

UTILITY OF VOLCANOES.

The Pulverized Material Which They Throw Out of Value to the Soil.

The solid matter thrown out by volcanoes is the most important contribution to the materials which the sea has at its disposal for the nourishment of its life and for the formation of strata. The quantity of the pumiceous and finely pulverized material is enormous. When it falls upon the sea it either floats for a time or at once sinks into the depths. In either case it is, to a great extent, dissolved in the ocean waters, and so contributes to the store of materials which may be appropriated by the organic life of the sea. When it falls on the land, it is generally so incoherent that it is easily swept away by the rains, and so comes quickly into the ocean. The importance of this contribution to marine sediments has been overlooked by geologists, but it is easy to see that it may amount to something like as much as the earthy matter which is brought to the sea by the rivers.

The volcanoes of the Java district alone within a century throws out a mass of this fragmentary rock amounting probably to not less than 100 cubic miles, and perhaps to twice this quantity. Now, the Mississippi river carries out in the form of dissolved matter, mud and sand about one cubic mile in twenty years, or five cubic miles in a century; thus these volcanoes of the Java district have brought up from the depth of the earth and contributed to the sea many times as much detritus as has been conveyed to the ocean by the greatest river in North America. Allowing for the greater porosity of the volcanic dust, it still seems not unlikely that the ejections from a half dozen great volcanoes of the East Indian archipelago, in a period of a little more than a century, from 1773 to 1833, far exceeded that brought into the ocean by all the rivers of North America in the same period.

Although the volcanoes of this district are by far the most powerful which are known, we still cannot fairly reckon that their ejections represent anywhere near the half of the total quantity which came to the earth's surface from such vents during the above named period of 111 years. For during this time some scores of great craters were in eruption, including Skaptar, in Iceland, Vesuvius, Etna, various volcanoes in South America and elsewhere. It seems, therefore, not unlikely that the solid material contributed by volcanoes to the sea floor may, on the average, amount to as much as that taken by the rivers from the land.

Among the solid substances which are ejected by volcanoes we find some of the most indispensable elements of organic life, including phosphorus, soda, potash and other materials. The value of these materials to vegetation may be judged by the fertility which so often characterizes the regions in the immediate vicinity of volcanic cones which cast forth large amounts of ash. If the rainfall be sufficient this ash quickly decomposes into a fertile soil, which tempts the husbandman to replant the fields as fast as they are ravaged by the explosion. Were it not for the constant return of these rarer and precious materials to the superficial part of the earth by means of volcanic action, it is likely that the earth's surface would want many of the substances most necessary for organic life. We thus see that volcanoes play a very important part in the physical history of our planet. The action is, in a large degree, restorative. They help to maintain the earth's surface in a condition in which it may nurture life.—Cincinnati Commercial Gazette.

Picking Up the Rare Coins.

"Do you know what a good many bank tellers and men who handle large amounts of gold and silver coins do at the close of the day?" queried a former clerk.

"Go home, probably."

"Yes, but not until they have looked through their metal cash for rare coins."

"Do they ever find any?"

"Certainly they do, sometimes, though not very often. It is a lottery. The fact that some of the rarest of American coins have been picked up in ordinary circulation keeps their eyes peeled. They know values pretty well, and the sanguine cherish the hope of unearthing one of the missing dollars of 1804, which are worth \$200 each. In fact, as high as \$800 has been offered and refused. The half dollar of 1852, representing Liberty seated, is in circulation. It is worth \$1.75. The quarter of 1853, without rays, is occasionally met. It brings \$2. Among silver dollars of recent coinage the 1858 dollar, representing Liberty seated, is the most valuable. It is worth \$15. So is the same coin of 1839. Both are in circulation. The twenty cent piece of 1877 is worth \$1.50, and of 1878, \$1.25. They are to be met, though rarely. The valuable dimes and half dimes were all coined before 1846. The silver three cent piece of 1878, with the large star, brings sixty cents; the copper two cent piece of the same year is worth the same. The flying eagle cent of 1856 sells for \$1. All the gold coins coined prior to 1833 command premiums.—Chicago Tribune.

Parts' Sewer Cleaning System.

