grenville*, London, 1937, p. 84.

east, North, or North-west, it appears, were not regarded as running counter to the famous Bulls of Alexander VI., which reserved to Spain the lands lying west of a certain meridian and, apparently, south of the Azores.[4] Indeed, the rights of the English Merchant Adventurers to explore in those quarters had been renewed in the reign of Philip and Mary, when Philip of Spain was practically King of England.

The Governor of this association was Sebastian, the son and partner of John Cabot, to whom Henry VII. had granted rights to explore by the East, West, and North. Sebastian Cabot was interested in the North-west Passage, but the Merchants confined their energies to the North-east, where they entered the White Sea and opened up a profitable trade with Russia. As a consequence the association was commonly known as the Muscovy Company.

Interest in the North-west Passage was brought to a head by a map published in 1564 by the rising young geographer, Abraham Ortelius. This showed Labrador as an island, and the whole of the northern shore of America well to the south of the sixtieth parallel. Northern China was represented as being only a few hundred miles to the west of the Sierra Nevada, and between them was the strait or narrow sea of Anian.[5] The Moluccas, according to the map, were not far away. The year after the map was printed Sir Humphrey Gilbert applied for permission to make the Passage, but his proposals were blocked by the Muscovy Company. Later their monopoly was challenged successfully by Lok and Frobisher, and, at a time not yet precisely determined, Gilbert's cousin, Richard Grenville, proposed to discover the Passage from the west by searching the Strait of Anian. Gilbert himself suggested "inhabiting for our staple some convenient place of America, about Sierra Nevada," and his discourse on the passage to Cathay, the Moluccas, and other parts of the East was published the year before Drake left

(4) James A. Williamson, *The Age of Drake*, London, 1938, p. 27.

(5) The eastern part of North America appears in the *Geographical Journal*, LXXII. (1928), No. 3, opp. p. 304. *See also* p. 237. The western part appears in *Sir Francis Drake's Voyage around the World*, H. R. Wagner, 1926, p. 39.

England.[6] It will be seen that Drake combined these projects, searched for the Strait, took possession, and traded in the Moluccas.

Grenville had developed an interest in lands "beyond the equinoctial,"[7] fatally reserved for the honour of Her Majesty and, incidentally, free from interference by the Muscovy Company. His interest in Cathay appears in a draft Charter.[8] He proposed to plant a colony near the River Plate, and to pass through the Strait of Magellan.[9] In other words he proposed a South-west Passage to Cathay, with staples near Buenos Aires and on the Pacific coast. He made extensive preparations, and apparently secured sanction for the voyage, but this was cancelled for fear of trouble with Spain. He finally proposed to spend a few weeks near the Strait of Magellan, and then proceed with all speed to the Strait of Anian; here he would spend several months in making a reconnaissance, trade with Cathay, and return by the North-west Passage. His *Discourse*[10] on the subject resembles, in certain respects, the draft plan of Drake's voyage recently discovered by Professor E. G. R. Taylor.

In the proposals of Gilbert and Grenville, and in Drake's reconnaissance and act of possession, we have the Elizabethan prelude to the history of the North Pacific coast, and to a good deal more besides. It has, however, been suggested that Drake was not searching for the Strait, and that he did not reach the neighbourhood of 48 degrees. These are the points which require investigation in the first instance. But before going into details it is better to refer briefly to the general problem.

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(6) *A Discourse of a Discoverie for a New Passage to Cataia*, 1576. Reprinted in Hakluyt's *Principall Navigations*, 1589.

(7) Lansdowne MS., 100, fol. 142–6, British Museum; given in *The Three Voyages of Martin Frobisher*, by Richard Collinson, Hakluyt Society, London, 1867, p. 4. *See also* Rowse, p. 90.

(8) Extracts are given by Rowse, pp. 95–97.

(9) *See* the evidence of Oxenham and his companions in *New Light on Drake*, by Mrs. Zelia Nuttall, Hakluyt Society, 1914, pp. 7–11.

(10) *A discourse concerninge a straighte to be discovered towarde the northweste, passinge to Cathaia and the orientall Indians, with a confutacion of their errour that thinke the discoverye thereof to be moste conveni-entlye attempted to the northe of Baccalaos.* Endorsed by Burghley "Mr. Grenville's voyage." Lansdowne MS., 100, No. 4, B.M. given in *The Three Voyages of Martin Frobisher*, Hakluyt Society, 1867, p. 8.

THE PLOT OF THE VOYAGE.

It is now apparent that Drake's voyage combined several different projects; the difficulty is to distinguish them. In 1926 H. R. Wagner published practically all available information in his monumental study entitled *Sir Francis Drake's Voyage around the World*, and concluded that the voyage was intended for the Moluccas.[11] J. A. Williamson arrived independently at a similar conclusion:—

> It is undoubted that when Drake returned a very great importance was attached to his treaty with the Sultan of Ternate in the Spice Islands. It was made the basis of subsequent voyages, and formed the title-deed of the empire the East India Company hoped to establish in the archipelago. Only when the Dutch had ousted us, and we had fallen back on continental India, did Drake's achievement begin to fade from the public mind. What has never faded is his ballast of Spanish silver, with its top-dressing of gold and precious stones. It is time to recollect now, in the name of sober history, that above even these lay samples of all the spices in the Moluccas.[12]

In 1930 Professor Taylor discovered and published the report of Captain Winter, who became separated from Drake near the Strait of Magellan and returned to England. The reprint makes it clear that the Moluccas were included in the programme, thus confirming the conclusions of Wagner and Williamson.[13] At the same time Miss Taylor published a draft plan of Drake's voyage, which indicates that a shorter programme was intended in the first instance.[14] The list of promoters shows that the project was controlled by members of the Navy Board and the inner circle of the Queen's personal advisers. Drake was to contribute £1,000. A licence had been obtained from the Grand Turk "so as to give colour to the pretence that the voyage was for Alexandria."[15] Her Majesty was to be made privy to the truth of the voyage, and to supply a ship, the *Swallow*.

The draft plan provided for a five-months' reconnaissance in the Pacific, entering and returning by the Strait of Magellan.

(11) Wagner, *Sir Francis Drake's Voyage*, p. 26.

(12) J. A. Williamson, *Sir John Hawkins*, Oxford, 1927, p. 395.

(13) E. G. R. Taylor, "More Light on Drake," the *Mariner's Mirror*, XVI. (1930), pp. 134–150.

(14) Cotton MSS.; British Museum. Photographs of two pages are given in the *Geographical Journal*, LXXV. (1930), facing pp. 46–47. The edges of the paper have been burnt, and Miss Taylor gives a reconstruction of the essential part in the *Mariner's Mirror*.

(15) Quoted from Miss Taylor's article.

Drake was to sail northwards along the coast " as of the other " to 30 degrees, with a view to opening up trade in countries not under the obedience of any Christian prince.

The Spanish occupation actually extended to the neighbourhood of 40 degrees on the coast of Chile but, as Williamson points out, the extent of this occupation was not made clear in the published works of Ortelius and Mercator.[16] In the Ortelius atlas of 1570 the prominence of the name Coquimbo may have conveyed the impression that the continent was not under the obedience of any Christian prince south of 30 degrees. The phrase " as of the other " suggests the Atlantic coast, where Buenos Aires had been abandoned in 1541 and the remnant of the settlers taken to Asuncion. Here, for thirty-six years, the only stable settlement in the region of the River Plate stood in the centre of the continent, nearly 1,000 miles from the sea.[17]

" Grenville's project was to come and found a settlement on the River Plate and then pass the Strait and establish settlements wherever a good country for such could be found." This fact is mentioned in the evidence of John Oxenham. It will be remembered that Drake and Oxenham had seen, from a tree on the Isthmus of Panama, the Atlantic on one side and the Pacific on the other. Oxenham had built a pinnace and navigated the Pacific, had been captured by the Spaniards and taken to Lima. Here he and his companions gave evidence before the Inquisition while Drake, unknown to them, was raiding the coast. Oxenham thought that

> if the Queen were to give a licence to Captain Francis Drake he would certainly come and pass through the Strait, because he is a very good mariner and pilot, and there is no better one than he in England who could accomplish this. . . . The said Captain Francis had often spoken to witness saying that if the Queen would grant him the licence he would pass through the Strait of Magellan and found settlements over here in some good country.
>
> Questioned with how many ships it would be possible for Francis Drake to come to the Strait he answered that with the aid of his relatives and

(16) Williamson, *The Age of Drake*, p. 170. Miss Taylor subsequently published extracts from a manuscript Navigating manual which, she considers, may have belonged to Drake. It was evidently prepared in 1577, and gives sailing directions for the Strait of Magellan and the coast of Chile to the neighbourhood of 30 degrees. *Pacific Historical Review*, I. (1932), pp. 360–9.

(17) Kirkpatrick, p. 335.

companions he might be able to bring two or three vessels but that, after discovering a good country, they would be able to come with more ships. Witness said that Captain Francis discussed this subject with him.

Questioned whether they had discussed how, and by what route, they were to return to England after having passed through the Strait, he said that it seemed to him that some said it was to be by the same Strait, but others said that there was a route through another Strait that passed into the North Sea, but nobody knows this for a certainty or has passed through it.[18]

The last paragraph clearly describes the stage mentioned in the draft plan, of returning by the Strait of Magellan. Much more important, in the present connection, is the fact that it also mentions the idea of returning by an unknown strait in the north, where Drake subsequently made a reconnaissance, as suggested in Grenville's *Discourse*.

We now come to the traditional part of the story. Drake was taken by Walsingham to the Queen, and these or the like words she said:—

"Drake! So it is that I would gladly be revenged on the King of Spain for divers injuries that I have received." And said further that I was the only man that might do this exploit and withal craved my advice therein; who told Her Majesty of the small good that was to be done in Spain, but the only way was to annoy him by the Indies.[19]

The nature of Drake's arrangement with the Queen is not known. It may have been to raid Spanish treasure ships, or to seize the Isthmus of Panama in conjunction with Oxenham, as suggested by Williamson.[20] Drake, before entering the Pacific, referred to setting "by the ears" the three mighty monarchs of England, Spain, and Portugal,[21] and Winter's report shows that the final arrangement included a visit to the neighbourhood of the Moluccas, where the indefinite nature of the Spanish-Portuguese boundary afforded an excellent opportunity for the English to gain a footing.

Sir Humphrey Gilbert's *Discourse* had just been published,[22] with a sketch of the Ortelius map of 1564, showing the Moluccas

(18) Nuttall, pp. 9–10.

(19) Cooke's narrative, as given by Corbett, p. 208.

(20) *The Age of Drake*, p. 187.

(21) Williamson, *Sir John Hawkins*, p. 392.

(22) In 1576. He states that it was written in 1566, but it was evidently brought up to date. *See* W. G. Gosling, *Life of Sir Humphrey Gilbert*, London, 1911.

almost due south of the narrow sea of Anian. Frobisher was making his voyages in search of the North-west Passage, and Grenville had submitted his *Discourse* on the search from the western end. As Drake actually made this search, it seems evident that it was included in the final plans for the voyage. These may have included an act of possession " about Sierra Nevada " as suggested by Gilbert, or possibly north of the Spanish explorations and well within territory covered by the " East, West and North " of the English charters. A New England in this neighhourhood would not conflict with New France and, even if the Strait were not found, the name on the map would dispose of any Spanish pretensions to a closed Pacific east of the Portuguese boundary.

It may be too early to state that the upper star on Drake's coat of arms represents one of the objects of the voyage, as well as one of the accomplishments. British Columbia can, however, contribute to the solution of the problem by showing that Drake reached a high northern latitude in searching for the Strait of Anian in the summer of 1579.

THE SEARCH FOR THE STRAIT.

Most accounts of the voyage bring Drake to the neighbourhood of 48 degrees, and some of them refer to his search for the Strait, or the route by the North-west Passage. The map printed by Hakluyt in 1587, and his reference to " Noua Albion vpon the backside of Canada " in 1589, suggest that he had shared the general belief in the higher latitude. But certain copies of *The Principall Navigations* contain six extra leaves giving an account of *The Famous Voyage of Sir Francis Drake*, probably printed after 1589, as the pages are not numbered. The name of the author is not known. The highest latitude here mentioned is 42 degrees (and in a subsequent edition 43),[23] suggesting that Drake merely reach the coast of Oregon. And the account suggests that Drake was not looking for the passage, but taking the most suitable route to the Moluccas. The rare first edition, however, has a marginal note—" A purpose in Sir Francis to returne by the Northwest passage."

(23) London, 1600, III., p. 440.

As the narrative gives the opposite impression, it seems that Hakluyt, as editor, wrote the marginal note himself. It would accordingly appear that Hakluyt believed, at first, in the higher latitude and in the search for the passage. The two beliefs are complementary. Drake sailed from Guatulco, in the south of Mexico, and spent eight weeks at sea. If he came north to 48 degrees he was not merely shaking off the Spanish pursuit, and looking for a suitable place in which to repair his ship. He was searching for the Strait, the approach to the North-west Passage.

THE AUTHORITIES FOR 48 DEGREES.

The latitude of 48 degrees was generally accepted until the middle of the nineteenth century, when it became involved in the Oregon boundary question. The latitude was debated at some length by Robert Greenhow, Librarian of the Library of Congress, who favoured 43 degrees, and Sir Travers Twiss, who believed in 48. Long after the boundary question was finally settled the debate was revived by Professor George Davidson, of the United States Coast and Geodetic Survey, and Sir Julian Corbett.[24] Davidson, who believed in 43 degrees, was the highest authority of the time on the winds and currents of the Eastern North Pacific, and he was able to point out that the course suggested by Corbett was not feasible. Davidson was, however, misled by an imperfect reproduction of the Hondius map of the Drake and Cavendish voyages, and he was not able to use the bearings given by John Drake, which had been quoted incorrectly. Recent research, furthermore, has thrown an entirely new light on the direction of the currents at different times of the year.

Wagner accepts Davidson's viewpoint, and rightly attributes great importance to the need of following Drake's course from Guatulco by a study of the prevailing winds. He does not, however, plot the course afresh, and he mainly depends on Hakluyt's *Famous Voyage*, assuming that the additional information in *The World Encompassed* is due to interpolation. Evidence is now available to show that *The Famous Voyage* is badly abbreviated, so the accompanying plot of the course is based on the fuller account, supplemented by John Drake's bearings.

(24) Corbett gives a brief review of the discussion. p. 289.

Wagner's standard work of 1926 is indispensable for a study of the subject, and a great deal of useful information appears in his other writings. The Spanish accounts of Drake's proceedings as far as Guatulco, and the log of Nuño da Silva, the Portuguese pilot, are given by Mrs. Nuttall. Da Silva mentioned that Drake and his young kinsman [John] were fond of painting. Don Francisco de Zarate referred to pictures of the coast, painted in its exact colours " so naturally depicted that no one who guides himself according to these paintings can possibly go astray." [25] Unfortunately they have been lost, and no log of the whole voyage is known to exist. Beyond Guatulco we have to depend on abbreviated accounts and other evidence, and on compilations which are sometimes contradictory.

Valuable evidence was given by John Drake at Santa Fé in the Province of the River Plate, and before the Inquisition at Lima. He accompanied the Fenton expedition in 1582, with other members of the crew of the *Golden Hinde,* and was wrecked in the estuary of the Plate and subsequently taken prisoner. He mentioned 48 degrees four times, and the change of course in 44 degrees, and referred to Nova Albion. He also gave bearings which enable us to plot the course from Guatulco.[26]

The diary of Madox, chaplain on the Fenton expedition, refers to 48 degrees on the " back syde of Labradore and as Mr Haul supposeth, nye thereunto." Hall had been with Frobisher. The extract was published by Professor Taylor in the *Pacific Historical Review* in 1932.[27]

John Davis, the Arctic navigator, gives " forty-eight degrees being on the backe syde of Newfound land " in *The Worldes Hydrographical Discription.*[28] He was a partner of Sir Humphrey Gilbert's brother Adrian, and searched for the passage three times by way of Davis Strait, and passed through the Strait of Magellan, but was unable to reach Nova Albion. After this he accompanied the Dutch to the East Indies, and then piloted the first fleet of the East India Company to the Spice Islands.

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(25) Nuttall, pp. 208, 303.

(26) Nuttall, pp. 31, 32, 50; Wagner, p. 333, note 16.

(27) I., pp. 360–9.

(28) London, 1595. Reprinted by the Hakluyt Society in *The Voyage and Works of John Davis,* 1880, p. 205.

He was a high authority on navigation, and definitely interested in the question of Drake's latitude.

An account of the circumnavigation appeared in the 1592 edition of Stow's *Chronicles of England.* This may have been the first account to appear in print. It states that Drake " came backeward to the lineward the tenth of June 1579." The latitude given is 47 degrees.[29]

The unsigned notes commonly known as the *Anonymous Narrative,* in the handwriting of the time, mention the search for the Strait and the latitude of 48 degrees.[30]

Various maps[31] show Nova Albion in 48 degrees, and some of these indicate the track of the ship, but obviously without any attempt at accuracy. The maps are reproduced by Mr. Wagner. On the Hondius map of the Drake and Cavendish voyages the track has been erased north of 42 degrees, evidently to conform with *The Famous Voyage.*

The fullest account appears in *The World Encompassed by Sir Francis Drake . . . carefully collected out of the notes of Master Francis Fletcher preacher in this imployment, and divers others his followers in the same. London 1682.* Fletcher's manuscript is available as far as the south of Chile. His rambling style and pious interjections can generally be recognized, and the missing portion of the notes was evidently used by the compiler of *The World Encompassed* for the voyage north of Guatulco and the proceedings in California. The sources of this account and of *The Famous Voyage* are fully discussed by Wagner.[32]

The Famous Voyage confuses the sequence of events at Cano and Guatulco. Both accounts mention 42 degrees, and beyond this the language is similar, but *The Famous Voyage* is shorter and does not mention any higher latitude in the first edition. The comparative value of these accounts, at this point, is decided by higher authority:—

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(29) The extract from the edition of 1635 is reprinted by Wagner, pp. 303–07.

(30) Harleian MSS., British Museum, No. 280, Folio 23. Extracts are given by Wagner, p. 243, *et seq.*

(31) Such as the map in Hakluyt's Paris edition of Peter Martyr; the " silver map " of Drake's voyage; the French and Dutch Drake maps.

(32) pp. 238, 286.

BEE IT KNOWNE VNTO ALL MEN BY THESE PRESENTS
IVNE 17 1579
BY THE GRACE OF GOD AND IN THE NAME OF HERR MAIESTY QVEEN ELIZABETH OF ENGLAND AND HERR SVCCESSORS FOREVER I TAKE POSSESSION OF THIS KINGDOME WHOSE KING AND PEOPLE FREELY RESIGNE THEIR RIGHT AND TITLE IN THE WHOLE LAND VNTO HERR MAIESTIES KEEPEING NOW NAMED BY ME AN TO BEE KNOWNE VNTO ALL MEN AS NOVA ALBION.

