markings of the stone, which are more especially observable near the top of the seam.

I may add as worthy of remark, that in no other seam in any part of the Province, have I seen any thing of a similar character. Whether the McAuley, which from its position as an underlying seam has its northern crop nearer the anticlinal, is in like manner disturbed, is not yet known, as that part of it which is immediately beneath the Block-house seam has not been opened; but in the Gowrie mine, where it is worked, there is not any thing at all resembling the peculiarity I have endeavoured to describe.

We can imagine disturbances affecting the underlying strata in such a manner as to cause the seam to be disturbed, that the upper part would be fractured and present openings which subsequent deposits would fill up; but we should expect the floor of the seam to exhibit corresponding irregularities. Such, however, is not the case in this instance; from its southern crop to the centre of the basin, the bottom of the seam is regular in shape, and rests conformably on the strata beneath it, the plane of which is unbroken.

It seems therefore that some unusual conditions have existed during the formation of the Block-house seam, which have not occurred at an earlier period.

Art III. Gems and their application to the Arts.

By A. S. Foord.

(*Read January* 18, 1869.)

I have considered that a few facts relative to the mode of occurrence and natural appearance of gems, may not be uninteresting to those who reside in a country like Nova Scotia, abounding in almost every species of mineral wealth, and I have selected the following stones as being those universally valued for their beauty, rarity, and distinctive character, namely: the *Diamond*, the *Ruby*, the *Sapphire*, the *Emerald*, the *Beryl*, the *Topaz*, the *Amethyst*, the *Opal*, the *Garnet* and the *Turquoise*.

I shall commence with the diamond, which now holds the most prominent position amongst gems.

A great deal of confusion exists between the ancient and modern

nomenclature of precious stones, the names of some having as it were, changed places; thus, the term *adamant* of the early Greek writers was often erroneously applied to the diamond.

The first indisputable notice of our modern diamond occurs in Manilius, a poet of the latter Augustan era.

The eminent Roman naturalist Pliny, calls the diamond the companion of gold.

A modern authority on this subject, the author of a valuable work on antique gems, considers that the celebrated philosopher may have only stumbled on this truth by accident; but it still remains the fact that all diamond mines of which we know anything have been brought to light in the pursuit of gold. This was notably the case in Brazil, (Golconda seems to be an exception, for India possesses no gold mines,) but the frequent occurrence of diamonds in Australia, together with their still more recent discovery at the Cape, go far to prove the close association that exists between these minerals and the precious metal.

Taking into consideration the great extent of the Nova Scotian gold districts, it seems not improbable that the diamond will be eventually discovered in one or other of those auriferous areas where alluvial workings are carried on.

Professor Tennant, of King's College, London, a thoroughly practical mineralogist, who has made this subject his particular study, considers the discovery of diamonds in British North America to be quite within the bounds of possibility.

Owing to its high refracting power Sir Isaac Newton pronounced the diamond to be a combustible body. It is infusible even by intense heat, provided air be excluded, but when exposed to the atmosphere and heated between the poles of a strong galvanic battery, it has been converted into coke and graphite; thus proving that this hard transparent body is only carbon in a peculiar form. In addition to its great brilliancy as an ornamental gem, the discovery of its curious chemical nature invests it with a high degree of scientific interest.

The origin and true geological position of the diamond has never been ascertained, though it has always been a subject of speculation, and it is the prevalent opinion that the carbon, like that of coal, is of vegetable origin, some crystals having been

found containing black uncrystallized particles or seams presenting the appearance of coal.

Diamonds, with few exceptions, are obtained from alluvial washings. In Brazil the sands and pebbles of the diamond rivers and brooks are collected and washed by hand; under which process the diamonds are brought to light.

The diamonds of Brazil are seldom large, rarely exceeding 18 or 20 carats. One however, weighing 254½ carats, known as the *Star of the South*, was found accidentally in 1854 in the bed of a river.

The Island of Borneo, and also several localities in India, furnish this beautiful substance. It occurs in Hindoostan, in the district between Golconda and Masulipatam, and near Parma, in Bundelcund, where some of the finest specimens have been found. The once famous mines of Golconda have become nearly exhausted. In Borneo diamonds are obtained on the west side of the Ratoos mountains, with *gold* and *platina*.

The Brazilian mines were first discovered towards the beginning of the last century in the district of Serra do Frio, to the north of Rio de Janeiro.