It is scarcely probable that any other city in the world will have, at least for a long period, a system of sewer cleaning as efficient as that of Paris. The sewers are all constructed with that end in view, workmen can carry on their labors without stooping, and the bottom is so shaped as to facilitate the work by the different forms of water gates. In London a second sewer or gallery is sometimes constructed above the main conduit by which a partial cleaning is effected. There is not the slightest doubt that all cities will have eventually to build their great intersecting sewers, at least, in such a manner that workmen can pass through them and clean them. No amount of flushing will ever suffice.—Paris Cor. San Francisco Chronicle.

Published His Own Book.

An author who has published his own book has netted nearly \$20,000, whereas his royalties at the usual rates would have yielded him at the outside \$4,500. Some books advertise themselves by an attractive title, some by an ingenious system, some by the author's name, though a good, interesting story always advertises itself through its readers, as a good play always inspires those who see it to speak of it to others.—New York Times.

Corks in the Bricks.

German builders use a mixture of sand and lime molded into bricks for the construction of light partition walls. They say it excludes sound better than brick-work, is light, and a nonconductor of heat.

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Foreign Legations and Consulates in the Hawaiian Kingdom.

COUNTRY.	NAME.	RANK.	DATE OF EXPIRATION OF COMMISSION.
UNITED STATES.	His Excellency Geo. W. Merrill,	M. R.	June 12, 1885.
GREAT BRITAIN.	Major James H. Wodehouse,	Com., C. G.	June 21, 1866.
PORTUGAL.	Senhor A. de Souza Canavarro,	Com., C.	C. Sept. 5, 1882.
JAPAN.	Mr. Taro Ando,	D. A., C. G.	Jan. 12, 1883.
	Teitichi Takasugi,	Attaché.	Feb. 25, 1886.
	S. Iwab,		March 16, 1888.
	F. Tanno,		April 4, 1888.
	S. Hayakawa,		Aug. 24, 1888.
	M. G. G. Rosseront d'Anglade,	Com. C.	Dec. 28, 1888.
	M. Léon Bellaguet,	Chan.	Jan. 16, 1889.
			March 10, 1888.

List of Foreign Consuls Resident in the Hawaiian Kingdom.

COUNTRY.	NAME.	RANK.	DATE OF EXPIRATION.
UNITED STATES.	J. H. Putnam,	C. G.	C. July 10, 1885.
	F. P. Hastings,	V. & Dep. C. G.	Oct. 23, 1885.
	A. W. Richardson,	Com. Clerk.	Oct. 23, 1886.
	A. F. Hopke,	Com. Agent.	Aug. 20, 1880.
	C. L. Wright,	Com. Agent.	Oct. 23, 1882.
	O. Furneaux,	Com. Agent.	Sept. 22, 1888.
	F. A. Schaefer,	C. (Dean of the Com. Corps.)	May 30, 1869.
PERU.	A. J. Cartwright,	C.	Aug. 20, 1878.
NETHERLANDS.	J. H. Paty,	C.	Nov. 26, 1880.
AUSTRO-HUNGARY.	H. F. Glade,	C.	Nov. 28, 1882.
CHINA.	C. Alex,	Com. Agent.	April 17, 1884.
	Geo. King,	Asst. C. A.	May 28, 1885.
SWEDEN & NORWAY.	H. W. Schmidt,	C.	(Original Feb. 24, 1881.)
MEXICO.	R. W. Laine,	C.	Re-app. Dec. 2, 1887.
DENMARK.	H. R. Macfarlane,	C.	Jan. 22, 1886.
BELGIUM.	J. F. Hackfeld,	V. C.	March 14, 1887.
GERMAN EMPIRE.	H. F. Glade,	C.	Aug. 4, 1887.
SPAIN.	J. F. Hackfeld,	V. C.	Feb. 17, 1880.
RUSSIA.	J. F. Hackfeld,	Actg. V. C.	Sept. 24, 1886.
GREAT BRITAIN.	T. R. Walker,	V. C.	Oct. 17, 1888.

Diplomatic and Consular Representatives of Hawaii.