FRANCIS DRAKE

A plate of brass bearing the above inscription was picked up by Mr. Beryle Shinn in 1936 and handed to Dr. H. E. Bolton.[33] It was subsequently ascertained that the plate had been found a few years before near Drake's Bay and thrown away near San Francisco Bay, not far from the spot when Shinn found it. The plate and the lettering have been carefully examined by Professor Fink, of Columbia University, and other experts, and the question of its authenticity now appears to be finally settled.[34]

This important find is described by Professor Bolton in his paper *Francis Drake's Plate of Brass* read before the California Historical Society in 1937. He points out that *The World Encompassed* and the other accounts vary on vital matters in describing the plate, the inscription, and the sixpence. These discrepancies had long puzzled him. Only one recourse remained —to find the plate. This shows that "the phraseology of the inscription in nearly every particular is that of *The World Encompassed,* our fullest version of Fletcher's account."[35]

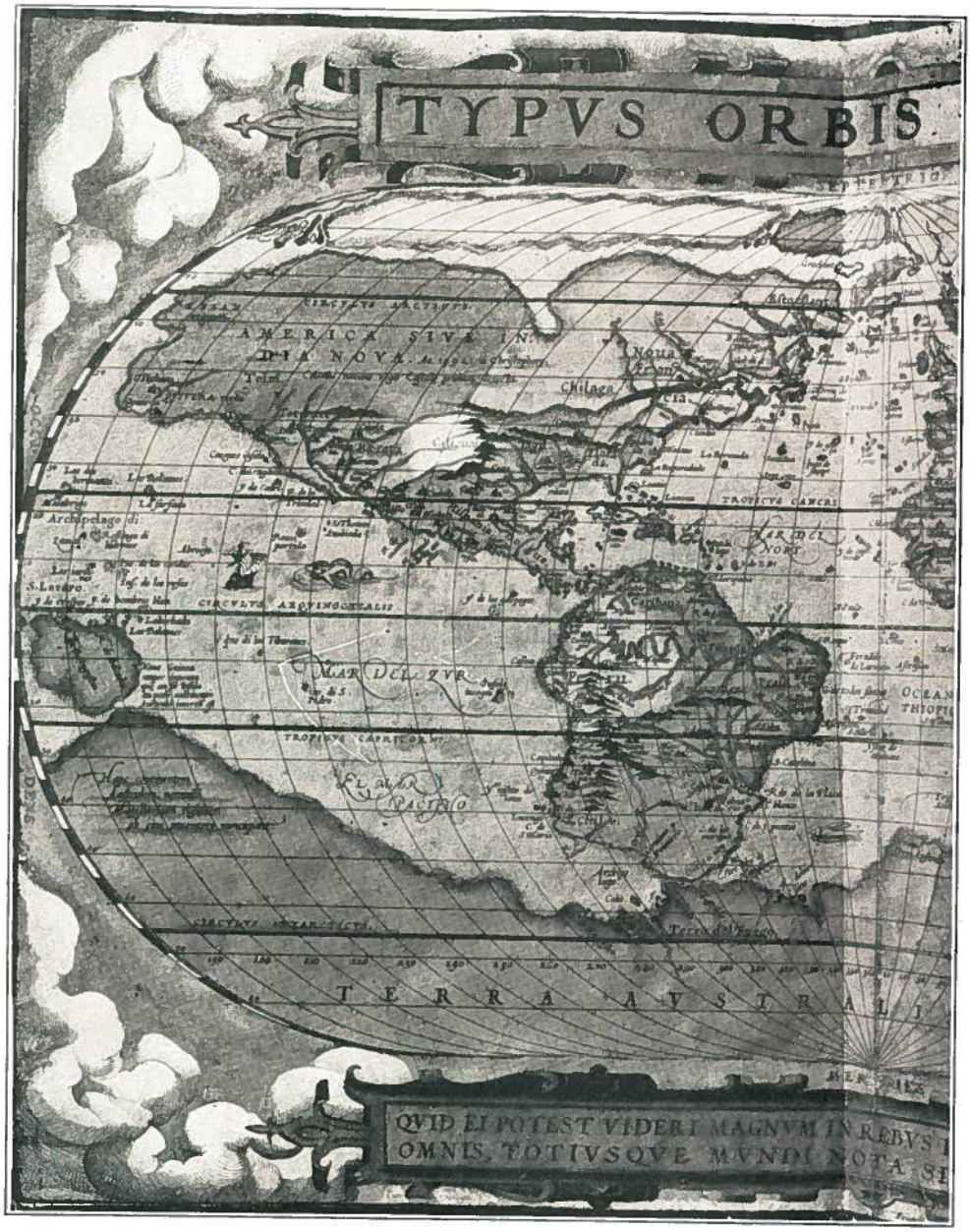
His paper is supported by excerpts from the various early accounts, which enable the reader to do his own textual criticism. The accounts of the Indian houses are especially interesting. *The Famous Voyage* states that they are "digged round about with earth"; *The World Encompassed* that they are "digged round within the earth."[36] The latter is evidently an account, by an eye-witness, of the typical semi-subterranean house which

(33) Professor of American History at the University of California.

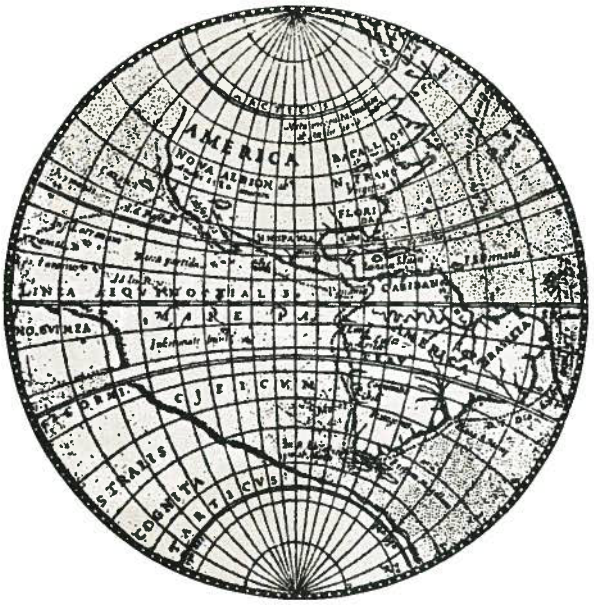
(34) For the complete analysis and report, *see* Colin G. Fink and E. P. Polushkin, *Drake's Plate of Brass Authenticated,* San Francisco, 1938.

(35) *Drake's Plate of Brass,* San Francisco, 1937, p. 11.

(36) *See* Appendix II.



Part of the Typus Orbis Terrarum, from the Ortelius Atlas, first issued in 1570.



The Silver Map of Drake's Voyage, showing *Nova Albion* at the Northerly Anchorage.

extended from the coast of California to the interior of British Columbia, where the pits are known as keekwillie holes. A sketch of the zone in which these are found appears in *Native Houses of Western North America*, by T. T. Waterman.[37]

Here we have an instance, independent of the Plate of Brass, confirming Professor Bolton's conclusion that Fletcher is our chief source of information for details regarding events at the "conuenient and fit harborough." "His statements were published in varying degrees of abridgment, the fullest version being that in *The World Encompassed*. Since the abridgments leave out important details, this version may be regarded as our most faithful available record of what Fletcher wrote. In the abridgments at this point there are few contradictions of the fuller narrative, but by leaving out essentials they convey imperfect impressions."[38]

One of the essentials omitted in *The Famous Voyage*, as the evidence submitted in summary form in this paper is intended to show, is the latitude of 48 degrees.

FLEURIEU'S WHIRLPOOL.

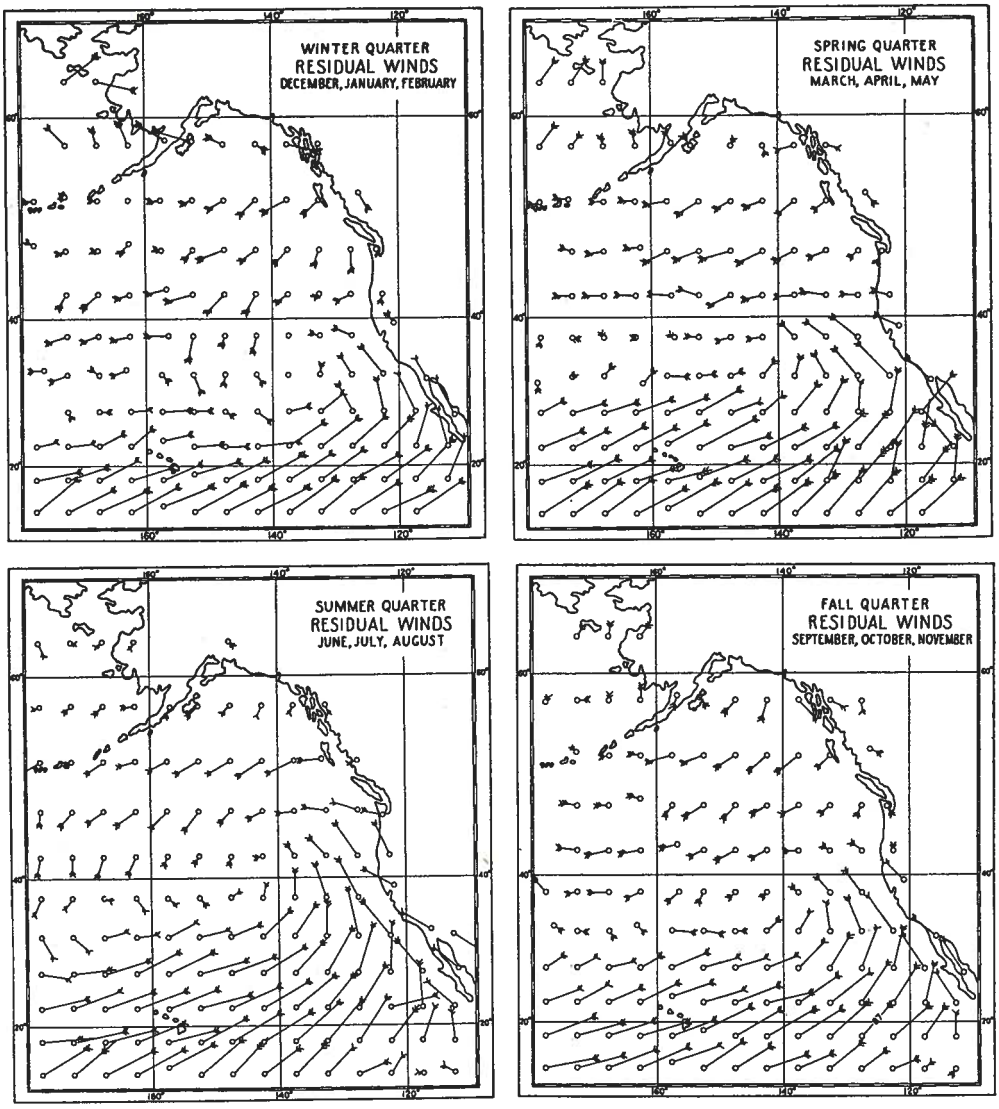
Before going into details of Drake's course from Guatulco, it is advisable to consider the winds and currents of the North Pacific and the routes taken by sailing ships.

During the summer months strong north and north-west winds blow down the Pacific coast of the United States and Mexico, and ships sailing to the north stand well out to sea. Off the coast of California is a region where the barometer is high—and meteorologists tell us that the winds blow in a clockwise direction round these regions in the northern hemisphere. To the south is the north-east trade-wind, to the north are the prevailing westerlies, and the currents, generally speaking, follow the winds. The arrangement was noticed by Fleurieu, and called by an Englishman *Fleurieu's Whirlpool*, according to Kerhallet, Capitaine de frégate.[39] The expression is convenient, for we may say that Drake followed Fleurieu's Whirlpool.

(37) Published by Museum of the American Indian, New York, 1921.

(38) *Drake's Plate of Brass*, pp. 9–10.

(39) Charles Philippe de Kerhallet, *Considérations Générales sur l'Océan Pacifique*, Paris, 1851, p. 61 and map opp. p. 43. Fleurieu was the author of *Voyage Autour du Monde . . . par Étienne Marchand*, Paris, 1798.



The Pacific Ocean north of 10° N. latitude and east of 170° W. longitude, showing the residual winds calculated for the four seasons from the data given on the pilot charts published by the U.S. Hydrographic Office. The length of the arrows is proportional to the resultant drift, while the number of feathers on the arrows gives the average force according to the Beaufort Scale.

(Reproduced by kind permission of the International Fisheries Commission.)

Ships sailing out of San Francisco during the summer stand right out to sea, and approach the Strait of Juan de Fuca from the south-west—and the route on the present pilot charts was laid down for vessels which could sail closer to the wind than the *Golden Hinde*. Guatulco, in the south of Mexico, is conveniently placed for getting into the April trade-wind. After leaving this port Drake took a " Spanish course " and sailed in longitude for 500 leagues, according to one account; by another account 600 leagues, and by another 800. After this he continued, clockwise, round the whirlpool.

The problem of the Pacific winds was first solved in the southern hemisphere. Off the coast of South America the whirl is in the opposite direction. In 1547 it took an expedition eight months to travel from Callao in Peru to Chile, against the south wind and the Humboldt current. In 1563 the problem was solved by the pilot Juan Fernandez, who stood well out to sea instead of following the coast. Fernandez ran out from Callao before the south-east trade-wind, working to the south until he encountered the westerlies, and then running before them into Valparaiso. He performed the journey in twenty days, discovering on the way the island made famous in after-years as the abode of Alexander Selkirk. " The feat of seamanship on the part of Juan Fernandez won for him very full official recognition. It was indeed a most important discovery. He received a grant of land in the lovely valley of Quillota in Chile . . . and his descendants were still living in Quillota when I was there." The quotation is from Sir Clements Markham's anniversary address on Balboa in 1913.[40]

In 1599 Francisco de Quiñones used the new way " and performed the voyage from Callao to Concepcion in the then unprecedently short time of 16 days." The difference in latitude is 24 degrees, and in spite of the roundabout route southing was made at a degree and a half per day. This rate, about four knots, may be compared with the performance of the *Golden Hinde*.

The idea of sailing west before the trade-wind and east in high latitudes was not new; it had been applied to the whole Pacific, but early attempts to return to America were not suc-

(40) *Geographical Journal*, XLI. (1913), pp. 517–527.

cessful. Magellan's flagship, the *Trinidad*, went north to 42 degrees, but had to return to the Moluccas. Del Cano (of the coat of arms) was sent again from Spain, under Garcia de Loaysa, and with them went Urdaneta, who eventually solved the problem. Cortes sent Saavedra to assist them in the Moluccas, and so initiated the famous run from Mexico to Guam. Spain then relinquished the Moluccas, but continued to claim the Philippines.

A later expedition from Mexico made various discoveries, but still nobody sailed east to America. Urdaneta retired to a monastery, but eventually received a royal request to accompany Legaspi, who conquered the Philippines. Urdaneta sailed back to Mexico in 1565,[41] and after this the Manila galleon made the round trip across the Pacific for centuries.

THE SPANISH COURSE.

Anson captured the Manila galleon in 1743 and found that she had standing orders to sail west between the 13th and 14th parallels.[42] His chart shows her track, tacking out of Acapulco to the latitude of Guam and then "running down the latitude" to that island, where fires were lit to prevent her from passing it. Her eastbound track takes a zigzag course to the north, sometimes reaching 35 degrees, and on approaching California takes a more direct course to Acapulco. The track clearly indicates the prevailing winds, and suggests that the northern coast could best be reached from Central America by sailing west along a known course, before turning to the north.

Drake prepared his ship for the northern voyage near the island of Cano, about 8° 40′ N., and had the good fortune to capture a Spanish frigate taking two China pilots to Panama, where they were to meet a high official and conduct him to the Philippines.[43] The pilots had been sent by the Viceroy of New Spain, and their charts and sailing directions gave full information about the route across the Pacific.

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(41) Full details are given in Wagner's *Spanish Voyages to the Northwest Coast of America in the Sixteenth Century*, San Francisco, 1929.

(42) George Lord Anson, *A Voyage Round the World*, 9th edition, London, 1756, pp. 247, 385.

(43) *See* the many reports and depositions printed in *New Light on Drake.*

Our General at this place, and time . . . began to consider and to consult of the best way for his Countrey.

The quotation is from *The Famous Voyage*, which goes on to say that Drake decided to return by way of the Moluccas and the Cape of Good Hope.

Upon this resolution he began to thinke of his best way to the Moluccaes, and finding himselfe where he nowe was becalmed, he sawe, that of necessitie he must be forced to take a Spanish course, namely to saile somewhat Northerly to get a winde. We therefore set saile, and sailed in longitude 600. leagues at the least for a good winde, and thus much we sailed from the 16. of Aprill till the 3. of June.

The information is valuable, but has to be disentangled. *The Famous Voyage*, like the *Anonymous Narrative*, gives Cano and Guatulco in the wrong order and so confuses the sequence of events. They sailed "somewhat northerly" from Cano, and sailed "in longitude" after leaving Guatulco. The latter point is made clear by *The World Encompassed*.

From Guatulco we departed the day following, viz., Aprill 16. setting our course directly into the sea: whereupon we sayled 500. leagues in longitude, to get a winde: and betweene that and June 3. 1400. leagues in all, till we came into 42. deg. of North latitude.

Sailing "in longitude" suggests sailing due west. Coupled with the idea of a Spanish course it suggests the route shown on Anson's chart, where ships had orders to keep between the 13th and 14th parallels. Such a course would lie "somewhat northerly" from Cano, and "directly into the sea" from Guatulco.

Legaspi and Urdaneta had been instructed to take a more southerly course, apparently to examine certain islands reported to lie about the latitude of 10 degrees,[44] but as no use was made of these islands it seems almost certain that subsequent voyages would be made along a course in the latitude of Guam, as indicated by Anson. Such a course would be well within the trade-wind, north of the equatorial counter-current, and free from all obstructions. Drake would be well advised to take it before turning to the north.

THE NORTHERLY ANCHORAGE.

The Famous Voyage continues:—

The 5. day of June, being in 42. degrees towards the pole Arctike, we found the aire so colde, that our men being greeuously pinched with the

(44) Wagner, *Spanish Voyages*, pp. 107, 349, note 62.

same, complained of the extremitie thereof, and the further we went, the more colde increased vpon vs. Whereupon we thought it best for that time to seeke the land, and did so, finding it not mountanous, but lowe plaine land, & clad, and couered ouer with snowe, so that we drewe backe againe without landing, till we came within 38. degrees towards the line.

The quotation given above from *The World Encompassed* makes it fairly clear that they reached 42 degrees on June 3. The account goes on to say that the cold began " in the night following " and that they made an additional two degrees under these conditions. They would then be in 44 degrees. On June 5 they were forced by contrary winds to make for land, where they anchored in a " bad bay " in 48 degrees. These latitudes are confirmed by the early and independent evidence of John Drake, which makes it clear that the wind changed in 44 degrees, and that they altered course, discovering land in 48 degrees.[45]

To continue from *The World Encompassed:*—

From the height of 48. deg. in which now we were, to 38. we found the land by coasting alongst it to bee but low and reasonable plaine: euery hill (whereof we saw many, but none verie high) though it were in June, and the Sunne in his neerest approch vnto them being couered with snow.