Figure 1 represents a specimen consisting of a conglomerated mass of quartz pebbles, *rounded from having been water worn*, two crystals of diamond, one the size of a small pea, the other not larger than the head of a pin, and various grains of *gold;* the whole cemented together with oxide of iron. This specimen is especially interesting, as showing the association of diamonds with gold; it was brought by the late Mr. Mawe from the bed of a river in Brazil, who sold it to the Duke of Buckingham, and it is now in the possession of Mr. Ruskin, the well known Art-critic. Mr. Mawe states that when diamonds were discovered in the Brazils, they were used as counters for playing cards, the inhabitants being ignorant of their value, until the arrival of a person who, being struck with their geometrical symmetry of form, took a number of them to Portugal, where their true character was ascertained.

In the United States the diamond has been met with, according to Dana, in Rutherford county, North Carolina, and Hall county, Georgia. The same mineralogist makes the following statement with reference to the geological formation in which

diamonds occur; "the original rock in Brazil," he says, "appears to be either a sort of laminated granular quartz, called *itacolumite*, or a ferruginous quartzose conglomerate." This kind of formation is in the Brazils called *cascalho*. In India the rock is a quartzose conglomerate or diamond conglomerate, containing pebbles of sandstone and quartz.

The diamond assumes a great variety of colours, namely, pink, blue, yellow, brown and black; the last being exceedingly pure, but without beauty, is only prized by collectors. The pure white diamond is most highly esteemed.

Diamonds are found in rolled pieces, in indeterminate and spherical grains, and also naturally crystallized. The form is usually that of the regular octahedron or cube, or some figure geometrically connected with these; as for instance, two four-sided pyramids, joined together base to base, or as dodecahedrons. Many of the octahedral crystals exhibit a very peculiar appearance, arising from the faces being curved or rounded, which gives to the crystal an almost spherical form.

The diamond yields readily to mechanical division parallel to the planes of the regular octahedron; and it is by taking advantage of its cleavage, or property of separating into natural layers, that the diamond is cut, as well as by abrasion with its own powder, or by sawing it with an iron wire; the latter, however, is a very tedious process, as the wire is generally cut through after it has been drawn across the stone five or six times. Being therefore composed of a series of infinitely thin laminæ—in a plane with the surface of the crystal—the diamond can be easily split. This discovery was turned to good account by a gentleman who used to buy large ill-shaped diamonds at a low price, and subdivide them into more perfect crystals.

A remarkable instance of the ignorance that still exists respecting the true nature of the diamond was exemplified only two years ago on the discovery of the first stone of this description at the Cape of Good Hope. It was supposed this substance was of sufficient hardness to resist the blow of a hammer. The diamond in question was accordingly taken to a blacksmith, who placed it on his anvil, and struck it with considerable force; I need hardly say what was the result—the diamond was shivered into a thousand

pieces. It is a generally received opinion that the diamond, in consequence of its extreme hardness, will resist a blow of this kind. This is altogether a mistake: there is not a more brittle substance in nature than the diamond; although so hard as to scratch all other substances, it is, at the same time, so extremely fragile, that it would be a matter of great risk to let a valuable diamond fall upon the floor.

Besides the stone above mentioned, four more were found at the same locality—two of which were thus described in a paper read by Mr. Tennant before the Royal Geographical Society last Autumn.

"The first is in the shape of an octahedron, measuring in one direction three quarters of an inch, and in the other three-eighths, being therefore a compressed crystal. It presents a yellowish tinge of colour, and weighs 21 *carats*. This was found at Hope Town, on the Orange river, Cape of Good Hope. The second is an octahedron, more symmetrical, and was found June 7th, 1867. It weighs 8 carats. It is composed actually of two crystals, and in its present state it is worth £200.

Diamonds are cut by the following process: all irregularities are first removed by a slight blow of a knife; two diamonds are then set opposite each other on a couple of rapidly revolving discs, and are made, (having been previously covered with diamond dust and oil), to grind each other's faces. Steam power is used, and a number of wheels are set in motion in the same room. The business is confined to Amsterdam, and is entirely in the hands of the Jews, who employ about 10,000 workmen.

The following is the rule for estimating the value of diamonds. Square the number of carats, and multiply the sum by the selling price of a stone of one carat. For example, supposing the latter to be £8 (as it is at present), the value of a perfect brilliant of pure water of two carats would be $2 \times 2 \times 8 = 32$; the value of one of five carats, $5 \times 5 = 25$, which multiplied by 8 gives £200. Above 10 carats the price increases in such a rapid ratio, that few persons can afford to purchase the larger stones, and it therefore becomes difficult to sell them at their calculated value.