The mountains might appear like hills to men who had passed through the Strait of Magellan and followed the coast of South America, but *The Famous Voyage* does away with them altogether and brings the snow from their summits to the level of the low plain land. *The Famous Voyage* does not state that 42 degrees was the highest latitude reached, but the text gives that impression, and this is heightened by Hakluyt's marginal note. The text is evidently taken from an original which resembles *The World Encompassed*, but it is badly abbreviated and gives the wrong impression, as it does in the case of the Plate of Brass and in the description of the native houses of California. The fact that *The Famous Voyage* does not mention the higher latitude clearly does not prove that 48 degrees is an interpolation in *The World Encompassed*, or a fiction invented before John Drake left England in 1582, nor does it indicate that other authorities which mention 48 degrees are incorrect. It seems hardly necessary to labour the point, but it is interesting to see how the idea of a lower latitude was perpetuated.

(45) Nuttall, p. 50. *See* Appendix II. for the text of John Drake's statement.

Apparently Hakluyt was feeling worried by certain contradictions in the narrative. In the second edition of *The Principal Navigations* (III., 440) he omitted "in longitude," changed "42" to "43" degrees, and abbreviated the description of the shore. He also printed a separate account of Drake's course from Guatulco and the proceedings in California. This account mentions Cano in the proper order, but the sequence of the context is not correct. The result is astonishing. "Our General . . . began to consider and to consult" at *Guatulco*, where he saw that he must be forced

to take a Spanish course, namely to saile somewhat Northerly to get a winde. Wee therefore set saile, and sayled 800 leagues at the least for a good winde, and thus much we sayled from the 16 of Aprill after our olde stile till the third of June.

The latitude mentioned is 43 degrees. Apparently the "800 leagues" was manufactured to suit the distance along the coast, as the idea of sailing in longitude had been eliminated. The account gives the impression that Drake sailed northerly from Guatulco to get a suitable wind for the Moluccas. He would not have done this with the Spanish charts in his possession.

The first edition of *The Principall Navigations* is exceedingly rare, so the accounts in the second edition, supported by Hakluyt's marginal notes, have given rise to the belief that Drake turned south in 43 degrees. English writers have continued to refer to 48 degrees, but apparently a practicable route to the northerly anchorage has not been suggested. Fresh information has now come to light, and this enables us to plot the course afresh.

Sir Julian Corbett plotted the 500 leagues due west, but was not able to use the bearings given by John Drake, N.W. and N.N.E., as the latter had been printed N.N.W. Mr. Wagner points out that the Spanish text printed by Lady Elliott-Drake gives N.N.E. As they could not sail N.W. from Guatulco we must apply the bearings to the end of the 500 leagues "in longitude." The leagues, according to John Davis, would correspond to three of our nautical miles, and the measurement would probably begin after they had got on the westerly course somewhere south-west of Guatulco. The change from N.W. to N.N.E. would

be at the northerly limit of the trade-wind.[46] By plotting these courses, and making allowance for current, we bring the *Golden Hinde* to 44 degrees somewhere in the neighbourhood of the 140th meridian. This would enable the *Golden Hinde* to reach land in 48 degrees without sailing against the prevailing wind.

THE DATE OF ARRIVAL.

The date of changing course in 44 degrees is given by *The World Encompassed,* as already mentioned:—

> The 5. day of Iune, wee were forced by contrary windes, to run in with the shoare, which we then first descried; and to cast anchor in a bad bay, the best roade we could for the present meete with . . .

It was obviously impossible for them to jump at once from 44 to 48 degrees, and it appears that a date has been omitted. The part of *The World Encompassed* which describes Drake's voyage in the North Pacific seems to be a fairly complete copy of Fletcher's notes; but certain events are omitted, such as the capture of the Spanish charts at Cano, Drake's detention of the pilot Colchero, and the seizure of the frigate which they brought to California.

The date of June 10 was given by John Stow, in *The Chronicles of England,* in the edition of 1592—which, as noted above, was possibly the first account of the voyage to appear in print. The date fits well with the rest of the evidence, giving five days from the end of the traverse we have plotted to 44 degrees, and allows seven days for the run south to the haven in California, where Drake arrived on June 17.

WASHINGTON OR VANCOUVER ISLAND?

The track plotted is eminently practicable. The N.W. course is close to the *New Route* described by Imray in 1868, in his *Sailing Directions for the West Coast of North America.* The N.N.E. course and the run towards land are close to the northern course of the sailing track from San Francisco to the Strait of Juan de Fuca.

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(46) The limit of the trade-wind appears on the U.S. Pilot Charts of the North Pacific, which are issued monthly. A quarterly analysis of the currents is occasionally given on the back of the charts.

With regard to the latitude of 48 degrees we have to consider:—

1. Instrumental error.
2. Error of observation.
3. Error in dead reckoning.
4. Allowance for current.

1. Professor Davidson has tabulated, with great care, the errors in various latitudes given by Cabrillo and Ferrelo.[47]. The smallest is 40 minutes, and the errors increase towards the end of the series taken by Ferrelo. If his observations are divided into three groups the errors are found to be consistent, giving averages of 47, 58, and 82 minutes, all in the same direction. The instrument was evidently getting out of adjustment as time went on. Perhaps we should allow Drake half a degree.

2. Error in observation. The sextant had not been invented, or the backstaff of John Davis. The instruments of the time were the cross-staff, which used the horizon; the quadrant, and the astrolabe. The error, at sea, might be anything up to one degree.

3. Dead-reckoning. Time was measured by the half-hour glass, and speed by estimation or the log. There seems to be no mention, at this period, of a glass indicating a few minutes for use with the log-line. A book of the period states that the log was timed by repeating words or sentences, but no example is given. Salutes have been timed by:—

Fourteen years a gunner's mate
And never been called a — – – ——
Number One FIRE.

John Drake states that on their voyage they met with great storms.[48] "All the sky was dark and full of mist." *The World Encompassed* mentions the fogs at the northerly anchorage, and from this account it seems that the last observation on the way north may have been in 42 degrees. In this event the easterly run towards the land might give a large error, and the first rough estimate would be amended by a final latitude estimated from the southerly run towards California. The first estimate might account for the 47 degrees given by Stow.

(47) *Report of the U.S. Coast and Geodetic Survey for 1886*, Appendix No. 7, Washington, 1887.

(48) Nuttall, p. 31.

4. Allowance for current. The combined effect of the Kuro Siwo and the West Wind Drift, described for convenience as the Japanese Current, has brought disabled junks and other craft across the Pacific at the average rate of 10 miles a day.[49] In 1865 Professor Davidson discovered that the current divided off the American coast, one branch running north and west round the Gulf of Alaska and the other south to California. He placed the division in 148° W., between latitudes 46 and 50, and from the drift of redwood logs, etc., he concluded that a strong inshore current ran to the north off the coast of Oregon and Washington. Recent research has suggested that the Japanese Current divides nearer the coast, near 140° W., about 40° N. in winter and 50° N. in summer. The current, then, flows north in winter and south in summer off the coast in question. Theoretical determinations have now been confirmed by the drift of bottles released by the International Fisheries Commission. Diagrams of the drift and particulars of the distance travelled by individual bottles have been printed by the Commission, with analysis of the prevailing winds, and a full discussion.[50]

Some of the bottles released in August drifted south at the rate of 5 miles a day, and a few reached Hawaii. Perhaps we may allow a current correction of half a degree in the case of the *Golden Hinde,* bringing the latitude to 48½ degrees. If we allow anything from ½ to 1½ degrees for the combined effect of 1, 2, and 3, we place the anchorage between 47 and 48 degrees

(49) C. W. Brooks, *Japanese Wrecks . . . in the North Pacific,* San Francisco, 1876. The vessels were generally driven offshore by the December monsoon, and it has been observed that glass fishing floats, which are often marked with Japanese characters, begin to arrive on the west coast of Vancouver Island in January. For this information I am indebted to R. Whittington, of Wickaninnish Bay, Long Beach, north of Ucluelet. Eleven of these floats were seen north of Honolulu, between 26° and 40° north, by Mr. and Mrs. R. S. Strout in the yacht *Igdrasil* in June and July, 1938, as narrated in *Yachting Monthly,* London, February, 1939. For this reference I am indebted to J. Genge, of Victoria. *See also* T. A. Rickard, "The Use of Iron and Copper by the Indians of British Columbia," *British Columbia Historical Quarterly,* III. (1939), p. 47.

(50) *Report of the International Fisheries Commission, No. 9.* "Life History of the Pacific Halibut." William F. Thompson and Richard Van Cleve, Seattle, 1936, pp. 50–61.

on the coast of Washington, or between 49 and 50 degrees on the coast of Vancouver Island.

The World Encompassed states that ". . . though we searched the coast diligently, euen vnto the 48. deg. yet found we not the land, to trend so much as one point in any place towards the East,[51] but rather running on continually Northwest, as if it went directly to meet with Asia . . ." The northwest bearing corresponds to the coast of Vancouver Island. It would appear then that the "bad bay" where Drake anchored in the recorded latitude of 48 degrees was on the west coast of Vancouver Island. There is additional evidence to this effect, but it cannot be adduced in a short article.

Drake travelled south for a week and repaired his ship in California, where he took possession, or accepted possession, in the name of Queen Elizabeth. He named the country *Albion*, "and that for two causes; the one in respect of the white bancks and cliffes, which lie toward the sea: the other that it might haue some affinity, euen in name also, with our owne country, which was sometime so called."[52]

ALBION AND ENGLAND.

At the town of Totnes, on the River Dart, in Devon, they show one the Brutus Stone. Here, they say, landed Bryttys, of the Trojan royal line, who changed the name of Albion to Britain.[53] The story, told by Geoffrey of Monmouth, appears to based on ancient British tradition.

The Romans saw and conquered, but the name of Britain remained. With the Angles and Saxons came the name of England. The British, gradually driven to the west, became to

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(51) Apparently they were now depending on the Ortelius map of 1564, as they had been misled by the peculiar bulge on the coast of Chile which appeared on the later maps of Mercator and Ortelius. *See*, for instance, the reproduction of the *Typus Orbis Terrarum*.

(52) *The World Encompassed.*

(53) ". . . in totonesio littore applicuit. Erat tunc nomen insulae albion." "And then Bryttys desired to call the island by his own name, and that the race inhabiting it should be called bryttaniaid . . . And from that time on, the language of that people was called bryttanec." *See* the Latin texts and early translations in *The Historia Regnum Britanniae of Geoffrey of Monmouth*, by Acton Griscom, New York, 1929, p. 249. Geoffrey of Monmouth wrote about A.D. 1136.

the invaders Welsh and Cornish. But Athelstan, having defeated the Danes, styled himself King of all Britain.[54]

When the Tudors came to the throne it was jokingly said that the Welsh had conquered England. Eminent men of Welsh descent[55] used the expression *British Empire* in the reign of Elizabeth. Another great Queen called by its name—British Columbia. An earlier name was Nova Albion "(that is to say) new Englande."

When Drake entered the Pacific New Spain had been in existence since the conquest of Mexico; New France had been on the map for the greater part of the century; now there was to be a New England. "Noua Albion (that is to say) new Englande" appeared in Blundevile's *Exercises,* printed during Drake's lifetime.[56] John Smith applied the name *New England* to North Virginia, and it was adopted in the Charter of 1620, which defined the territory as extending from sea to sea. The minutes of the Council for New England record the fact that Nova Albion was considered as an alternative name. The northern boundary of New England extended from sea to sea in 48 degrees, where Nova Albion had appeared on the maps in the recorded latitude of Drake's northerly anchorage.[57]

A map in the British Columbia Archives shows the northern boundary of New England near the Pacific coast and, a degree to the north, the early stage of the present international boundary. This was suggested by the English as the northern boundary of

(54) *Rex Totius Britanniae* appeared on his coins.

(55) Such as Hakluyt and Dr. Dee. The latter used the expression in *The Art of Navigation, or the British Monarchy,* London, 1577. The book was dedicated to Sir Christopher Hatton, whose crest gave rise to the name of the *Golden Hinde.* She sailed from England as the *Pelican.*

(56) M. Blundevile. *His Exercises* . . . London, 1594. Extracts are given by Wagner, p. 312, etc.

(57) The connection seems evident when we remember that South Virginia had been extended from sea to sea, while North Virginia remained a strip on the Atlantic coast, bounded on the north by the 45th parallel. This line, extended to the west, would conflict at once with New France, and any attempt to define a common boundary would lead to complications. The "descriptions" in the second and third Virginia charters had been based on clearly defined and indisputable starting-points, and apparently this fundamental principle was accepted in the charter for New England. The northern boundary was placed in 48 degrees, where Nova Albion had appeared on early maps in the recorded latitude of Drake's northerly anchorage.

New France, which began with a line running south-westerly from the coast of Labrador, extended to 49 degrees and then to the west, leaving the French a theoretical strip of one degree. Through some strange alchemy the proposed northern boundary of New France became a southern bound of Canada, and the characteristic line of the great unfortified frontier.

This line has been regarded as a symbol of the friendly relations between the two great branches of the English speaking peoples, and it is linked in a curious way with their history. Alexander Brown, in *The Genesis of the United States*, traces the history of that country to the English struggle with Spain for a footing on the continent. It is now clear that the beginning of this struggle, and the genesis of "New England in America," can be traced to the summer of 1579. Others have suggested that the British Empire overseas began with Sir Humphrey Gilbert's act of possession in Newfoundland in 1583, but Drake had taken possession on the Pacific coast several years before, and the name of Nova Albion appeared on early maps in the recorded latitude of his northerly anchorage. It now begins to appear that this anchorage is still within the Empire. The joint origin of the two great democracies is thus linked with the origin of their common boundary.

> Time and the ocean and some guiding star,
> In high cabal have made us what we are.
>
> —*Sir William Watson.*[58]

Certain sketches of Drake's coat of arms show a star above the globe, but the stars above and below the fesse evidently refer to terrestrial accomplishments, the upper star indicating Nova Albion.

The events of a famous voyage around the world may well be commemorated in the three hundred and sixtieth year, as the circuit of the earth is 360 degrees. The *Golden Hinde* reached Nova Albion in June, 1579.[69] The Geographic Board of Canada

(58) Quoted by Winston Churchill in *Responsibilities of Empire*, London, 1937.

(59) June 10, according to the old style, is by our present reckoning June 20, eve of the longest day.

has accordingly, at the instance of the Province, named the highest mountain on Vancouver Island after Drake's ship, the *Golden Hinde*.[60]

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VICTORIA, B.C.

(60) The height of the mountain, 7,219 feet, was reported by Norman Stewart, B.C.L.S., in 1937. The names *Queen Bess*, *Grenville*, *Gilbert*, *Raleigh*, and *Sir Francis Drake* appeared on the map of British Columbia in 1933. The names are applied to certain of the Coast Mountains which are over 10,000 feet in height, with the exception of *Sir Francis Drake* which is distinguished in another way. It is suggested that an adjoining group, the highest within the Province, be named the *Albion Mountains*.

Albion, *the white land*, is the ancient name of Britain; linked through the Celtic *alb* with Alp, it forms a suitable mountain name. (*See* Eilert Eekwall, "Early Names of Britain," *Antiquity*, IV., No. 14, June 1930, p. 150.)

APPENDIX I.

THE GRENVILLE PROJECT AND THE DRAFT PLAN.

The draft plan of Drake's voyage shows that he was to pass through the Strait of Magellan and explore northwards along the coast "as of the other" to 30 degrees, and that the places to be visited were supposed to be not under the obedience of any Christian prince. The fact that the coast of Chile was under the obedience of Spain as far as 40 degrees south led Miss Taylor to infer that the draft plan referred to the coast of the Terra Australis, which was supposed to extend from Tierra del Fuego to the neighbourhood of New Guinea,[1] and beyond this to Locach, or Beach, which had attracted the attention of the learned Dr. Dee. She also inferred that Grenville was mainly interested in the Terra Australis, and that when the scope of the draft plan was extended to the Moluccas, Drake was to follow the imaginary shore in that direction.

Williamson has shown that the draft plan may have referred to the coast of Chile, as already mentioned, and Miss Taylor seems to admit the possibility in the *Pacific Historical Review*, quoted in note 7. Grenville's interest in South America is clearly indicated in the depositions given by Mrs. Nuttall in *New Light on Drake*, from which the following extracts are taken.[2]

When Drake raided the port of Callao, Oxenham was in the hands of the Inquisition at Lima, with the master of his ship and the pilot, John Butler. They were asked if Queen Elizabeth or any other person had proposed to establish settlements on the coast of the North Sea, or in the region of the Strait of Magellan, or on the coast of the South Sea. They knew of the Grenville project, and the master thought it referred to the South Sea. Oxenham's reference to the River Plate, the Strait, and the South Sea has already been quoted. Butler had heard that Grenville's settlement was to be ". . . on the coast of the North Sea, towards the River Plate, in a country of which they had reports, from some Portuguese, that it was very rich. The Queen had demanded that they were to give a security of thirty to forty thousand pounds that they would not touch lands belonging to King Philip, and on this account the expedition was frustrated, as aforesaid."

It is evident that Grenville proposed to take advantage of the fact that the lower reaches of the River Plate had been abandoned. The opportunity, however, was soon lost, for Buenos Aires was reoccupied in 1580. Communications were laid across the continent so that warning could be sent overland to Peru the moment an English ship appeared on the coast.[3]

For various reasons the significance of Grenville's project has been overlooked. The *Discourse* quoted in note 10 was printed in 1867, but Burghley's endorsement giving Grenville's name was not mentioned. The draft Charter was bound with the State Papers of 1590, but it referred to Richard Grenville . . . Esquire, and he had been knighted in 1577. Recent research

(1) *See* the reproduction of the western half of *Typus Orbis Terrarum*, facing p. 162.
(2) pp. 6–11.
(3) Corbett, p. 337.

has connected the Charter with the petition of 1574, mentioned in note 7, which refers to lands "beyond the equinoctial." The petition stressed the point that the expedition would merely "pass by" those countries already in occupation of Christian princes, and Miss Taylor has accordingly concluded that the Terra Australis was "the obvious objective of the proposed voyage: the still unoccupied parts of South America—Patagonia and Southern Chile—offered no attractions."[4]

The evidence of Butler and Oxenham makes it clear that the unoccupied parts of South America did present attractions. A colony near the River Plate would provide an approach to the Strait of Magellan, and if, as the maps seemed to indicate, a large part of Chile were available, the whole of the southern portion of the continent might be occupied. Such occupation would appear to control access to the Pacific, for the Cape Horn route had not been discovered. If the North-West Passage were not found, the southern colonies would be necessary in trading with Cathay, for as Williamson has pointed out, the English ships could not carry provisions for long voyages and leave room for cargoes. The idea of searching for the Passage from the west was practical from the seaman's point of view, as it appeared to lie in the zone of the westerly winds; for the same reason the idea of following the shore of the Terra Australis in a westerly direction was not practical, and it seems unlikely that the members of the Navy Board would instruct Drake to take such a course. There appears to be no direct evidence to show that Grenville was really interested in the imaginary continent, and it is more profitable to consider his project in connection with early ideas on colonization.