The average weight and size of diamonds may be learned from the results of an examination of 1,000 stones made by Professor

Tennant, who found that out of the entire number, one half weighed less than half a carat, 300 less than one carat, 80 weighed 1½ carats, 119 varied from 2 to 20 carats, and one weighed 24 carats.*

In reference to the crystalline form of diamonds, out of 1,000 which came in the same parcel, Mr. Tennant found one of the shape fig. 6, which is rare; about ten like fig. 5; fifty like fig. 4, and the remainder like 1, 2, 3, in an equal proportion.†

Mr. King, the author of "Antique Gems," to whom I have already alluded, is full of information concerning diamonds of historical renown. The largest *authentic* specimen ever discovered (for the King of Portugal's weighing 1,680 carats labours under the disgraceful imputation of being topaz) was the "Mogul," so called because it was presented by a runaway servant of the King of Golconda to Shah Jehan, the great Mogul. It weighed originally 787½ carats, but was reduced by unskilful cutting to 280. In form and size it resembles half of a hen's egg. The earlier history of the "Mogul" is often confounded with that of the "Koh-i-noor."

The magnificent diamond in the crown of the Emperor of Russia, known as the "Orloff," which formed the eye of a Braminican idol, was stolen by a French grenadier, who disposed of it at a very low price. It was afterwards offered to the Empress Catherine of Russia, who purchased it for £90,000 ready money, and an annuity of £4,000 more. In form and cutting it exactly resembles Tavernier's drawing of the "Great Mogul."

With regard to the "Koh-i-noor," or *Mountain of Light*, in the Persian language, Mr. King tells us that Tavernier saw it two centuries ago in the Mogul's treasury, soon after its discovery. It was found by a Golconda peasant while ploughing, and weighed in the rough 186 carats. It came into the possession of the British Government after the subjugation of the Punjaub in 1850, and was sent home to England, when it became the property of the Queen. It was shown at the Great Exhibition of 1851, when it was disfigured by a number of flaws (as indicated on the diagram.)

---

* The carat is equal to about 3¾ grains, Troy.

† The paper was illustrated by drawings of all the precious stones described, which we are unable to furnish.—*Ed. Trans.*

In 1862 it was again exhibited in London, amongst Her Majesty's jewels, after it had been recut by Messrs. Garrard. The present Koh-i-noor is what is technically called "a spread stone"—that is, it is shallow, with a large reflecting surface. The actual cost of recutting was £1,600.

From a careful examination of the stone before it was recut, Prof. Tennant arrived at the conclusion that it had originally formed a portion of a larger diamond, the form of which was a rhombic dodecahedron. He also suggested that the great Russian diamond, and another slab weighing 130 carats, had been taken from it. This division of the original dodecahedron into three was most likely the result of accident, as a very slight blow inadvertently struck, in the direction of the planes of cleavage, in setting the stone, or a fall, would have the effect of causing it to split. Possibly the slab alluded to above may have formed a diamond, with a flat surface, nearly as valuable as the Koh-i-noor, which Forbes, in his Oriental memoirs, describes as being with it in the royal treasury at Ispahan, and called the "Doriainoor," the "ocean of lustre."

The history of the Saucy diamond (weight 54 carats) is very curious. Nicholas Harlai, Seigneur of Saucy, its possessor, wishing to raise money upon it for the benefit of his friend, Henry IV., intrusted it to the care of a faithful servant. The man was beset by robbers and murdered. His master recovered the body, and calculating on his late vassal's fidelity, opened the stomach, where, as he expected, he found his lost treasure. He then carried out his intention, pledged it to the Jews, and was never afterwards able to redeem it. In 1649 it belonged to Henrietta Maria, Dowager Queen of England, from whom it passed to the Duke of York. After his abdication, the unlucky James sold it to Louis XIV. for £25,000. During the memorable days of September, 1792, it was stolen with the rest of the regalia; it reappeared in 1838, when the Princess Paul Demidoff bought it from an agent of the Bourbons for £75,000. In the winter of 1864 it was on view at Messrs. Garrard's, in London, and finally it has returned to its native land, having been purchased by the late Sir Jamsetjee Jeejeebhoy, of Bombay for £20,000.

The "Regent of France," the name of another celebrated

diamond, (weight 136 carats,) was found by a slave, who hid it in a gash in his leg, and escaped to Madras. A rascally English skipper lured him on board his vessel, under pretence of halving the profits, and settled the claims of the poor wretch by pitching him into the sea. The skipper sold his ill-gotten booty to a native dealer for £1,000. The dealer resold it to Mr. Pitt, the Governor of Sumatra, for £12,500, who brought it to England, where its possession rendered him utterly miserable. He was so fearful of robbery, it is related, that he never made known beforehand the day of his coming to town, nor slept twice consecutively in the same house. In 1717 the Regent Duke of Orleans relieved him of his burden by a payment of £135,000. "It is," says Mr. King, "the most perfect brilliant in existence, and for shape and water without a rival."

The uses of the diamond in the arts are considerable. Those that are unfit for working are sold for various purposes, under the name of *bort*. This, reduced to a fine powder in a steel mortar, is used by jewellers, lapidaries and others. Fine drills are made of minute splinters of bort, which are used for drilling holes in rubies and other hard stones, for the use of watch-jewellers, gold and silver wire drawers, and those who require very fine holes in china, where rivets are to be inserted, and for piercing holes in artificial enamel teeth, or any vitreous substance, however hard. Cameos and intaglios are also cut by its means, as well as seals. All the gems are cut and polished with diamond powder, which is likewise employed for cutting rock crystal for those superior spectacles called *pebbles*. The value of the most inferior diamonds, such as are unfit for jewellery, is £50 per ounce.

The stones next in importance to the diamond, are the Sapphire and the Ruby—both consisting of the same chemical ingredient, viz: pure alumina, and belonging to the same family as corundum. The name *sapphire* is usually restricted in common language to clear crystals of bright colours, used as gems; while the dull dingy-coloured crystals and masses are called *corundum*, and the granular variety of bluish-grey and blackish colours is termed *emery*.

The following are the different descriptions of the ruby, and have received distinct appellations. The carmine-red variety is the

spinel-ruby of the jewellers, the rose-red is called the Balas-ruby, so named from Balacchan, the Indian name of Pegu, whence this variety is brought; the violet spinel is the Almandine of Pliny, and the orange-red species is the Rubicella of jewellers. The best specimens come from the environs of Syriam, in Pegu. This gem is also found, but more rarely, in Ceylon, accompanied with Zircon or Hyacinth, and Tourmaline. It also occurs in the granular ejected limestone of Vesuvius, and in Bohemia.

The most remarkable oriental rubies mentioned, are two belonging to the King of Arracan, each of which was a six-sided prism, of the length of the little finger, and of about an inch in diameter at the base, a form which precludes the possibility of confounding them with any other stone.

The celebrated Marco Paolo says: "The King of Ceylon is reported to possess the largest ruby that was ever seen, being a span in length, and the thickness of a man's arm! brilliant beyond description, and without a single flaw." This was most likely *rubellite*, or red tourmaline.

A perfect ruby of large size is worth more than a similar diamond.

Blue sapphires occur of much larger size than the red ones. Sir Abram Hume possesses a crystal which is three inches long; and in Mr. Hope's collection of precious stones there is one crystal formerly belonging to the Jardin des Plantes of Paris, for which he gave £3,000.

The sapphire is usually found loose in the soil: primitive rocks, and especially gneissoid mica slate, talcose rock and granular limestone, appear to be its usual matrix. It is met with in several localities in the United States, but seldom sufficiently fine for a gem.

I must not omit to mention the huge ruby set in front of the Great Crown of England. It was presented to the Black Prince in 1367, and was afterwards worn by Henry V. in front of his helmet at the battle of Agincourt. In shape it is an irregular oval, pierced through the middle after the usual Indian fashion, and having this perforation filled up with a small stone of the same kind to conceal it.

The sapphire was seldom used for engraving on account of its hardness. Recently, however, a magnificent head of Jupiter, in the purest Greek style, was found ornamenting the pommel of a

Turkish dagger, the image-abhorring Moslem having turned the intaglio downwards, and faceted the back of the stone.

The Emerald and Beryl are varieties of the same mineral, and have a strong resemblance to each other, under the former name being comprehended the rich green transparent specimens, and those of other colours under the latter. Until very lately the colouring matter of the emerald was supposed to be due to the presence of one or two per cent. of oxide of *chromium*. This has, however, been proved to be incorrect by M. Lewy's recent chemical investigations into the formation and composition of the Emerald of Muzo. The quantity of chromic oxide obtained by analysis was so small as to be inappreciable, in fact too minute to be weighed separately; and the beautiful tint of the emerald is shown by M. Lewy to be produced by an organic substance, which he considers to be a carburet of hydrogen, similar to that called *chlorophylle*, which constitutes the colouring matter of the leaves of plants.