Rowse, in his admirable biography, has shown that Grenville was of a practical turn of mind, and Raleigh's right-hand man in the settlement of Virginia; he had early and responsible experience of a similar nature in Ireland, in partnership with Sir Warham St. Leger, the cousin of Lady Grenville's father. "The St. Legers [of Annery, in Devon] were a branch of the great Kentish family who had a long-standing connection with Ireland dating from the great Lord-Deputy, Sir Anthony St. Leger, who was the chief architect of Henry VIII's rule there."[5]

It is then to Grenville's experience in Ireland that we trace the ideas which are now revealed by the records of the Inquisition. Oxenham stated that Grenville had "applied to the Queen for a licence to come to the Strait of Magellan and to pass to the South Sea, in order to search for land or some islands where to found settlements, *because, in England, there are many inhabitants and but little land.*" The shipmaster understood "that if the Queen should die, many will come and pass through the Strait and found settlements . . . *England is so full of people that there are many who wish to go to other parts.*" And, in conclusion, Drake had often said to Oxenham "that if the Queen would grant him the licence he would pass through the Strait of Magellan and found settlements over here in some good country."[6]

(4) *More Light on Drake*, p. 136.
(5) Rowse, p. 58.
(6) Nuttall, pp. 9–11. The italics are mine.

APPENDIX II.

EXCERPTS FROM EARLY ACCOUNTS OF DRAKE'S VOYAGE.

(*a.*) THE NATIVE HOUSES OF CALIFORNIA.

From *The World Encompassed by Sir Francis Drake*, London, 1628.

In recompence of those things which they had receiued of vs, as shirts linnen cloth, &c. they bestowed vpon our generall, and diuerse of our company, diuerse things, as feathers, cawles of networke, the quiuers of their arrowes, made of fawne-skins, and the very skins of beasts that their women wore vpon their bodies. Hauing thus had their fill of this times visiting and beholding of vs, they departed with ioy to their houses, which houses are digged round within the earth, and haue from the vppermost brimmes of the circle, clefts of wood set vp, and ioyned close together at the top, like our spires on the steeple of a Church: which being couered with earth, suffer no water to enter, and are very warme, the doore in the most part of them, performes the office of a chimney, to let out the smoake: its made in bignesse and fashion, like to an ordinary scuttle in a ship, and standing slopewise: their beds are the hard ground, onely with rushes strewed vpon it, and lying round about the house, haue their fire in the middest, which by reason that the house is but low vaulted, round and close, giueth a maruelous reflexion to their bodies to heate the same.

From *The Famous Voyage of Sir Francis Drake*, in Richard Hakluyt's *The Principall Navigations, Voiages and Discoveries of the English Nation*, London, 1589.

. . . The presents which they sent to our Generall, were feathers, and cals of networke.

Their houses are digged round about with earth, and haue from the vttermost brimmes of the circle, clifts of wood set vpon them, ioyning close together at the toppe like a spire steeple, which by reason of that closenes are very warme.

Their beds is the ground with rushes strowed on it, and lying about the house, haue the fire in the middest. . . .

(*b.*) DRAKE'S COURSE.

From *The World Encompassed by Sir Francis Drake*, pp. 48–50.

From Guatulco we departed the day following, viz., Aprill 16, setting our course directly into the sea, whereon we sayled 500 leagues in longitude, to get a winde: and betweene that and June 3, 1400 leagues in all, till we came into 42 deg. of North latitude, where in the night following we found such alteration of heate, into extreame and nipping cold, that our men in generall did grieuously complaine thereof, some of them feeling their healths much impaired thereby; neither was it that this chanced in the night alone, but the day following carried with it not onely the markes, but the stings and force of the night going before, to the great admiration of vs all; for besides that the pinching and biting aire was nothing altered, the very roapes of our ship were stiffe, and the raine which fell was an vnnatural congealed and frozen substance, so that we seemed rather to be

in the frozen Zone then any way so neere vnto the sun, or these hotter climates.

Neither did this happen for the time onely, or by some sudden accident, but rather seemes indeed to proceed from some ordinary cause, against the which the heate of the sun preuailes not; for it came to that extremity in sayling but 2 deg. farther to the Northward in our course, that though sea-men lack not good stomaches, yet it seemed a question to many amongst vs, whether their hands should feed their mouthes, or rather keepe themselues within their couerts from the pinching cold that did benumme them. Neither could we impute it to the tendernesse of our bodies, though we came lately from the extremite of heate, by reason whereof we might be more sensible of the present cold: insomuch as the dead and sencelesse creatures were as well affected with it as ourselues: our meate, as soone as it was remooued from the fire, would presently in a manner be frozen vp, and our ropes and tackling in few dayes were growne to that stiffnesse, that what 3 men afore were able with them to performe, now 6 men, with their best strength and vttermost endeauour, were hardly able to accomplish: whereby a sudden and great discouragement seased vpon the mindes of our men, and they were possessed with a great mislike and doubting of any good to be done that way; yet would not our General be discouraged, but as wel by comfortable speeches, of the diuine prouidence, and of God's louing care ouer his children, out of the Scriptures, as also by other good and profitable perswasions, adding thereto his own cheerfull example, he so stirred them vp to put on a good courage, and to quite themselues like men, to indure some short extremity to haue the speedier comfort, and a little trouble to obtaine the greater glory, that euery man was throughly armed with willingnesse and resolued to see the uttermost, if it were possible, of what good was to be done that way.

The land in that part of America, bearing farther out into the West then we before imagined, we were neerer on it then wee were aware; and yet the neerer still wee came vnto it, the more extremitie of cold did sease vpon vs. The 5 day of Iune, wee were forced by contrary windes to runne in with the shoare, which we then first descried, and to cast anchor in a bad bay, the best roade we could for the present meete with, where wee were not without some danger by reason of the many extreme gusts and flawes that beate vpon vs, which if they ceased and were still at any time, immediately upon their intermission there followed most uile, thicke, and stinking fogges, against which the sea preuailed nothing, till the gusts of wind againe remoued them, which brought with them such extremity and violence when they came, that there was no dealing or resisting against them.

In this place was no abiding for vs; and to go further North, the extremity of the cold (which had now vtterly discouraged our men) would not permit vs; and the winds directly bent against vs, hauing once gotten vs vnder sayle againe, commanded vs to the Southward whether we would or no.

From the height of 48 deg., in which now we were, to 38, we found the land, by coasting alongst it, to bee but low and reasonable plaine; euery hill (whereof we saw many, but non verie high), though it were in June, and

the sunne in his neerest approch vnto them, being couered with snow. In 38 deg. 30 min. we fell with a conuenient and fit harborough, and June 17 came to anchor therein, where we continued till the 23 day of July following. During all which time, notwithstanding it was in the height of summer, and so neere the sunne, yet were wee continually visited with like nipping colds as we had felt before; insomuch that if violent exercises of our bodies, and busie employment about our necessarie labours, had not sometimes compeld us to the contrary, we could very well haue been contented to haue kept about us still our winter clothes; yea (had our necessities suffered vs) to haue kept our beds; neither could we at any time, in whole fourteene dayes together, find the aire so cleare as to be able to take the height of sunne or starre.

From *The Famous Voyage of Sir Francis Drake.*

When our Generall had done what hee would with this CACAFUEGO, he cast her off, and wee went on our course still towards the West, and not long after met with a ship laden with linnen cloth and fine CHINA dishes of white earth, and great store of CHINA silks, of all which things wee tooke as we listed. China silks.

The owner himselfe of this shippe was in her, who was a Spanish Gentleman, from whome our Generall tooke a Fawlcon of golde, with a great emraude in the breast thereof, and the Pilot of the shippe he tooke also with him, and so cast the shippe off.

This pilot brought vs to the hauen of GUATULCA, the towne whereof as he told vs, had but 17. Spaniards in it. Assoone as we were entred this hauen wee landed, and went presently to the towne, and to the Towne house, where we found a Judge sitting in iudgement, he being associate with three other officers, vpon three Negroes that had conspired the burning of the Towne: both which Judges, and prisoners we tooke, and brought them a shipboord, and caused the chiefe Judge to write his letter to the Towne, to command all the Townesmen to auoid, that we might safely water there. Which being done, and they departed, we ransaked the Towne, and in one house we found a pot of the quantitie of a bushell, full of royals of plate, which we brought to our shippe. Guatulca.

And here one THOMAS MOONE one of our companie, tooke a Spanish Gentleman as he was flying out of the towne, and searching him, he found a chaine of golde about him, and other iewels, which he tooke, and so let him goe.

At this place our Generall among other Spaniards, set a shoare his Portingall Pilot, which he tooke at the Islands of Cape VERDE, out of a shippe of S. MARIE porte of Portingal, and hauing set them a shoare, we departed hence, and sailed to the Island of "CANON, where our General landed, and brought to shoare his owne ship, and discharged her, mended, and graued her, and furnished our shippe with water and wood sufficiently. The Portingall Pilot set on land. "The Island of Cockles.

And whiles we were here, we espied a shippe, and set saile after her, and tooke her, and founde in her two Pilots, and a Spanish Gouernour, going for the Islands of the PHILIPPINAS: we searched the shippe, and tooke some of her marchandizes, and so let her goe. Our Generall at this place, and time, thinking himselfe both in respect of his priuate iniuries receiued A ship with a gouernour for the islands of Philippinas.

from the Spaniards, as also of their contempts and indignities offered to our countrey and Prince in generall, sufficiently satisfied, and reuenged: and supposing that her Maiestie at his returne would rest contented with this seruice, purposed to continue no longer vpon the Spanish coasts, but began to consider and to consult of the best way for his Countrey.

A purpose in Sir Francis to returne by the Northwest passage.

He thought it not good to returne by the Streights, for two speciall causes: the one, least the Spaniards should there waite, and attend for him in great number and strength, whose hands he being left but one shippe, could not possibly escape. The other cause was the dangerous situation of the mouth of the Streights in the south side, where continuall stormes raining and blustering, as he found by experience, besides the shoales, and sands vpon the coast, he thought it not a good course to aduenture that way: he resolued therefore to auoide these hazards, to goe forward to the Islands of the MOLUCCAES, and therehence to saile the course of the Portingals by the Cape of BONA SPERANZA.

Upon this resolution, he began to thinke of his best way to the MOLUCCAES, and finding himselfe where he nowe was becalmed, he sawe, that of necessitie he must be forced to take a Spanish course, namely to saile somewhat Northerly to get a winde. We therefore set saile, and sailed in longitude 600. leagues at the least for a good winde, and thus much we sailed from the 16. of Aprill, till the 3. of June.

June. Sir Francis Drake sailed on the backe side of America to 42. deg. of Northerly latitude. 38. degrees.

The 5. day of June, being in 42 degrees towards the pole Arctike, we found the aire so colde, that our men being greeuously pinched with the same, complained of the extremitie thereof, and the further we went, the more colde increased vpon vs. Whereupon we thought it best for that time to seeke the land, and did so, finding it not mountanous, but lowe plaine land, & clad and couered ouer with snowe, so that we drewe backe againe without landing, till we came within 38. degrees towards the line. In which heigth it pleased God to send vs into a faire and good Baye, with a good winde to enter the same.

From the *First Declaration of John Drake*, as printed in *New Light on Drake*, by Zelia Nuttall, London, 1914, p. 31.

They sailed out at sea always to the north-west and north-north-west the whole of April and May until the middle of June, from Guatulco, which lies in 15 degrees north, until they reached 48 degrees north. On their voyage they met with great storms. All the sky was dark and full of mist. On the voyage they saw five or six islands in 46 and 48 degrees. Captain Francis gave the land that is situated in 48 degrees the name of New England. They were there a month and a half, taking in water and wood and repairing their ship.

From the *Second Declaration of John Drake*, as printed in *New Light on Drake*, p. 50.

Then they left and sailed, always on a wind, in a north-west and north-north-westerly direction, for a thousand leagues until they reached forty-four degrees when the wind changed and he went to the Californias where he discovered land in forty-eight deg. There he landed and built huts and remained for a month and a half, caulking his vessel. The victuals they found were mussels and sea-lions.

EARLY SMELTERS IN BRITISH COLUMBIA.

We shall begin this story with the very blunt statement that as many as nineteen smelters have been built, from time to time, to treat the ores of British Columbia's mines. The bluntness is intentional and the number correct.

Those of our readers whose interest in the subject is more than casual, and those who have some knowledge of the needs and functions of smelters, may become cynical or be shocked by the further statement that the nineteen are now reduced to one —the healthy, active, and respected giant at Trail, upon whose continued well-being so many of our people confidently depend.

Collectively our smelters, together with perhaps a dozen foreign ones, have been the means of making available for use all of the base metals—copper, lead, and zinc—nearly all the silver, and probably at least half the gold which our lode mines have yielded during the last fifty years. For the sake of those who prefer their facts in the form of figures, it may be well to translate this statement into dollar values:—

PRODUCTION IN BRITISH COLUMBIA, 1887–1937.[1]

	Value in Millions of Dollars.	Per Cent.
Smelter, base metals	672	66
Smelter, silver	129	13
Smelter, gold	104	10
Mills, gold	104 (plus)	11
	1,009	100

In other words, our "base" metals have been worth twice as much in the markets where they were sold as all our "precious" gold and silver. In the present connection, however, the important point is not merely their great value, but the fact that they are the basis of any properly conceived smelter scheme.

Ten of our nineteen smelters were completed before the close of 1900, and at so late a time as the present may properly be

(1) *See* the interesting table printed in the *Annual Report of the Minister of Mines . . . for . . . 1937*, Victoria, 1938, Part A, p. 15.

regarded as early. The six of these latest in date, including the plants at Pilot Bay, Nelson, Trail, Grand Forks, Greenwood, and Vananda (Texada Island), have been sufficiently accounted for by other writers. We are left, therefore, with the task of trying to give a more or less connected historical account of those at Vancouver, Revelstoke, and Golden, and, finally, of the almost mythical plant at Woodbury, on Kootenay Lake. These four—the real pioneers amongst the smelters of the Province—are now almost forgotten by those who ever heard of them, and are quite unknown, even among mining men, to the present generation.[2]

It is common knowledge that the construction of railways in the north-western United States, during the early eighteen-eighties, gave a great impetus to the activities of prospectors. The result was the discovery of valuable mineral deposits, sufficient to justify the building of smelters in western Montana as early as 1887. During the same period the Canadian Pacific Railway was under construction, and along its route, and within the twenty-mile band of country on each side of it in British

(2) Passing reference should also be made to a fifth smelter, insignificant in size, but apparently the earliest plant of its kind erected in British Columbia. All the information at present available concerning it is contained in a newspaper item, which reads as follows:—

"East Kootenay was the first section of the interior of British Columbia to attract the attention of the prospector. The exposures of silver-lead ores on Jubilee and Spillimachene mountains, 42 miles south of Golden, on the Columbia River, were the first mineral locations to attract attention. . . . An old time prospector named John McRae conceived the idea of mining and smelting this ore on the ground and he built a smelter of stone and iron on the south side of the Spillimachene river, near its junction with the Columbia. A gang of men employed by the government to rebuild the bridge over the Spillimachene dismantled this old smelter last week to supply stone for the piers of the new bridge and bore testimony to the excellence of the workmanship shown in its construction.

"This smelter was built in 1883 and is said to have been the pioneer smelter in British Columbia. The builder and promoter, John McRae, died about ten years ago, leaving this smelter and the development work he did on Spillimachene and Jubilee mountains as the monuments of his work as a pioneer prospector of Kootenay."—*Golden Star*, February 10, 1906.

An item which may refer to this smelter is found in the Kamloops *Inland Sentinel*, March 27, 1884. There is no reference to it in the annual reports of the Department of Mines. John McRae died in Kamloops on May 19, 1895.

Columbia known as the "Railway Belt," prospectors were quite as busy as their confreres to the south.

Although our northern men found little if any ore which could be called "very rich," many of them met with much encouragement for several years, as may be gathered from the reports of the local representatives of the Provincial Department of Mines, printed in the annual reports of the Minister of Mines, some excerpts from which follow:—

1884.

In the Kicking Horse region 135 mineral claims have been located in different directions. . . .

Upon the Spallumcheen River, where locations extend for over four miles, considerable work has been done upon several of the claims. The ore, a free milling, low grade, galena, is abundant. . . . (p. 424.)

1885.

The Pioneer Mining Co. . . . has the plant for a ten-stamp quartz mill upon the ground to be placed in position next spring, when it is also intended to have a smelter constructed. . . . The ore is argentiferous galena; there is a large body of it, assaying from 10 to 180 ounces of silver to the ton. (p. 498.)

1886.

Sixty mineral claims have been recorded in this section [Illecillewaet] and settlement work done on many of them. . . . The ores seem to be rather silver than gold-bearing and, for the most part, smelting ores. . . . To utilize these mines a local smelter is essential. (p. 204.)

1887.

The shipments of ore . . . have been made solely by the above-named Company [the Selkirk Mining and Smelting Company, which had no smelter but did have a sampling plant at Illecillewaet Station], and consist of about 250 tons of selected ores, between the 25th July and 7th of November, which represent a gross value of about $21,000. . . . (p. 265.)

A further and vital consideration is the provision of a smelter. In connection with this question it has to be borne in mind that nearly ¾ of the ore found thus far will not average over 30 or 35 ounces of silver to the ton, and consequently will not bear expensive transportation. (p. 267.)

We conclude from these quotations—and many more could be given, were it necessary—that the prospectors had done their part, and that the agents of the Government were doing their best to bring about the establishment of a smelting industry through their reports to the Minister, and probably in other ways as well. As will be seen later, their expressed opinions as to the necessity of local smelters cannot have been based on either

experience or sound judgment. Nevertheless, those opinions seem not only to have been accepted and published, but to have become almost an incitement to riot among those who would invest in smelters; for three such plants were promoted in two years—1888 and 1889—for construction in a part of British Columbia which, up to the present at least, has not proved itself capable of supporting even one of them.

In 1886 the Legislature made its contribution by passing *An Act to encourage the erection of Smelting Works* (49 Vict., c. 18), which received the Royal Assent on April 6. This provided for the payment of a bonus of not more than $7,000 to any approved person after he had erected smelting-works "capable of crushing, reducing and treating at least thirty tons of ore per day of twenty-four hours," and after "not less than one thousand tons of ore shall have been first crushed, reduced and treated."

Here was further incitement to smelter-builders in the guise of a pleasing morsel, which the Legislature resolved to make somewhat more sustaining at its next session.

What technical talent, if any, was engaged by the Minister of Mines in these early days is not evident; but apparently he was convinced that whilst the reported mineral discoveries in the Railway Belt were of silver-lead ores, there might be found ores of other metals requiring treatment otherwise than by smelting. For example, the prospectors might discover workable deposits of siliceous or pyritic gold ore, to which a process known as Newberry-Vautin chlorination could be usefully applied, in British Columbia as elsewhere. The Legislature evidently agreed that this view was sound, and on April 7, 1887, the Royal Assent was given to *An Act to aid the Development of Quartz Mines* (50 Vict., c. 24), which empowered the Government to guarantee advances to quartz-mining companies to a total not exceeding $60,000. Clause 11 of this Act provided that a grant of money, by way of bonus, not exceeding $12,000, could be made to any company which erected a "quartz mill or smelting works, or both combined, capable of properly treating and reducing not less than twenty tons of ore per day," after 2,400 tons of ore had been so reduced.

The next action favouring actual construction of smelting-works was taken in the City of Vancouver, where the ratepayers approved By-law 42, prepared for that purpose, on October 10, 1887. Under its terms the city undertook to grant a bonus of not more than $25,000, and exemption from municipal taxation for a period of ten years, to such individual or company as might take advantage of the Provincial statutes referred to and expend $75,000 upon the construction of the necessary works within the city's limits.

VANCOUVER.

With this substantial assistance in prospect, Claude Vautin, of London, an important figure in the mining world of the eighteen-eighties, commenced negotiations which led to the erection of a smelter and chlorinating works at Vancouver. Through his attorney, W. J. Steele, he first entered into an agreement with the city, dated February 28, 1888, designed to secure the promised bonus of $25,000. Vautin undertook to erect works costing $75,000, and to deposit $5,000 as a guarantee that the agreement would be carried out. In return he was to receive the promised bonus, but only after the works were in complete running order and 1,000 tons of ore had been reduced and chlorinated.

On April 18, 1888, Vautin concluded a further agreement with the Government of British Columbia, intended to bring him the Provincial bonus of $12,000. In return he undertook to commence work within four months and complete within one year " smelting and chlorinating works capable of properly treating and reducing not less, collectively, than forty tons of ore per day," and promised that these works would " remain and be operated for one year in the place where they were first erected." Other clauses provided that Vautin was to deposit £500 to the credit of the Province as a guarantee of good faith, and that the cost of the smelter was to be not less than $48,000.[3]

Three weeks after the signing of the agreement with the Government, the British Columbia Smelting Company, Limited, was incorporated in England (May 9, 1888), for the purpose of building a smelter at Vancouver. According to the prospectus

(3) *See* Vancouver *Daily World*, March 29, 1889, which reviews the agreement with the city in detail and prints that with the Government in full.

the capital was to consist of £25,000 in preferred shares and £40,000 in common shares, all of which latter were to be issued to Claude Vautin. The prospectus informs us further that the company had acquired a three-quarters interest in the Monarch mine, near Field, B.C., and in it was printed a report by E. J. Dowlen, dated May 1, 1888, to the effect that " at first " the mine could produce 40 tons of 55% lead ore per day, which, with 10 tons of gold and silver ores—to be purchased and to yield $15 per ton profit—indicated a supply of ore sufficient for a plant with a nominal daily capacity of 50 tons. But Mr. Dowlen's report, as given in the prospectus, reveals neither the source from which the gold and silver ores were to be purchased, nor the zinky and sulphurous nature of the product of the Monarch mine—both omissions of vital importance as will be seen later.

We need not concern ourselves with such technical matters, however. The flotation of the company in London seems to have been satisfactory, and the management proceeded to secure a site and go ahead with clearing and construction. Late in June, 1888, E. J. Dowlen arrived from England and announced that he had stopped at Chicago *en route*, and there arranged for the early shipment of the furnace and other equipment required for the plant.[4] " The work of clearing the site for the smelter is being pushed vigorously," the *News-Advertiser* noted on July 21, " and all day yesterday a dense column of smoke arose from the clearing fires." The site selected consisted of parts of Lots 182 and 183, containing more than 31 acres in all.[5] Late in July the company took offices in " the new Vancouver Block," better known as the old Springer and Van Bramer building, which is still standing at the corner of Cordova and Cambie Streets.[6]

Apparently the smelter was completed about the end of the year. " The only thing now stopping the Smelter from starting work is the want of water," the Vancouver *World* stated on January 10, 1889. " Tons of galena ore lie side-tracked ready for use. An effort is being made to get water from the small rivulet which passes along in close proximity to the buildings." To carry this scheme through required almost a month, but water

(4) Vancouver *Evening Herald*, June 30, 1888.
(5) Vancouver *Daily World*, December 17, 1889.
(6) Vancouver *News-Advertiser*, July 26, 1888.

became available on February 6, and on the 14th, at noon the smelter was blown in.

The following description of the plant and its equipment is worth placing on record:—

The works are constructed in the most substantial manner. The foundations are of solid granite and brick masonry. The main building at present is 66 x 56 feet and is divided into boiler and engine rooms, sampling, charging and furnace departments. Besides, a space is arranged for a Newberry-Vautin chlorinating plant, which is now on its way from England. In the principal room is a wrought-iron water-jacket furnace, with 7 tuyeres of the most modern and improved description, carrying a brick shaft 9½ feet high. At the tuyeres the furnace measures 60×36 inches. Above it is fitted with a telescopic detachable self-raising hood, enabling the man feeding to work his charge all round the stack and greatly adding to the convenience of the furnace in other ways. There is also an ingenious way of carrying off the smoke by means of connecting the flue into a large brick dust-chamber, and finally through a stack 60 feet high. This furnace is destined to treat from 50 to 60 tons of ore per day.

Leaving the furnace-room the visitor proceeds to the engine-room, where is found a 35 h.p. side-valve engine, 12-inch cylinder and 16-inch stroke, which runs a blower and an eccentric patent crusher in the adjoining sampling-room. Another engine of 15 h.p., of the same type runs a pair of rolls, 17 x 10 inches, and elevates the hoist, carrying the charges from the ground floor to the feed floor.

In the boiler-room adjoining there is one tubular steam boiler, 54-inch diameter, 16 feet in length, of 60 h.p., containing 44 flues, 3½ inches in diameter. This boiler has been tested to 124 pounds steam pressure, and is in every respect of the best possible manufacture. In this room is also a tubular heater, one No. 2 feed pump, and a McAvity steam ejector.

The ore bins are so arranged that the ore can be dumped direct from the cars into them.

The wharf, general office and assay office erected by the company are conveniently situated, and are substantial and commodious in every respect. . . . The works would have been in operation sooner had the company not been delayed for water. The number of men employed at present is about 40, under the foreman, W. McLaren, and the general directions and management of Messrs. Geo. DeWolff and E. Dowlen.

. . . . . .

At noon the furnace was well charged and the blast in full operation. As the ore got heated up the stone passed away into "slag," whilst the molten lead was poured off into moulds. There was no special ceremony, but a large number of men were on the scene watching the various stages of the process. The result of the test is not yet made known.[7]

(7) Vancouver *Daily World*, February 14, 1889.

A less roseate picture of what happened when operation was started is found in a document given to the author, which he regards as a trustworthy statement of the facts, but the source of which, for obvious reasons, need not be revealed:—

On February 14th we started the furnace and, after running for some few hours, the place caught fire from the iron flue running from furnace to dust chamber getting red hot, and the furnace was run down. Mr. X had the flue lowered and started again; but the flue again got red hot and the furnace was again shut down.

Mr. X then had the iron flue taken out and the aperture bricked up solid and started again.

She made slag for about two hours, when she froze up and Mr. X refused to try her again, saying " the ore must be roasted before being smelted."

The Local Board offered to get thirty tons of slag from Frisco to start on. . . . At first X consented to this but afterward refused and he went off at a moment's notice to London.

The Local Board . . . sent off a man who was next to X with samples to Frisco to consult with Prof. Thos. Price who made a working test of the ore and certified that it could be smelted without roasting but that it wanted silica.

We had as fluxes limestone and scrap iron. Our ore is galena in limestone gangue.

We have not been able to purchase outside ore for a mixture and as [the] London Board would not give us authority to get the funds from the Bank here to pay for them, we had only our own ore to put in the furnace.

A newspaper of the day relates that the smelter was in operation and attracted many visitors on Sunday, February 24, but it was shut down the next day, " the ore being found to contain too large a percentage of sulphur. The company have not yet definitely decided what course they will take, but it will probably be found necessary to ' roast ' the ore in future before reducing it to bullion."[8] As the description of the plant already quoted indicates, it possessed no equipment for roasting ore, and of necessity it closed down for an indefinite period. Thus it was that the initial failure to take into account the sulphurous nature of the only ore available—that from the Monarch mine—wrecked the whole project of a smelter at Vancouver.

The affairs of the company went rapidly from bad to worse. In March, 1889, all its employees in British Columbia except a local secretary and caretakers at the mine and smelter were dis-

(8) *Ibid.*, February 26, 1889.

missed.[9] In April the secretary hopefully informed the City Council that the works were completed, presumably in the expectation that the bonus of $25,000 would be paid; but with the smelter idle the Council took no notice.[10] This attempt to raise funds having failed, the smelter property was mortgaged in May.[11]

The London Board now decided that it was advisable to secure an outside opinion by an expert upon the whole situation, and a survey of the company's position and prospects was made by C. A. Judkins, of Leadville, Colorado. His very lengthy report was submitted to a meeting of the shareholders held in London on September 2, 1889. Its concluding paragraph read as follows:—

To summarize, I will briefly state that I find you have a smelter nearly complete at Vancouver, a good locality; that the machinery is ample, and suitable to run on an oxydized ore, and that with the addition of roasters it will run on a good sulphide ore; that you have a very accessible lead mine at Field, which can produce, with development, large quantities, say 35 to 45 per cent. of lead ore, very low in silver though; that this ore can be treated in your smelter, when mixed with other desirable smelting ore, and roasted; that concentration will eventually have to be considered, but not now; that you can probably obtain suitable ores and fluxes; that you must buy all good smelting ore which is offered for sale in your market, if possible; that $200,000 capital, at least, is necessary to complete your works, open the mine, and run the business; that your 50 ton furnace will probably treat from 30 to 40 tons a day, depending upon the mixture of the ore smelted, and there is no hope of getting any change so that you could run 50 tons daily; that the business is good, legitimate, and will pay a good profit when established on a scale larger than that at present contemplated; that the affair has been simply horribly mismanaged; that the ruling rates of wages in this country are high, common miners receiving from $3 to $3.50 per day; foremen, engineers, and furnacemen about $4. No good American labor can be had for less, and I do not think it advisable to undertake to employ Chinese labor even if it can be done; that you can obtain good management, if desired, and you are willing to pay for it, in this country.[12]

Nothing is to be gained by describing the acrimonious discussions which characterized the London meeting, but one or two of the facts brought to light are of interest. The chairman stated that shares to a total of £23,580 had been fully paid up; that an

(9) *Ibid.*, September 20, 1889.
(10) *Ibid.*, April 2, 1889; and see the further reference, August 14, 1889.
(11) *Ibid.*, December 17, 1889.
(12) *Ibid.*, September 20, 1889.

additional £7,400 had been borrowed from the Bank of British Columbia, and that practically all the total of £30,980 thus made available had been expended. Claude Vautin, in a letter written from the Transvaal, urged that a great effort be made to retain the property. Vautin owned 5,000 preference shares, but seems to have had little to do with the management of the company, which appears to have been fully as bad as Judkins' report stated. Far too little discretion and authority had been given to the local representatives by the London Board, which knew little about conditions in British Columbia, with the result that unsuitable machinery had been purchased and large sums wasted in other ways.

In the end it was decided to try and persuade the bank to delay foreclosure, and the meeting adjourned.[13] The resumed session held on October 31 proved even more stormy and futile. The London Board again attacked the Vancouver management and the shareholders rebelled and passed a resolution asking the local directors—the Hon. Forbes G. Vernon and Major Wilson—to withdraw their resignations and continue to watch over the company's affairs, but nothing of practical importance was accomplished.[14]

In December, 1889, the plant in Vancouver was sold at auction by order of the Bank of British Columbia. The purchaser was Thomas Dunn, and the price $39,500.[15] The end of the story is recalled by W. C. Ditmars, a member of the old contracting firm of Armstrong & Morrison, as follows:—

> In 1899, W. H. Armstrong and M. J. Haney, a contractor of Toronto, bought the B.C. Smelting property on Powell Street as a speculation. They tore down the buildings, and I recall that there was a big steel jacketed tank, lined with lead. They took that down too, and we took it to our plant, and sold the lead to a junk man.
>
> Armstrong and Haney kept the property for a couple of years or so, and then sold it to P. Burns & Co. There were no buildings on it at the time they sold it.[16]

The fact that there had been a smelter in Vancouver in 1889 was apparently soon forgotten. Even so long ago as 1904, an

(13) *Ibid.*

(14) *Ibid.*, November 19, 20 and 25, 1889.

(15) *Ibid.*, December 23, 1889.

(16) W. C. Ditmars to J. S. Matthews, City Archivist, Vancouver.

article in a technical journal which professed to review the history of smelters and smelting in British Columbia contained no reference to the fact that it had ever existed.[17] It is only necessary to add that there is no evidence that either the Provincial Treasury or the city ever suffered financially in this lost cause of a smelter at Vancouver.

REVELSTOKE.

To what extent, if any, the erection of a smelter at Vancouver may have affected the promotion of like enterprises elsewhere we cannot say. It is apparent, however, that because of the continued activity of prospectors and public interest in their discoveries, the Dominion Government could not long remain indifferent to the action taken by British Columbia in fostering the mining and smelting industry. It showed its sympathy, not by offering money bonuses, but by means of grants of land to those who might apply for it, under certain conditions.

The first to take advantage of the offer was a company headed by Lionel R. C. Boyle, of London and Revelstoke, and known as the Kootenay (British Columbia) Smelting and Trading Syndicate, Limited. It was incorporated in London on February 21, 1889, its declared purpose being the erection of "Smelting Works at Revelstoke or Golden City or other places in the Kootenay District or elsewhere on or near the Canadian Pacific Railway. . . ." The authorized capital was £40,000.

In due course the company made application to the Minister of the Interior at Ottawa for a grant of land at Revelstoke, and the Minister referred the matter to the Privy Council for approval in the following terms:—

> The Minister is of opinion that it is desirable to encourage the erection of such works to aid the development of the Mineral resources of that portion of the Country, which are known to be very valuable, and he therefore recommends that authority be given for the making of a free grant of three hundred and twenty acres of land described hereunder, subject to the rights of any settlers who may be found thereon, to the "Kootenay (B.C.) Smelting and Trading Syndicate" upon the completion thereon of smelting and reduction works of a character suitable for the economical reduction of the low grade ores carrying gold or silver, or both, found within the Railway Belt in British Columbia and the operation of the said works thereafter.

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(17) *See* W. M. Brewer, "Smelters and Smelting Practice in British Columbia," in *Engineering Magazine*, 28 (1904–05), pp. 333–347.

This grant was approved by the Governor-General in Council on October 15, 1889.[18] The site selected for the plant was on the south side of a sharp bend in the left bank of the Columbia River, about three-quarters of a mile west of the Canadian Pacific Railway's station at Revelstoke. Although in later years the site proved an unwise selection because of damage due to encroachment by the river, it was chosen because it favoured the handling of any ore which might be received from the mining areas to the south, with which, at the time, there was no means of communication other than by river steamers.

Construction of the smelter proceeded rapidly, and it was nearing completion by the end of 1889. No description of the finished plant is available, but we know that the main smelter building was intended to be " 180 feet by 36 feet, besides assay building and offices, and engine and boiler room 24 x 24 feet."[19] The cost of the works was stated to be over $75,000.[20]

The company was now in a position to claim title to the smelter site from the Dominion Government, and on March 8, 1890, the Governor-General in Council approved a recommendation, based upon a memorandum submitted by the Minister of the Interior, which read in part as follows:—

> The Minister further states that the Superintendent of the Company has advised that the Company have complied with the terms of the Order in Council of the 15th October last, with the exception of building a few feet of the iron stack, to be placed on the smelting and roasting furnaces, and he states that the Company now desire that the patent for the land described in the Order in Council of the 29th October last be issued in their favor.
>
> The Minister recommends that the land in question be conveyed to the Company upon receipt by him of a report from the Superintendent of Mines of the Department of the Interior confirming the report made by the Superintendent of the Company.[21]

In due course confirmation was secured and letters patent were issued on July 15, 1890. So here was another smelter and one, as the author remembers it in operation, sufficiently well planned and equipped, and under the experienced technical con-

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(18) P.C. No. 2425. An error in description was corrected in a subsequent order, P.C. No. 2501, dated October 29, 1889.

(19) Vancouver *Daily World*, May 28, 1889.

(20) *Ibid.*, December 10, 1889.

(21) P.C. No. 612.

trol of Dr. J. Campbell as manager, and Mr. F. Roeser, both from Colorado.

Limestone was available locally, iron ore (magnetite) could be had from a short distance west of Kamloops when required; and as for fuel, coke was secured from the United States (though at a price!) and charcoal was made on the premises. Everything essential was in sight except an adequate supply of ore.

Some ore reached the plant even before the smelter was completed, the first shipment arriving on Wednesday, November 20, 1889. The following details have a certain historical interest:—

> The first car of ore . . . was switched to the sampling works on Wednesday. It was unloaded on Thursday and on Friday was put through the crushing process. The time consumed was two hours and twenty minutes for fifteen tons of ore, at the rate of about 60 tons in ten hours. Dr. Campbell is well satisfied with the initial trial, but expects the machinery will work more expeditiously after it has been in operation a few days. . . . This ore is from the Fish Creek mine, known as the Dunvegan, of Bain, Boyd & Co., and about 135 tons more will follow this to complete the contract by January 1st.[22]

But 150 tons of ore were far from being sufficient to justify operation of the smelter. Foreseeing this important need, the company had formed a subsidiary in London, the Revelstoke Mining Company, Limited, with the object of acquiring and developing prospects to the status of mines. It made scores of examinations, took a number of options to purchase, and carried out a considerable amount of development; but "it exercised none of the options and found nothing to justify the absurdly high prices asked for prospects in these new camps," where little was yet known of the nature of the ore deposits or their capacity to produce.

But even if a supply of ore had become available in the Kootenay Lake or Slocan areas, there was at first no adequate means of transporting it to Revelstoke at reasonable cost. Nelson, on Kootenay Lake, was not connected by rail with Robson, on the Columbia River, until the early summer of 1891, and there was no railway from the Slocan to Nakusp until 1893.