Besides the organic colouring matter, Mr. Lewy obtained from 1·6 to 2·15 of water, from which, in conjunction with the presence of fossil shells in the limestone in which they occur, he has come to the conclusion that emeralds have been formed in the 'wet' way, that is to say, that they have been deposited from a *chemical solution*.

As a precious stone the Emerald ranks next to the Ruby in value. It may be distinguished from all the other gems by its colour, a pure green, without any admixture of blue or yellow. The beryl was anciently held to be of equal worth with the emerald, but the vast supplies of modern times have rendered it, although a beautiful and lustrous stone, comparatively valueless. In the British Museum are two specimens from New Hampshire, weighing respectively 48 lbs. and 83 lbs.

The finest Beryls (aquamarine) come from Syberia, Hindoostan and Brazil. The most beautiful emeralds come from Grenada, where they occur in dolomite. A crystal from this locality, the largest known emerald, 2¼ inches long, and about 2 inches in diameter, is in the cabinet of the Duke of Devonshire. It weighs 8 ounces 18 dwts.; and though containing numerous flaws, and therefore but partially fit for jewellery, has been valued at 150 guineas. It was brought to England by Don Pedro, having been

obtained from the mines at Muzo. A more splendid specimen but weighing only 6 ozs. is in the possession of Mr. Hope. It cost £500.

Necklaces of Emerald have been found at Herculaneum, and in the Etruscan tombs. Emeralds of less beauty but of larger size are found in Siberia. A specimen in the Royal collection at St. Petersburg measures 14½ inches in length and 12 inches in breadth, and weighs 16¾ lbs. Troy.

In the United States Beryls of enormous size have been obtained, but seldom transparent crystals. They occur in granite and gueiss. Emerald is one of the lighest and softest of the precious stones.

The name Topaz is derived from Topazos, a small Island in the Red Sea, where, it is said, the Romans used to collect them. The prevailing colour of the Topaz is yellow, sometimes pale, as in the Saxon variety, (which loses its colour by heat and which in that state, has been sold for a diamond;) sometimes saffron-yellow as in that from India; sometimes brownish yellow, reddish, and even pink. These last three tints are peculiar to the Topaz of the Brazils. Perfectly colourless topazes are found in the Brazils at Minas Novas, and in Siberia, in which latter place they also occur of a pale blue, slightly inclining to green. These latter become electric by heat, while those of Saxony acquire electricity by friction only. In the Brazils Topazes have been met with of an amethyst color; they are very rare. In proof of this I may mention that a Mr. Von der Müll of Vienna paid 1500 ducats for a single specimen of violet-blue colored topaz.

Topazes have been sometimes engraved. There is at Paris a fine head of Bacchus, cut on yellow topaz; also a white topaz of the Brazils, on which are engraved the portraits of Philip II. and Don Carlos: it formerly belonged to the King of Spain. In the collection of the Emperor of Russia there are many beautiful topazes. The coarse varieties of topaz are employed as a substitute for emery, in grinding and polishing hard substances.

Topaz is cut on a leaden wheel, and is polished on a copper wheel with rotten stone. It is usually cut in the form of the brilliant or table. The white and rose-red are most esteemed. It occurs in a certain mountain rock, denominated "*Topaz rock*," which is an aggregate of massive topaz, quartz and *schorl*, or black

tourmaline, as it is now called. It also occurs in granite with beryl and rock crystal.

The accompanying diagram represents two crystals penetrating the quartz gangue.

It is worthy of remark that this mineral readily absorbs dust, and is liable to crack, particularly in the direction of its cleavage.

The amethyst is a purple or bluish-violet variety of *quartz-crystal*, often of great beauty. The colour is owing to a trace of oxide of manganese. This is an entirely distinct species from the true *Oriental Amethyst*, a most scarce and valuable variety of the precious corundum; being, in fact, a purple sapphire. This gem, from its rarity, is known to but few of the English lapidaries.

The common variety generally occurs in *geodes*, associated with layers of chalcedony, carnelian, flint, &c. There were two or three large masses of amethyst exhibited at the Provincial Industrial Exhibition, from Parrsboro'. The usual form of this mineral is that of a six-sided prism, terminated at both ends by a six-sided pyramid: the lateral planes being often deeply truncated.

The opal is confined to almost one locality only (Hungary). It is found chiefly in the porphyries, and is easily affected by damp. An opal ring should never be washed in warm or soapy water, as it is a mineral which owes its beauty to its flaws or fissures, and these would be filled up by the water. It appears for the same reason to better advantage on a dry than on a damp day.