In spite of this discouraging outlook, however, several hundred tons of ore had been accumulated from Field, and other sources on the main line of the Canadian Pacific. Roasting of

(22) Vancouver *Daily World*, November 26, 1889.

this was started on April 13, 1891, though there was still insufficient on hand to justify smelting it. The first ore treated was from the Monarch mine, at Field.[23]

In the meantime, the shareholders of the company were becoming impatient and anxious for favourable news, in consequence of which feeling the London directors ordered smelting to be started, "even if only for a short run."[24] The run was accordingly begun on Monday, July 20, 1891, and presumably it continued, with the usual minor interruptions, until all the available ore had been treated. The following account of the blowing-in of the smelter taken from the *Kootenay Star*, may be of interest:—

> On Monday fires were started in the furnace, and for two days following the firing continued. Then the furnace was closed down, it being heated and tons of bar lead thrown into it, and soon after the ore charcoal, coke, limestone, sand, etc., were shovelled into the caldron of fire. Since that time this shovelling process has been continued day and night. The air from the bellows helped the fierce fire, and on Thursday the first bullion was drawn from the big crucible. The "slag" also flowed freely, and Dr. Campbell was covered with smiles, soot and perspiration, when he told a *Star* representative with evident satisfaction that there was the first slag drawn from a smelter in British Columbia, an evidence that all was going well.
>
> As was stated in the *Star* last week the ore being treated carries a high percentage of zinc, 15 per cent., more than can be safely counted on to run. Friday was looked upon as the critical time, when if the ores were not going to run freely, they would "freeze" and the fires would be blown out. The ore continued to run, however, and at the time of writing smoke ascended from the smelter stack and nearly a dozen men were kept busy feeding and attending to the furnace.
>
> The smelter was thronged with visitors and numerous pieces of bullion and slag were taken away as souvenirs of the first output of the Kootenay Smelter.[25]

Just how long the campaign lasted we do not know, but Mr. Roeser, the trusted source of some of our information, tells us that "when all efforts to obtain an ore supply were given up, the whole enterprise was practically abandoned in 1892." The buildings stood derelict, but in reasonably good condition, for some years, but by 1896 erosion of the river-bank was threatening their foundations.[26] In 1897 the Revelstoke agents of the

(23) *Kootenay Star*, Revelstoke, April 18, 1891.
(24) Private information.
(25) *Kootenay Star*, July 25, 1891.
(26) *British Columbia Mining Record*, May, 1896, p. 37.

Kootenay (British Columbia) Smelting and Trading Syndicate advertised that, " Owing to the erosion . . . the company find it necessary to dispose of their smelting buildings, furnaces, 90 h.p. engine and boiler, and 30 h.p. boiler. The whole will be sold in part or en bloc."[27] Just what happened after that date is uncertain, but by 1899 buildings and machinery had both vanished.[28]

GOLDEN.

In the summer of 1889 the author was engaged by a firm of manufacturers in Chicago to take charge of the erection in British Columbia of smelting equipment, already purchased by a syndicate at Calgary, Alberta. Proceeding there, and thence to the site for a smelter which had been selected tentatively near Field, B.C., it was found not only that there was little merit in this choice, but that the only apparent source from which ore could be secured within many miles was the Monarch mine, which has already figured in the story of the smelters at Vancouver and Revelstoke. The syndicate had recently acquired some mineral claims adjoining the Monarch, but they were quite undeveloped.

In view of this state of affairs, if the equipment were to be set up at all, little argument was needed to prove that a better place could be found for it. The Field site was abandoned, and formal application was made to the Dominion Government for a land grant at Golden. The applicants stated that they had " already purchased and paid for smelting plant and machinery, including an ore-breaker, crushing-rolls, iron and brick for a roasting furnace, and that the Smelter proposed to be built will have a capacity of forty tons."[29] On October 15, 1889, the Governor-General in Council approved the recommendation of the Minister of the Interior that a free grant of 320 acres of land should be made

to Messrs. J. L. Bowen, James Alexander Lougheed, Peter McCarthy and H. B. Alexander, styling themselves "*The Galena Mining and Smelting Company,*" upon the erection by them thereon within one year, and the operation thereof within six months thereafter, of Smelting and reduction works of a character suitable for the economical reduction of the low grade

(27) *Kootenay Mail*, Revelstoke, July 24, 1897, and later issues.
(28) *British Columbia Mining Record*, August, 1899, p. 28.
(29) P.C. No. 2422, October 15, 1889.

ores carrying gold or silver, or both, found within the Railway Belt in British Columbia.[30]

It may be added that J. A. Lougheed (later Senator Lougheed) and Mr. McCarthy were barristers, of Calgary, and that the most active partner of the syndicate was H. B. Alexander. He and his cousin, George Alexander, were Irish capitalists who had interests in Calgary, and later at Kaslo, as well as at Golden. They were also interested in a coffee plantation in Kenya, and were highly respected in the business world.

The proposed grant lay south of the Kicking Horse River a short distance east of the town of Golden. The original boundaries proved unsatisfactory, as is shown by the text of an amending Order in Council passed on March 18, 1890:—

> The Minister [of the Interior] states that . . . it has been represented by the Company that the lands forming the proposed grant contain no location suitable for their works which must be situated on one or two benches so that the ore, when dumped from the cars, can be run through the crusher to a level below and then put through the smelter at another level.
>
> The Minister further states that on examination of the ground it appears that a suitable site for the works could be obtained on the North side of the Kicking Horse River, opposite lands already reserved for the Company which they are willing to accept in lieu of a similar area to be deducted off the Southern portion of the reserve.[31]

The new smelter-site, which consisted of 4.7 acres, was on the main line of the Canadian Pacific Railway about half a mile east of Golden, close to the mouth of the Kicking Horse Canyon. Construction proceeded as soon as the new site had been secured, and the plant was completed in the early summer of 1891. The terms of the grant having been fulfilled, title of the land was granted to the company by letters patent dated November 17, 1891.

One lonesome car-load of ore was received from the Monarch mine and sampled, but no other ore ever reached the Golden smelter. In 1893 it was reported that favourable freight rates on ore had been granted by the Canadian Pacific, and it was expected that the smelter would commence to operate shortly, but nothing came of this.[32] In 1896 an English syndicate toyed

(30) *Ibid.*
(31) P.C. No. 702.
(32) *Golden Era*, July 8, 1893.

with the idea of developing the Monarch mine on an extensive scale, but once again Golden's high expectations came to nothing.[33] Negotiations for the sale of the smelter were opened in 1898 and again in 1900, but neither deal was completed.[34] The plant remained silent and more or less intact until it was finally demolished many years later. In the end it was torn down mostly by hoboes, who tore off boards to make themselves a fire under the smelter roof. In 1920 the machinery was sold for scrap-iron by James Anderson, acting on behalf of the estate of George Alexander, and it is said that bricks from the tall chimney were used in building local chimneys and fireplaces.[35]

Though the smelter thus proved to be a total loss, the Alexanders had acquired about half the land comprising the townsite of Golden and recouped a portion of the company's investment by the sale of lots. In later years, however, the demand for lots declined, and about half the land acquired has since reverted to the Government, owing to the non-payment of taxes.[36]

For the common credit of the early smelters at Revelstoke and Golden, and for the benefit of those who may be interested in the nature of their equipment, it may be added that each plant had one rectangular water-jacketed blast furnace. In size these ranged from 60 to 72 inches in length and were 36 inches in

(33) *Ibid.*, May 23, 1896.

(34) *Ibid.*, October 28, 1898; October 5, 1900.

(35) Some of these details are taken from a letter from Thomas King, M.L.A., of Golden, to M. C. Holmes, dated April 28, 1939. Mr. King adds some particulars regarding the history of the second smelter built at Golden, which is sometimes confused with the earlier plant. This smelter was built in 1903 and was located a mile northwest of Golden, on a small tributary of the Columbia River known as Hospital Creek. The company that built it operated under the name of the "Labourers Cooperative Gold, Silver and Copper Mining Company." They acquired about 20 acres of land surrounding the small plant, subdivided it into town lots, and sold several of them to their shareholders, mostly residing in the United States. The building of this smelter, in the opinion of local mining men at the time, was just a selling inducement in connection with a stock promoting scheme. In the fall of 1905 the company operated their smelter for one evening, but did not even remove the molten slag when they let the fires out, and it solidified and remained in the receptacles until the machinery was sold for old iron in 1937, by a gentleman who had bought the property at a Provincial Government tax sale.

(36) *Ibid.*

width between tuyeres. These sizes were in common and successful use in those days, despite a well-marked tendency toward greater length to secure greater capacity. As to capacity, however, they were sufficient for their purpose; and as to type, nothing better has yet been devised.

Concerning roasters, we have indicated that their omission from the Vancouver plant was a fatal error. At Revelstoke and Golden each plant had one old-style, hand-rabbled reverberatory furnace, then and even later good common practice, though slow and expensive, as may be supposed, when compared with modern mechanical equipment. In the Golden roaster a short slagging hearth had been introduced between the fire-box and the lower end of the roast-hearth. The purpose of this probably was agglomeration or sintering of "fines"; but as the furnace was never put to use we have no knowledge of the merit of the scheme.

Both plants had made sufficient provision for sampling, and both had ample laboratory facilities in use before the smelters were completed. Both were driven by steam-power, and had service connections with the Canadian Pacific Railway.

If these credit marks be granted, as the author believes they should be, it must be evident that these smelters failed through no fault of their own. As the children of ill-conceived enterprise they were foredoomed to death by starvation.

WOODBURY.

The Woodbury smelter, the last and least on our list, has been alluded to as being semi-mythical. The last of its remains, however, may still be found near the mouth of Woodbury Creek, on the west shore of Kootenay Lake, some 3 miles north of Ainsworth. Thus far we have been unable to find its parents and have little information regarding the child itself.

In 1909 the late A. D. Wheeler, a pioneer resident of Ainsworth, casually remarked, in a letter referring to the early citizens there, that "in 1889 what was intended as a starter for a smelter was erected at the mouth of Woodbury Creek. A small ten-ton plant using wood for fuel was built. It made a one-day run from 'Early Bird' and 'Reindeer' ore but cracked under the heat and died a quiet death."

D. F. Strobeck, long a resident in California, arrived in Ainsworth in the winter of 1892–93. In a recent letter he states:—

> In the spring [of 1893] when I visited Woodbury Creek the remains of the old smelter were simply a wreck and from what I could see, it was constructed after [the manner of] those built by the Padres in Mexico and many still standing in southern Arizona that were built in the latter part of the seventeenth century.
>
> The cast-iron moulds at Woodbury that I saw were identical with those I have seen in Mexico and Arizona.

We may infer from these descriptions that the body of the furnace was rather small and was built of pieces of a near-by refractory schistose rock, bound together by a weak mortar—weak, since the furnace cracked so soon. As for the moulds, in which the molten lead would be cast, Mr. Strobeck does not indicate that they differed from those used at northern plants; but it is interesting to know that the builders of this early and rather crude furnace expected to produce enough lead to fill them, and if they were unlike our ordinary northern ones curiosity as to where they came from is at once aroused. We suppress it because we must.

S. S. FOWLER.

RIONDEL, B.C.

NOTES ON THE "NORMAN MORISON."

The January issue of this *Quarterly* contained an interesting account of the barque *Princess Royal.* Because of the special esteem in which her memory is held by the good people of Nanaimo, and because she remained in service for more than thirty years, she is the best known of the vessels which sailed back and forth between the Pacific Coast and Great Britain in early days in the service of the Hudson's Bay Company. But she is not the only vessel with a story worth recalling, and her history is rivalled in interest by that of her predecessor, the *Norman Morison,* which sailed on her first voyage to Vancouver Island just ninety years ago.

While visiting in London in 1934 I called at the office of *Lloyd's Register of Shipping,* where the Secretary, Mr. Malcolm K. Scott, very kindly secured for me all the particulars regarding the *Norman Morison* preserved in the Society's records. Application was next made to Major P. Ashley Cooper, Governor of the Hudson's Bay Company, who was pleased to arrange for me to have access to the vessel's log-books and other documents relating to her which are on file in the Archives of the Company. The narrative which follows is based upon information secured from these sources and from additional documents in the Provincial Archives in Victoria.

The *Norman Morison* (not *Morrison,* as the name is often misspelled) was built at Moulmein, Burma, in 1846. *Lloyd's Register* states that the name of the actual builders is not known. She was rigged as a barque and constructed of teak. Her tonnage was 564 tons. She was 119.5 feet in length, 26.8 feet in breadth, and 20.4 feet in depth. It may assist the reader to realize her modest size if it is pointed out that she was not quite as long as two Pullman cars and no larger than some of the tugs which now tow the railway barges between Vancouver Island and the Mainland.

The *Morison* was purchased by the Hudson's Bay Company in 1848, and the next year was fitted out to carry emigrants to Vancouver Island, which had been formally granted to the Com-

pany for colonization purposes in January, 1849. Both the terms of the grant and its administration by the Company have been the subject of much controversy, and it is to be hoped that the cataloguing of the Company's Archives will make it possible for some scholar to produce an objective and definitive study of the whole episode in the near future. The part of this study that deals with immigration will be of special interest. Very few independent settlers found their way to Vancouver Island, but this was due in part to circumstances beyond the control of the Hudson's Bay Company, and it should not be forgotten that the Company itself brought out several hundred labourers to carry on colonial enterprises of its own in the first years of the Colony's existence.[1]

Eight men sent out by Captain W. C. Grant, celebrated as Vancouver Island's first independent settler, and ten miners and labourers under contract to the Company travelled out in the *Harpooner*, which arrived at Victoria in June, 1849; but the first considerable party of immigrants was carried by the *Norman Morison* on her maiden voyage to the Pacific Coast. The ship's log records that she left Gravesend on October 20, 1849, in command of Captain David D. Wishart, who remained in her as long as she was in the Company's service. She crossed the equator

(1) An official return, dated 1852, states that the total number of persons sent out by the Hudson's Bay Company and the Puget Sound Agricultural Company at their own expense, in 1848–1852, was 435, divided as follows:—

	Men.	Women.	Children.	Total.
1848	21	5	6	32
1849	67	5	—	72
1850	99	25	27	151
1851	28	2	—	30
1852	56	43	51	150
	271	80	84	435

(*See* A. Colvile to Sir John Pakington, November 24, 1852, quoted in *Papers Relating to Vancouver's Island*, London, 1852, p. 2.) The date indicates the time of departure from England. The *Harpooner* sailed in November, 1848, before the grant of Vancouver Island had been formally completed, and one or two other immigrants, notably the Rev. R. J. Staines and Mrs. Staines, also left that year.

on November 29, was off Cape Horn on January 11, 1850, and reached Fort Victoria on March 24.[2]

An old passenger-list in the Provincial Archives, originally amongst the papers of Governor Blanshard, contains fifty-five names, but as no women are included it is obviously incomplete. The correct total, according to Captain Grant and others, appears to have been eighty. Fortunately for the historian, this number included a young physician and surgeon, Dr. John Sebastian Helmcken, one of British Columbia's best-known pioneers. Nearly half a century ago Dr. Helmcken jotted down his recollections of his experiences aboard the vessel which brought him to Vancouver Island, and the result was the following most interesting narrative, here quoted by kind permission of his daughter, Mrs. E. L. Higgins:—[3]

This ship was the *Norman Morrison* [*sic*], Capt. Wishart, Commander, Holland first officer, and I had to board her at Gravesend. Arriving there somewhere about October 1849, I found the emigration commissioners and so forth, inspecting everything, which they pronounced all right and certified accordingly. A good deal of fuss was made about this first voyage to a new Colony and some grandees were on board drinking wine and speaking good wishes &c. &c. They went and the pilot remained on board. I had brought lots of seeds and canaries—flower seeds particularly which I bought in Fenchurch Street. Had I grasped the situation I should have taken a larger assortment of these and other articles.

The ship sails—eighty emigrants on board—chiefly men, but two or three women and all in the prime of life—no children. Some of the men are living now (1892) such as George Richardson and [Mathais] Rowland. The weather in the Channel was dirty, the wind foul, so we came to anchor in the days [*sic* for Downs], among a great many other vessels. However after a day or two, the weather being fine we sailed again, beating our way down Channel, in company with a lot of others. Here we very nearly came to grief: An Indiaman with soldiers aboard, on the opposite tack tried to cross our bow instead of our stern! Wishart was a good sailor and so was the pilot—the same may be said of those in the other ship. They both altered their helm, so instead of our being struck amidship, we came together broadside on. There was a smashing of ginger bread, and small spars on both sides. I recollect buttoning up my coat to make a spring, for it would

(2) Actually Esquimalt Harbour, where she was held in quarantine for about a fortnight.

(3) Permission to use this extract in the *Quarterly* was given by Mrs. Higgins, herself one of Victoria's best-loved native daughters, only a few days before her death, which occurred on April 13. The narrative is quoted direct from the original, in Dr. Helmcken's handwriting.

have been easy to jump into the other vessel, but fortunately both vessels sheered off—sails put to rights and off we went again, not much the worse —neither do I think the other vessel was much the worse either. It was a queer experience, and by no means a pleasant one, for a little more mismanagement, and we at all events would have gone to pot. The *Morrison* was built of teak and a very strong vessel and by no means a bad sailer—ten knots could be got out of her with a decent breeze.

Off the Bay of Biscay we had the usual fate of a beastly gale and weather, for a couple of days and thereafter soon found fine weather and fine climate.

Just here one of the immigrants had an eruption of smallpox. On reporting this to the Captain, the sufferer was brought on deck and slung in a hammock forward. Of course this created no little alarm. Some vaccine had been supplied the ship—the old fashion, matter between small plates of glass. This I used at once, but think it was only successful in one instance and this a man—most of them had been vaccinated or had had smallpox. Of course the holds were well ventilated and kept clean; but soon others went down until there were nearly twenty all told. Every one was slung in a hammock on deck—every attention paid them—and every one being in the same box, helped each other. The Captain had been through the same thing before, so he managed the whole thing. Medicines were but little used—fresh air diet and cleanliness were the means employed. Out of the number only one died, and he had the confluent variety. The number in the ship was about one hundred and twenty, but not more than twenty took the smallpox. By the time the ship neared Cape Horn, the whole epidemic had been wiped out. No more could take it. There was no great scare on board—people did not lose their senses. Fortunately the weather was splendid and warm, so there was not only no danger but the greatest benefit from slinging them all on deck or under the topgallant forecastle.

The dead man was buried at sea—the Captain reading the funeral service.

At Cape Horn in the winter season! The weather was beastly—foul wind—fearful gales—hailstorms—a few hours only of daylight! Such seas —beastly chopping irregular ones—I had seen the huge rollers off the Cape of Good Hope, but these chopping seas were ten times worse and more dangerous. We ran as far South as we dared, but did not see any ice floating or bergs. Then we ran back again to about where we started from and so for many days, but then the wind changed and the ship was put about. The seas came in opposite direction to that of the wind, so that they seemed as tho they would sweep over us from stem to stern—but the good ship rose to them and then we were in a valley. This went on for some hours and was far less dangerous than if they had come astern—the wind not being strong. We had precious poor grub off Cape Horn—could cook but little. I tell you pea soup and pork were relished there and so was porridge—these being the chief articles of diet, with an occasional hard boiled dumpling. Everything was miserable indeed. Once round the Cape,

which we did not sight, and into the Pacific, there was soon a very pleasant change and with a fair wind soon ran into warm weather.

In the Pacific a schoolmaster who was going out to teach Gaelic to Capt. Grant's settlement at Sooke died of Cancer. He was a very quiet worthy old Highlander, always ailing of course. When dying he gave me his fishing rod, with which he had hoped to catch salmon in the Rivers of Sooke. I kept this rod for years—my boys destroyed it. Poor Dominie—peace be with you.

On the voyage the immigra[n]ts complained of their grub, and used to pitch the tinned Soup and Bouillon overboard. The very same that we found so good in the cabin! The Captain used to enquire into all their complaints and pacify the grumblers, but really they had nothing to complain of.

Fights among themselves happened occasionally, but the Captain "let them fight it out." Rowland was the chief boxer and our butcher too. Altogether the people were orderly and well behaved, and gave very little trouble. They managed to spend their time somehow or other, but there was but little jollity among them or in the cabin either. I suppose the women did not set dancing and so forth going and I suppose had never been accustomed to anything of the kind or even music. I do not remember anything very remarkable happening between Cape Horn and Cape Flattery—pretty good—too good—weather all the way. Off Flattery and in the straits we had calms for days—washed out of the straits once or twice by calms, so we had a pretty good look at the coasts of the country destined to be my home. Truly they were forbidding altho grand—nothing but mountains on both sides wooded to the top—they appeared weird and gloomy and possibly are the same to this day. Scarcely a foot of level land could any where be seen and we used to ask each other, how can any of this be cultivated; where is it possible to make any farms at all. Doctor you have brought your pigs to a pretty market indeed! Nevertheless it was land and we were glad to see it after five months of water. During these weary months, I had amused myself by making bird cages of strips of bamboo, and other trifles—but it was a monotonous time. Wishart was not a social man —he had been soured somehow or other—but nevertheless he was kind and good to all and a thorough seaman. Books we got tired of, the daily routine had to be gone through, and this was better for all, than having nothing to do like the doctor. All the most of us had to do was to speculate how long it wanted to the bell—for breakfast lunch dinner and supper! Strict discipline was kept on board—Wishart never relaxed this—he was a commander. Holland was not much of a sailor or anything else,—he and the Captain being so different did not get on well together. Wishart took charge of the ship and no matter how bad the weather, he would remain on deck night and day and was always ready at a moment's notice.

A paragraph in a further narrative by Dr. Helmcken concludes the story thus:—

At length Race Rocks are rounded; two guns fired, the signal of the Hudson's Bay Company ships. After a time the pilot, Captain Sangster, came on board: he had been many a day looking out for the ship from

Beacon Hill. Of course every one wanted news from the pilot. "News!" said he. "Why you have the mails and newspapers aboard and the Hudson's Bay people are anxiously awaiting their letters and papers. No there is nothing for any of you—you are the mail boat." He however told us of the great discoveries of gold in California; how they had heard of people rushing there like madmen and how the men at the Factory [Fort Victoria] had become restless. Little did anyone think at the moment that within a very few months many of those on board would take the gold fever, run away, and that three at least, in their endeavour to reach California, would be murdered by Indians.

The hazards attending travel by sea in 1850 are well illustrated by the medical report which Dr. Helmcken submitted to Chief Factor James Douglas soon after the *Norman Morison* reached Esquimalt. Smallpox had appeared on board on September 26, 1849, and late in December claimed the life of the schoolmaster, William Burgess. "At the commencement of October G. Hawkins laboured under Scarlet Fever, which however was not propagated." On January 21, 1850, a Mr. McFarlane, who "very shortly after his arrival on board shewed symptoms of declining health," died of cancer. No wonder Dr. Helmcken considered "several cases of Mild Fever and two of Rheumatic Fever" to be "minor cases" which it was "unnecessary to dilate upon"![4]

Before returning to England the *Norman Morison* made a coasting trip to Fort Simpson and Sitka. Her passage home appears to have been uneventful. She left Fort Victoria on September 23, 1850, was off Cape Horn on December 12, and reached Gravesend on February 20, 1851. Both her outward and homeward passages thus took almost exactly five months.

The sending-out of eighty immigrants to Vancouver Island in the *Norman Morison* may appear to be a very small scale upon which to found a colony, but to Chief Factor Douglas, the man in charge on the spot, it appeared to be an alarming influx of population which taxed his resources sorely. This much we gather from a paragraph in a letter addressed by Archibald Barclay, Secretary to the Governor and Committee of the Hudson's Bay Company, to Douglas in August, 1850:—

The Governor and Committee are anxious on all occasions to select for the Country the best men that they can obtain and they endeavour to adapt

(4) J. S. Helmcken to James Douglas, March 28, 1850 (Archives of B.C.).

the numbers engaged to the exigencies of the service, bearing in mind that under present circumstances it is better to have too many than too few. You seem to think that the number to be sent out this year should be limited to ten; but in this opinion they do not concur. You will have seen by my letter of the 5th ult. that they have resolved to forward by the ship to sail in September eighty persons—of whom perhaps sixty may be men fit for any kind of labour—and as you will require additional hands for the improvement of the new Road from Fort Langley to the Interior, for the cultivation of the land at Fort Victoria, and probably to supply the place of deserters from the service, that number will it is conceived, not be more than will be wanted. Accommodation will have to be provided for these people—the men and women being lodged in separate apartments, until they are disposed of for service.[5]

This question of accommodation had evidently been causing Douglas concern, and a further reference to it in a subsequent letter from Barclay, though amusing reading for us, must have been exasperating to the Chief Factor owing to its complete misunderstanding of the problems involved in the construction of wooden buildings:—

With respect to the difficulty of preparing House accommodation for the emigrants on their arrival, I refer you to the following Extract of a letter, dated California, May 30, 1850.—"Wooden houses here are all the go. You would be astonished to see the immense quantities of wooden houses, and what splendid edifices are turned out in wood. You can have a large wooden house put up in a single day; they can build a city of them in a week, and comfortable strong houses too."[6]

The immigrant ship which sailed outward in 1850 was the *Tory*, but she departed in November, instead of in September as expected. Moreover, when she arrived at Victoria in June, 1851, she carried not eighty, but no less than 120 passengers, and Governor Blanshard's description of the great difficulty experienced in finding them accommodation is well known. Fortunately—from Douglas's point of view—only some thirty or thirty-five passengers were aboard the *Norman Morison* when she sailed from Gravesend on her second voyage, in May, 1851. Very little is known about this voyage except the following arrival and departure dates, which are taken from the vessel's log: Left Gravesend, May 28, 1851; crossed the equator, July 5; off Cape Horn, August 17; arrived at Fort Victoria, October 30. On the

(5) Archibald Barclay to James Douglas, August 16, 1850 (Archives of B.C.).

(6) *Ibid.*, August 30, 1850 (Archives of B.C.).

return passage she left Victoria on January 21, 1852, was off Cape Horn on March 23, and reached Gravesend on June 12.

Much more is known about her third and last voyage to the Pacific Coast, which commenced in August of 1852. For many years prior to my visit to London in 1934 there had been expressed through the press and other channels a desire to secure an authentic list of the settlers carried by the *Norman Morison* on this third voyage. This list I was able to secure from her log-book, and it is here printed as an appendix to this article. As will be seen, it includes many well-known names, notably Mr. and Mrs. Kenneth McKenzie and Mr. and Mrs. T. J. Skinner.

An interesting account of those on board is given in a letter from Archibald Barclay to James Douglas, written the day the vessel was due to sail:—

The Cabin Passengers by the *Norman Morison* are Mr. & Mrs. Kenneth McKenzie and 6 children, Mr. & Mrs. Skinner and 5 children and Mr. Gavin Hamilton Apprentice Clerk.

Mr. McKenzie and Mr. Skinner have been engaged as Bailiffs on behalf of the Puget Sound Company and are accompanied by tradesmen and labourers selected by themselves as per the list herewith of which the following is a summary.

5	Carpenters	(married)
1	Bricklayer	do
2	Blacksmiths	do
23	Labourers	do
18	Single	do
5	Single	Women

These have among them thirty-six children and form an aggregate of 121 persons in the Steerage.

Four of the Single Women are Servants, and the fifth Amy Thomas goes out to be married to a man of the name of Geal.

The Intermediate passengers are Mr. & Mrs. Stewart & child.

Mr. Robert Weir & 5 children.

Mr. & Mrs. Barr.

Mr. Stewart and Mr. Weir are Land Stewards engaged by Mr. McKenzie.

Mr. Barr is a schoolmaster who it is intended shall be placed on the Colonial Establishment as you will see by his Contract.[7]

A considerable number of Books as per list enclosed herewith has been put on board for the use of the Passengers on the voyage at the termination of which, they are to be added to those sent by the *Tory* for general use at

(7) *See* D. L. McLaurin, "Education before the Gold Rush," in *British Columbia Historical Quarterly*, II. (1938), pp. 252–260.

the Fort. A Bible and Prayer Book are forwarded in the Packet Box for the use of the Company's Chaplain for the time being.[8]

The "tradesmen and labourers" tabulated by Barclay included one Robert Melrose, whose interesting diary, which takes the form of a manuscript *Royal Emigrants Almanack,* is preserved in the Provincial Archives. The entries made during the voyage include the inevitable references to births and deaths during the long months at sea. In October, 1852, "Jonathan Simpson's child died," and was followed the same month by the infant daughter of James Whyte. A strange juxtaposition of entries occurs in December:—

25. Christmas kept. Grog for all hands. Riot with Mate & Seamen.
26. John Grout an Englishman died, aged 35.
27. do. do. Buried 12 o'clock noon. Funeral service performed.
28. do. do.'s Clothing &c. sold by public auction on board.
31. Grog for all hands.

More cheerful is the entry which records that "Mrs. Anderson gave birth to a female child" on August 17, 1852—the day the vessel left Gravesend. On December 5 we read: "Mrs. Anderson's child baptized, after Captain Wishart, & ship *Norman Morison.*" Actually the child was christened Eliza Norman Morison Wishart Anderson. Years later she married a Mr. Lyall, and died in Victoria in August, 1926, a few days before her 74th birthday.

A second birth occurred in December, when Robert Melrose noted that "Mrs. Cheeseman gave birth to a female child."

Melrose's record of the arrival of the *Norman Morison* in January, 1853, is interesting, because it gives a graphic impression of the hazards faced in early days by a sailing vessel seeking to enter the Straits:—

January 1853.

10. Espied Cape Flattery, and Vancouvers Island. Nearly struck against the rocks evening.
11. Dodging about the mouth of the Sound, with Close reefed Topsails. Nearly struck morning.
12. Wet day. Driven out to sea. Sighted Vancouver Island evening.
13. Strong gale. Driven out to sea again with Close reefed Topsails.
14. Came to the mouth of the Sound Evening. All hand on Deck, to guard against the rocks.

(8) Archibald Barclay to James Douglas, August 19, 1852 (Archives of B.C.).

15. Fine day. Sailed up the Sound very slow.
16. Cast Anchor in the Royal Bay. Saw the Indians in their canoe's first time.
17. English People went ashore, with Mr. McKenzie, Weir, & Stewart, at Fort Victoria.
19. Scotch do. also do.
21. Norman Morrison came into Harbour.
22. Went up and saw our new abode.

To complete the chronicle of the voyage it is only necessary to add that the *Norman Morison* sailed from Victoria on the return passage on March 8, 1853, but being delayed by grounding she did not pass Race Rocks until the 19th. She was off Cape Horn on May 18, arrived at Gravesend on July 31, and docked at London the next day.

Her arrival marked the close of her career in the service of the Hudson's Bay Company. Though stoutly built and a well-found ship, her draught was unusually deep—Dr. Helmcken states that it was as much as 18 feet—and this made it necessary for her to discharge part of her cargo at Esquimalt before she could enter Victoria Harbour. It was decided, therefore, to replace her with a new vessel of more convenient design, and her famous successor, the *Princess Royal*, was constructed at Blackwall in 1853–54. The *Norman Morison* was put up for sale, and according to the Company's Minute Book, November 14, 1853, and a letter to Chief Factor James Douglas, dated April 21, 1854, she was sold for £6,500 to a Mr. George Bagley. She was afterwards owned by the firm of Teighe & Company, of London, and sailed from London bound for India in 1860.

Her story, in so far as it is known to us, ends with a cryptic entry in the records of *Lloyd's Register of Shipping* which states that she disappeared at sea in 1865–66, while on a voyage from Australia to India.

A. N. MOUAT.

VICTORIA, B.C.

APPENDIX.

1. List of passengers on the *Norman Morison*, 1849–50, as given in the papers of Governor Blanshard. (Original in the Archives of British Columbia.)

Helmcken, John S. Surgeon.

Labourers:—

Balls, George
Beachino, Edmund
Burgess, William, DD
Crittle, John
Cheeseman, Richard
Clarke, Robert
Edwards, George
Field, Thomas
Fish, Charles
Foot, William
Gullion, Charles
Gray, Joseph
Gillespie, William
Hawkins, George
Hoare, Edward
Horne, Henry
Horne, George
Hillier, William
Hunt, Robert
Jeal, Herbert
Kimber, Edward
Leach, Peter
Lag, William
Martin, Jonathan
Millar, George
Mills, George
Parsons, William
Payne, Charles
Phillips, John
Pearse, Edward
Paddock, James
Pike, William
Pike, Jonas
Pike, Caleb
Richardson, James
Richardson, George
Reid, Robert
Ross, William
Rickets, Samuel
Rowland, Mathais
Sampson, Henry
Sampson, William
Sabiston, John
Sinfield, William
Smart, George
Short, Eli
Sims, Walter
Wain, Henry
Williams, Charles
Willoughby, John
Wickham, Benjamin
Whiffen, Richard
Yellop, John
Young, William

2. List of passengers on the *Norman Morison*, 1852–53, as given in the vessel's log, arranged alphabetically.

Anderson, Robert, wife and two children
Barr, John, and wife
Bartleman, Peter, and wife
Bell, John
Bell, Miss S.
Blaikie, John
Castleton, Richard, and wife
Cheeseman, Richard, and wife
Cheeseman, William
Crittle, John
Cudder, Thomas S.
Davey, John, wife, and two children
Deans, George, and wife
Deans, James
Deeks, George, and wife
Dervint, John, wife, infant and two children
Flewin, Thomas, and wife
Graham, John, wife, and infant
Grout, John

Hamilton, Gavin
Hume, Andrew, wife, and infant
Instant, John
Liddle, James, wife, and infant
Lidgate, Duncan, wife, and three children
McKenzie, Kenneth, wife, and six children
Melrose, Robert, and wife
Montgomery, Joseph, wife, and infant
Mullington, William, and wife
Page, William
Page, William, Junior
Parker, John, and wife
Porter, James, wife, and two children
Reed, Thomas, wife, and one child
Russell, Miss Isabella
Russell, John, and wife
Russell, Thomas
Savage, Robert, Junior
Savage, Walter, wife, and infant
Sewell, James, and wife
Shooter, Edward, wife and infant
Simpson, Henry, and wife
Simpson, John, wife, and two children
Skinner, T. J., wife, and five children
Stewart, James, wife, and infant
Stockand, William
Stubbings, Robert
Tait, James, and wife
Thomas, Miss Amy
Thomas, Daniel
Trond, Miss Jane
Veitch, William, wife, and three children
Weir, John
Weir, Robert, and five children
Weir, William
Weston, William
White, Miss Heriot
White, James, wife, and infant
Williams, Edmund, wife, and two children
Williams, John, Senior, wife, and two children
Williams, John, Junior, and wife
Williams, Richard
Williams, William
Wilson, James, and wife

THE DISCOVERY OF HILL'S BAR IN 1858.

The rush to the Fraser River in 1858 appears to have been precipitated by the arrival in San Francisco of samples of gold, and letters reporting the discovery of rich placer-workings, from the little party of mining pioneers who found Hill's Bar in the early spring of the year. The last survivor of this historic party, James Moore, died in the Provincial Home, in Kamloops, in 1919. About four months before his death he received a clipping, describing early gold discoveries in British Columbia, from his friend H. L. Harding, of the Treasury Department, Victoria. In reply he wrote Mr. Harding a lengthy letter in which he recalled the circumstances surrounding the discovery of Hill's Bar. This letter was forwarded to the Department of Mines, by whom it was recently transferred to the Provincial Archives.

The latter half of the letter, not here printed, consists largely of a tabulation of the gold production of famous claims in the Cariboo. In great part it is simply a paraphrase of certain passages in Bancroft's *History of British Columbia.* This fact gave rise to a suspicion that the narrative relating to Hill's Bar might also be derived from a printed source, but careful checking has shown that this is not so, and there is no reason to doubt that the portions of the story here presented are both original and accurate.

A second letter from James Moore, dated June 6, 1914, and addressed to the late Sir Richard McBride, then Premier of British Columbia, gives a brief account of Moore's life. Amongst other details it gives the exact date of the discovery of Hill's Bar:—

> We located these claims the 23rd day of March 1858. I remember the date, it being my 26th birthday.

Moore was thus born in 1832. A later passage in the letter outlines his career after the events described in the narrative which follows:—

> My next exploit was with Tom Spence when he got the contract to build the wagon road from Boston Bar to Lytton. I superintended the construction of this road from Lytton to Jackass Mountain. Late in the fall and early in the spring, during the low stage of water in the Fraser, we boated

goods from Yale to Lytton through the Canyon of the Fraser, thence by pack train to Cariboo and the Northern mines. This boating lasted until the wagon road from Yale to Lytton was completed.

In 1863 I again returned to my hobby of exploration and prospecting with variable success, locating on Cedar Creek, Keithley Creek, the North Fork of Quesnel, Spanish and Black Bear Creeks. In 1874 I struck out for the Cassiar District and remained two years. I again revisited this district in 1907. . . . I spent a number of years with the late J. B. Hobson locating hydraulic mining ground in Cariboo and exploring the tributaries of the Quesnel Lake for placer claims. I have spent a part of the last few years prospecting in the Lillooet District for lode mine.

In 1914, at the age of 82, failing health compelled him to apply to the Government for aid. He was granted an allowance and for a time lived in Victoria, but in 1916 entered the Provincial Home at Kamloops. He died on December 13, 1919, aged 87.

W. K. L.

Provincial Home,
Kamloops, B.C.,
Aug. 30, 1919.

My Dear Mr. Harding:—

In the first place let me thank you for the marked copy of the *Victoria Daily Times* containing a statement of gold shipped to England from Victoria as early as 1853.[1] The lady who gave the *Times* this statement must be dreaming,[2] as there is no account whatever of placer gold being found in

(1) The reference is to the article entitled, " Gold shipped from here as early as 1853," in the *Victoria Daily Times*, August 21, 1919.

(2) The lady's name is not given, but her story is quite true. In part it reads as follows:—

> The occasion she remembers, as she told The Times the other day, was in 1853, when as a small girl visiting on board the vessel [the *Norman Morison*], she was taken into the captain's cabin, and there shown a keg by [the captain's wife] Mrs. Wishart. It was consigned to the Hudson's Bay Company in London, and directions were given at the time as to secrecy. Apparently the precious cargo did not find a place on the manifest, as no record of it appeared in the ship's papers.