In Mr. Beresford Hope's collection is an opal worth £1,000, the value of which defrayed a portion of the law expenses connected with the "Hope" collection. The opal contains about 90 per cent. of silica, and 10 per cent. of water; it is softer than quartz, and may be scratched by it, or with a good file. The smallest opal, if really beautiful, is generally worth £4 or £5, and when the stones are large, their price rises out of all proportion.

The finest opals exhibit a rich play of colours when held up to the light. The colours it displays are blue, green, yellow and red.

On account of its beauty and rarity, this mineral is worked by jewellers into ring stones, necklaces and other ornaments. It is cut into a convex form, or "*en cabochon*," as this form shows its colours to the greatest advantage. The cutting is done on a leaden wheel with tripoli and water.

It does not appear that the opal was ever much used for engraving on.

The opal is frequently minutely disseminated through the porphyry; and pieces of this kind, when cut and polished, are worked for ornamental articles, as snuff-boxes, &c. This is one of the few minerals whose name has remained unaltered from the earliest times.

The next stone I have to mention is the garnet. It occurs almost always in primitive rocks, most commonly in the form of the dodecahedron, as also in that of the trapezohedron.

The best garnets are from Ceylon and Greenland: the cinnamon stone, another variety, comes from Ceylon and Sweden.—The larger specimens are used as ring stones, and, after cutting and polishing, are set either *à jour*, or are provided with a foil. Jewellers, in order to heighten the colour and transparency of some garnets, form them into *doublets*, by attaching to the lower part of the stone a thin plate of silver; or hollow them underneath.

The smaller kinds are used for necklaces and bracelets. Many fine pieces of engraving have been executed on this mineral. In the National Museum in Paris, there are several beautiful engraved garnets, and among others a very fine head of Louis XIII.

The mode of occurrence of the turquoise (which is the last in my list), is described in the following manner by Major Macdonald, who presented a series of very interesting specimens of this mineral to the "Jermyn Street Museum":—

"In the year 1849, during my travels in Arabia in search of antiquities, I was led to examine a very lofty range of mountains composed of iron sandstone, many days journey in the desert; and whilst descending a mountain 6,000 feet high, by a deep and precipitate gorge, which in the winter served to carry off the water, I found a bed of gravel, where I perceived a great many small blue objects mixed with the other stones; and on collecting them I found they were turquoises of the finest colour and quality. On continuing my researches, through the entire range of mountains, I dicovered many valuable deposits of the same stones, some quite pure, like pebbles, and others in the matrix."

Turquoise is also brought from a mountainous district in Persia, where it occurs in veins that traverse the mountain in every direction.

The turquoise receives a fine polish and is highly esteemed as a gem. The *occidental* or *bone* turquoise, a much inferior and softer stone, consists of fossil teeth or bones, coloured with phosphate of iron. Green malachite is occasionally substituted for turquoise, but it can always be distinguished from the real gem by the difference of colour, as well as by its inferior hardness.

Art. IV. On the Antiquity of Man in America. By William Gossip.

Read February 8, *and March* 8, 1869.

THE PEOPLING OF AMERICA.

The Continent of America is an immense area ranging from lat. 82° N. to lat. 56° S. and from long. 35° to long. 168° W. It is bounded N. by the Arctic Ocean, E. by the Atlantic Ocean, W. by the Pacific Ocean, and S. by the Southern Ocean, so called. Although designated a Continent from its vast extension on all sides, it is nevertheless surrounded by water, the nighest land being the north eastern extremity of Asia, from which it is separated by the Streights of Behring, lat. 66° N., in some places only 36 miles broad. South of Behring's Streights, in lat. 57° N. are the Aleutian Islands, stretching from the Peninsula of Alaska nearly to the Asian Continent, lat. 52° 53′ N.—one thousand miles. These, the Asian shore of the Streights of Behring, and the Aleutian Islands, are the nearest lands west and north on the Pacific side to the American Continent. East and North, separated from America by Baffin's Bay and Davis' Streights is Greenland, ranging from lat. 59° 49′ to 81° 29′ N., with a much greater unknown northern extension; and from long. 20° to 75° W., which again is a short distance west from Iceland, easy of reach from the Continent of Europe. It must be evident therefore, that had the science of navigation been as well known to the ancient world as it is to the modern, in either continent, there could be no physical reason why America should not have been systematically peopled from Europe or Asia by these routes, if all others were impracticable, or why there might not have been an intercommunication between