The *Norman Morison*, as we now know from documents in the Archives of the Hudson's Bay Company, carried gold dust and specie valued at over $60,000 when she sailed from Victoria in March of 1853. It is highly improbable, however, that any placer gold from British territory was included in the shipment, as the entire consignment had been sent to Victoria from Fort Vancouver to be forwarded to England. Moreover, practically the whole amount was in currency, and the gold dust included totalled less than 94 ounces.

what is now known as British Columbia[3] prior to 1856 and 1857, when Indians on the Thompson River in the vicinity of the Nicomen found nuggets of gold in the crevice of rocks at low water, which they took to Kamloops and offered them for trade to Donald A. McLean for goods in the Hudson's Bay store. McLean, not knowing the value of the mineral offered in barter, sent it to Victoria to Governor Douglas to ascertain its value. The Governor sent word back to McLean to get all he could of this metal as it was gold and take it in trade from the Indians, at the same time sending McLean, the chief trader at Fort Kamloops, iron spoons for the Indians to use as crevicing spoons.[4] This statement I got from McLean in the early sixties after McLean left the Hudson's Bay Company employ and located on the Bonaparte River at the mouth of Hat Creek. I remember this statement distinctly by McLean, as I at the time was interested in a true statement of the first discovery of gold in what was then known as New Caledonia.

. . . I wish to make this story as short as possible, and [yet] give a true account from my own knowledge of events which happened in the early days of the Province. As I have already stated, Donald A. McLean's statement of the first gold found to his knowledge by Indians in the years 1856 and 1857 on the Thompson River, this was the gold that caused the great excitement to Fraser River in 1858. In February of this year the Hudson's Bay Company steamer *Otter* left Victoria for San Francisco. The Purser of the *Otter* having the gold found on the Thompson River took it to the Mint in San Francisco, and got it coined as a souvenir of the first gold found in the Province. In those early days in San Francisco the only excitement was to belong to the Volunteer Fire Department. One evening a party of us met at No. 3 engine house, and, after speaking of several things, the conversation drifted to gold excitements. The Superintendent of the Mint being present, remarked " Boys the next excitement will be to Fraser River." He then explained the quality of the gold taken to the Mint by the purser of the *Otter* and stated it was a fine sample of gold. On the strength of this statement we formed a small party to explore and report on the prospect of the Fraser River. So early in March, 1858, a party of about fifteen of us took passage on a steamer to Port Townsend, in the State of Washington, and thence to Victoria before crossing the Gulf to Fraser River in our boats.[5] When we entered the Fraser I shall never forget my first view of this magnificent river—the snow capped grandeur of the mountains which held it in place—the thickly timbered valley through which it swept

(3) The Mainland of British Columbia is meant.

(4) A variant of this story, attributed to Roderick Finlayson, is given in Bancroft's *History of British Columbia*, pp. 348–9, which, as noted above, Moore had evidently read.

(5) This agrees with the facts as related by Judge Howay (*British Columbia*, Vancouver, 1914, II., p. 14). The shipment sent by the *Otter* consisted of 800 ounces of gold, probably worth about $15,000. Oddly enough, no record of the arrival of the *Otter* can be found in the San Francisco newspapers on file in the Provincial Archives.

was awe inspiring. The population of the mainland at this time was made up of Indians and Hudson's Bay traders. Our first camp on the river was at Fort Langley, and two days later we camped at Fort Hope. The trader at this fort was Donald Walker, who a short time ago died at Kamloops. Needless to say he was greatly excited at our arrival at Hope, and could not answer our simple questions regarding the country ahead of us. He told us later when we were better acquainted he thought we came to take the Fort as he had a lot of furs ready to ship to Victoria, while our object was to explore and prospect for gold and other mineral in this extensive country. I remember Walker saying we were the first party of white men he had seen in the country with the exception of the Hudson's Bay people for years. It was only a short time however before he saw thousands of white men pass his Fort, as it was estimated that at least 20,000 men were camped at Yale at one time during high water in 1858. After leaving Fort Hope and the excited Hudson's Bay man, we camped for lunch on a bar about ten miles from Hope to cook lunch, and while doing so one of our party noticed particles of gold in the moss that was growing on the rocks. He got a pan and washed a pan of this moss and got a good prospect, and after our gastric wants were satisfied we all prospected the bar and found it a rich bar in gold. With our crude mode of working with rockers we made on an average fifty dollars per day to the man. We named this bar in honor to the man that washed the first pan of moss, Hill's Bar. Some years ago I met the last owner of Hill's Bar, a Mr. Ladd, who estimated that approximately $2,000,000 had been recovered from the time the first pan of moss had been washed until the bar was worked out. This was practically the commencement of mining on this the pioneer bar of this the greatest Province of the Dominion of Canada. As our outfit consisted [of] only a prospecting outfit we sent a few of our party down the river to Fort Langley to try and get supplies from the Hudson's Bay Company store at Langley. At this time the Hudson's Bay Company stores were not well supplied with groceries and our party returned with a very limited supply. However while at Langley they related our discovery on Hill's Bar. This news soon spread to the other side of the line where saw-mills were in operation on Puget Sound. In the meantime the whole tribe of Yale Indians moved down from Yale and camped on the bar, about three hundred men, women and children, and they also commenced to wash for gold. In a few weeks later we noticed a boat coming up the river loaded. We thought sure we would then have supplies. We found when the boat landed its whole cargo consisted of nothing but liquor, not a pound of provisions for sale. The owner, Taylor, soon found the Indians all had gold dust. He then opened his cargo and commenced to sell to the Indians his liquor at five dollars per bottle, taking his pay in gold dust. The Indians not knowing its value allowed Taylor to help himself, which he did. So long as the Indians got the liquor they did not object to Taylor helping himself to their gold dust. We held a meeting that evening and decided to purchase all the liquor Taylor had, but Taylor refused to sell wholesale. That night the Indians all got drunk and howled all night on the bar. At this time we had no

houses to live in, nothing but tents, so next morning we held another meeting and appointed Harry Garrison as our leader, [as we were] determined to put an end to this drunken brawl. We marched down to Taylor's camp and confiscated the whole contents of his cargo of liquor, got axes and smashed in the heads of each keg of liquor and dumped the contents on the bar, and gave Taylor twenty minutes to strike his camp and leave, which he did in less than the time alloted. This was the first prohibition act put into force without delay in British Columbia and without a Findley.[6] Up to this time we had no trouble with the Indians. We got along peaceably. One of the Indians, known as White Cap, got to be rather cross when he found Taylor's liquor all dumped on the bar. When working we allowed the Indians to use our picks and shovels when we were not using them ourselves. One day Mr. White Cap, using a pick belonging to one of our party, would not give it up when requested. The owner of the pick tried to make the Indian believe that turn about was fair play, but Mr. White Cap could not see it, so the owner of the pick got angry and picked up a shovel and broke the handle on the Indian's head. This of course precipitated a row in camp, the Indians congregating by themselves and the little party of Whites in their camp all ready for the worst that might happen. The Chief of the tribe got on a stump to make a speech to his braves. While doing so a barge of the sloop-of-war *Satellite* hove in sight with Governor Douglas, the Captain of the *Satellite*, and a dozen blue jackets on board.[7] When they landed on the bar we fired a salute in their honor. We then stated our trouble to the Governor and when hearing the other side of the story took the Indians back to Yale and pacified them by giving them a blowout of hard tack and molasses. This ended our trouble with the Indians. Our

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(6) Walter C. Findlay, appointed Prohibition Commissioner for British Columbia in 1917.

(7) "From Fort Langley we pursued our upward journey, in canoes manned chiefly by native Indians, and accompanied by Captain Prevost in his gig, manned with six of the *Satellite's* seamen." (Douglas to Lord Stanley, June 10, 1858.) Douglas's diary shows that he arrived at Hill's Bar on May 31. (*Private Papers*, First Series, p. 62.) A week before, when at Fort Langley, he had noted: "Letters from Walker, Fort Hope report that Indians are getting plenty of gold and trade with the Americans. . . . Miners working 2 miles below Fort Yale who are making on an average one and a half ounces a day each man. The place is named Hill's bar and employs 80 Indians and 30 whitemen." (*Ibid.*, p. 58.) In a second dispatch to Lord Stanley, dated June 15, he wrote: "On the arrival of our party at 'Hill's Bar,' the white miners were in a state of great alarm on account of a serious affray which had just occurred with the native Indians, who mustered under arms in a tumultuous manner, and threatened to make a clean sweep of the whole body of miners assembled there. The quarrel arose out of a series of provocations on both sides, and from the jealousy of the savages, who naturally feel annoyed at the large quantities of gold taken from their country by the white miners."

next visitor was Billy Ballou, an old California expressman, who started the pioneer express of British Columbia, charging one dollar each way for letters and one dollar for papers. Of course we all sent letters and [a] sample of gold to our friends in the outside world. When these letters and gold dust reached California, [they] helped to cause the great Fraser River Stampede of 1858. Merchants and others sold valuable property on Montgomery and Kerney Streets in San Francisco for a song so anxious were they to get to Fraser River, where some of those merchants located in Victoria and helped with their capital and energy to make British Columbia what it is today, the greatest Province in the Dominion of Canada. On Governor Douglas' second trip to Hill's Bar he appointed George Perrier the first Justice of the Peace on Hill's Bar, and law and order became an established fact. So we the Pioneers of the rush into the Fraser River and Thompson Valleys—a rush that swept on until it reached the treasure vaults of Williams Creek and Lightning Creeks in Cariboo. It is not necessary for me to relate here all the incidents that occurred shortly after our discovery on Hill's Bar, as I do not wish to draw out this article to a tedious length, although some interesting stories could be told of Judge Ned McGowan and others which occurred at the time. As I was of a roving disposition in my younger days I could not remain long in pasture new. I sold my interest on Hill's Bar and joined a party of four others. We bought a boat and six months provisions. We left Yale on the 17th December, 1858, to ascend the Fraser River on an exploring and prospecting trip. This gave us a good insight into the winters of British Columbia. After making several ice portages we finally reached Lytton the 26th January, 1859, in the best of health and spirits and none the worse for our trip. We remained in the vicinity of Lytton until the spring advanced. The weather getting finer we broke camp, some of our party going up the river with the boat prospecting the bars, while myself joined a party going inland. We got horses to pack our food. We crossed the Thompson River and struck inland to Fort Alexander, thence to Beaver Lake, up the Beaver Lake Valley to Horsefly, where we remained the balance of 1859.

. . . . . .

JAMES MOORE,
Pioneer of Pioneers.

NOTES AND COMMENTS.

THE CENTENARY OF THE PACIFIC STATION: 1837–1937.

It is to be regretted that so notable an anniversary as the centenary of the Pacific Station was permitted to pass without adequate notice, and even at this belated date it seems worth while to recall, in brief outline, the circumstances which led to its establishment.

We must first go back to the period when white-winged line-of-battle ships, frigates, corvettes, and sloops-of-war first made Valparaiso their base, in the course of their duty of protecting British traders on the Pacific coast of South and Central America. So long as the Spanish Crown, represented by its Viceroys and naval squadrons, continued officially to keep the door shut to all foreign trade the non-Spanish traders could not establish themselves ashore in Chile, Bolivia, Peru, Ecuador, Colombia, or New Spain.

The casting-off of the Spanish yoke was only achieved through years of rebellion, which began in 1818, when Admiral Lord Cochrane led the infant Chilian Navy in revolt against the Spanish squadron. There followed a succession of periods of revolt, first against the Spanish power and later in the form of local wars and civil wars.

On March 28, 1822, H.M. frigate *Conway*, Captain Basil Hall, anchored at San Blas. In his autobiography Captain Hall tells of the state of transition in New Spain from the rule of Spain to that of the Mexican Federal Republic, which was proclaimed on October 4, 1823. At once a horde of trading vessels from many countries appeared on the coast, carrying the long desired trade goods, for the coming into being of the Mexican Republic caused the coast blockade to be lifted from the south to as far north as the Presidio, on the Bay of San Francisco. Spain did not, however, recognize the independence of Mexico until 1836. Further changes followed in rapid succession. The official name of Yerba Buena, on the Bay of San Francisco, was changed on January 30, 1847, to San Francisco; the flag of Royal Spain had been succeeded by that of the Republic of Mexico in 1835, and this, in turn, was replaced by the Stars and Stripes on July 9, 1846. The news of the discovery of gold in the mountains of California reached the town in January, 1848, and the huge influx of adventurers began in June of the same year.

Meanwhile events of great importance were taking place farther north. The first permanent trade depot and ocean port on the Northwest Coast came into being in 1825, when Dr. McLoughlin, of the Hudson's Bay Company, established Fort Vancouver, on the Columbia River. Other posts were built by the Company in the next few years at strategic points, all the way from the Columbia to Alaska. Quite as important, the first American settlers crossed the mountains and entered the Oregon country in 1842, and mostly located on the south bank of the Columbia River.

(Frenchmen) were crossing the country by horseback and in the distance saw something they thought to be a dog or animal, in the grass. On approaching, they found a small boy, all alone, unable to speak French, and the travellers unable to speak his Indian language. They put him in a bag or basket, and covered him up, with just his head sticking out. He must have been very young, if he was unable to ride himself. Perhaps his people had been killed? The Hudson's Bay men brought him to Kamloops, where they raised him, and he learned the French language. Felix told us Lolo St. Paul did not speak the Kamloops Indian language like the natives, but with a different accent."

As we know that St. Paul was born in 1798, and there were no " Hudson's Bay men " at Kamloops until after the amalgamation with the North West Company in 1821, presumably the boy was found by men belonging to the North West Company and not the Hudson's Bay Company; but apart from this detail the story may well be accurate.

CONTRIBUTORS TO THIS ISSUE.

R. P. Bishop joined the Royal Navy in 1902, and travelled from Plymouth to Vancouver Island by way of the Strait of Magellan. In 1907 he resigned to become a British Columbia land surveyor. After identifying part of Sir Alexander Mackenzie's route to the Pacific Ocean he became interested in the early history of the North American continent. He is the author of *Mackenzie's Rock*, and has contributed articles and reviews to the *Geographical Journal*.

Samuel S. Fowler, E.M., A.B., of Riondel, came to British Columbia in 1889 and has held various executive positions in Kootenay mining companies, including the well-known Bluebell property.

A. N. Mouat, after serving many years in the Hudson's Bay Company, was appointed city comptroller in Edmonton. He came to Victoria in 1917, joined the Provincial Civil Service, and eventually became the first comptroller-general of British Columbia, which office he filled until his retirement in 1929. He is a veteran of the Riel Rebellion.

BRITISH COLUMBIA HISTORICAL ASSOCIATION.

Victoria Section.

A general meeting of the Section was held in the Provincial Library on Friday, May 19, when about seventy-five members and friends enjoyed a most interesting lecture by Dr. T. A. Rickard, well-known mining engineer and Past President of the Section. His address was entitled *Drake's Plate of Brass*, a topic which proved to be a fascinating one, related in the speaker's usual finished style.

Dr. Rickard, who had recently personally examined the plate, told its history, outlining the facts surrounding the discovery in California in 1936 of this relic—" one of the world's long-lost historical treasures "—which Drake affixed to a post in 1579. This was done during his voyage round the world in the *Golden Hinde*, when he claimed the country, which he called New Albion, for Queen Elizabeth. The plate was found half buried beside the

road near San Rafael and corresponds to descriptions found in contemporary narratives of Drake's voyage.

The speaker told how the plate had been discovered first of all in 1933 near Drake's Bay, and carried across the peninsula " above all people by a member of the Historical Society of California, who thought it was a piece of scrap-iron, and threw it away without even examining it." Dr. Rickard pointed out the moral to all those interested in historical records to inquire into anything that might prove of interest. As he remarked, " those who seek, usually find."

The President, Mr. John Goldie, tendered the thanks of the Section to Dr. Rickard, and also stressed the necessity of preserving all relics of the past, and places of historical interest. [MURIEL R. CREE, Secretary.]

New Westminster and Fraser Valley Section.

The first meeting of this Section was held on April 4, in the City Hall Chambers, New Westminster. There was a large attendance of members, who much enjoyed Judge F. W. Howay's able address on *Ramblings through British Columbia.* A second meeting, which was also well attended, was held on May 16. Upon this occasion the guest speaker, Dr. Robie L. Reid, chose as his subject *Early Days at Fort Langley.* [E. M. COTTON, Secretary.]

FRASER CANYON HISTORICAL ASSOCIATION.

The first quarterly meeting of 1938 was held at Choate Lodge, kindly lent for the occasion by Mr. and Mrs. Hodson, on January 19. More than twenty members were present. The speaker of the evening was Mrs. W. Starrett, of Hope, who gave some interesting reminiscences of several pioneers of Hope, all of whom were known to herself in the early eighties. After reading her paper, which was entitled *Some Memories,* Mrs. Starrett exhibited and explained a number of unusual historical and Indian relics belonging to her own private collection. In the course of the evening interesting discussions took place regarding the meaning of a number of local geographical place-names. The second quarterly meeting was held in the Municipal Hall, Hope, on June 13, when sixteen members were present. Mr. Norman Hacking, of Vancouver, the guest speaker of the evening, chose for his topic *Steamboat round the Bend.* After Mr. Hacking's informative paper, members of the association were asked to relate reminiscences of steamboat travel on the Fraser River and many amusing incidents were narrated. At the annual meeting, which was held at Yale on July 4, the following officers were elected for the year 1938–39: President, T. L. Thacker; Vice-Presidents, C. E. Barry and Rev. A. F. Sheward; Secretary-Treasurer, G. J. MacKey; and Editor, Rev. H. H. K. Greene. The main feature of the meeting was the reading by Mr. Sheward of Rev. A. R. Lett's paper on *St. George's Residential Indian School at Lytton* and his own story of the *Development of St. Bartholomew's Hospital at Lytton.* The last quarterly meeting of 1938 took place at Flood on October 26, upon which occasion twenty-six members attended. Among those who contributed to the programme were the Secretary, G. J. MacKey, who read extracts from Mr. Charles Clowes' manuscript

entitled *Old Trails and Gold Trails of British Columbia.* Interesting and informative discussions concerning local place-names brought the meeting to a close.

The Society's collection of photographs, papers, and clippings is gradually being indexed and appropriately cared for. Since the last report of this Society, more than a year ago, the original Hope sun-dial, presented by the Royal Engineers in 1860, has been placed in the charge of Dr. W. K. Lamb, at the Provincial Archives, Victoria, and a replica secured which will be erected at Hope.

In March the Society suffered the loss by death of a valued member, Mr. G. J. MacKey, who had taken over the duties of Secretary-Treasurer in July, 1938. No successor to Mr. MacKey has as yet been appointed. [T. L. THACKER, President.]

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The BRITISH COLUMBIA HISTORICAL ASSOCIATION

Organized October 31st, 1922.

PATRON.

His Honour ERIC W. HAMBER, *Lieutenant-Governor of British Columbia.*

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OBJECTS.

To encourage historical research and stimulate public interest in history; to promote the preservation and marking of historic sites, buildings, relics, natural features, and other objects and places of historical interest, and to publish historical sketches, studies, and documents.

MEMBERSHIP.

Ordinary members pay a fee of $2 annually in advance. The fiscal year commences on the first day of October. All members in good standing receive the *British Columbia Historical Quarterly* without further charge.

All correspondence and fees should be addressed in care of the Secretary, Provincial Archives, Parliament Buildings, Victoria, B.C.