COUNTRY.	NAME.	RANK.	DATE OF COMMISSION.
UNITED STATES.	Washington, D. C.	En. Ex. and Min. Plen.	Feb. 9, 1883.
New York.	E. H. Allen,	C. G.	July 21, 1875.
San Francisco.	D. A. McKinley,	C. G. for Pacific States & Terr.	June 29, 1886.
Boston.	Lawrence Bond,	C.	Aug. 28, 1883.
Portland, O.	John McCracken,	C.	April 7, 1865.
Philadelphia.	James G. Swan,	C.	July 10, 1884.
Mexico.	Col. W. J. De Gress,	C.	Sept. 21, 1883.
	Anastasio Obregon,	V. C.	March 14, 1887.
	Robert James Barney,	C.	March 14, 1887.
Manzanillo, CENTRAL & SOUTH AMERICA.	David Thomas,	C. d'A. & C. G.	Sept. 13, 1858.
Valparaiso.	R. H. Boddy,	C. d'A. & C. G.	Aug. 22, 1871.
Lima.	Sylvanus Crosby,	C.	July 24, 1871.
Colima.	Henry E. Cooke,	C.	Nov. 18, 1884.
Guatemala.	Henry Tolke,	C.	July 23, 1883.
Monte Video, Assumption.	Conrad Hughes,	C.	Aug. 13, 1886.
	A. Marengo,	C.	Aug. 21, 1886.
GREAT BRITAIN & IRELAND.	Abraham Hoffnung,	C. d'A.	July 31, 1885.
London.	Sidney B. Francis Hoffnung,	Sec. to Leg. (Actg. C. d'A.)	July 31, 1885.
	Manley Hopkins,	C.	July 31, 1885.
Liverpool.	Harold Janion,	C.	Oct. 14, 1885.
Bristol.	Mark Whitwell,	C.	July 10, 1884.
Cardiff & Swansea.	W. Moran,	C.	Sept. 25, 1878.
Newcastle on Tyne.	E. Biesterfeldt,	C.	Oct. 12, 1882.
Falmouth.	W. S. Broad,	C.	July 10, 1887.
Dover and the Cinque Ports.	F. W. Prescott,	C.	March 14, 1887.
Cardiff & Swansea.	Hyam Goldberg,	C.	July 30, 1879.
Edinburgh and Leith.	E. G. Buchanan,	C.	Oct. 18, 1873.
Glasgow.	James Dunn,	C.	Nov. 18, 1870.
Dundee.	J. G. Zoller,	C.	July 25, 1881.
Dublin.	R. J. Murphy,	V. C.	Oct. 12, 1882.
Queensdown, Cork.	G. B. Dawson,	V. C.	Sept. 10, 1888.
Belfast.	W. A. Ross,	C.	Feb. 26, 1886.
CANADA.	C. Elliot Anderson,	C. G. for the Dominion.	May 14, 1885.
Ottawa.	Dickson Anderson,	C.	Aug. 23, 1883.
Montreal.	Col. Geo. A. Shaw,	V. C.	March 12, 1884.
Toronto.	J. D. Bell,	V. C.	March 12, 1884.
Rockville, Ont.	H. Brown,	V. C.	March 12, 1884.
Hamilton, Ont.	Geo. Collins,	V. C.	March 12, 1884.
Kingston, Ont.	G. Richardson,	V. C.	April 28, 1887.
Rimouski, Q.	J. N. Poullet, Q. C.	V. C.	March 12, 1884.
St. John's, N. B.	A. O. Crookshank,	C.	March 12, 1884.
Halifax, N. S.	E. F. Clements,	V. C.	March 12, 1884.
Yarmouth, N. S.	R. P. Rihet,	V. C.	Jan. 14, 1879.
Victoria, B. C.			
Vancouver, B. C.			
AUSTRALASIA.	Ernest O. Smith,	C. G. for Australia, etc.	Jan. 11, 1885.
Sydney, N. S. W.	H. E. Stokes,	V. C.	Oct. 1, 1888.
Newcastle.	Captain G. N. Oakley,	V. C.	Feb. 7, 1873.
Melbourne, Viet.	A. B. Webster,	V. C.	July 10, 1884.
Brisbane, Q.	Captain Hon. A. Coete,	V. C.	July 12, 1878.
London, Eng.	Geo. Collins,	V. C.	June 3, 1887.
Launceston, Tas.	D. B. Crookshank,	C.	July 9, 1878.
Auckland, N. Z.	H. Driver,	C.	Feb. 5, 1871.
Dunedin, N. Z.	Hon. J. Bell Irving,	C. G.	Sept. 21, 1886.
HONGKONG.	J. J. R. Schickel,	C. G.	Nov. 17, 1881.
SHANGHAI.	H. Schott,	C.	Oct. 5, 1882.
GIBRALTAR.			
FRANCE & COLONIES.	Alfred Houlié,	C. d'A. & C. G.	May 21, 1888.
PARIS.	A. Couvé,	C.	March 1, 1866.
Marseilles.	E. de Boissac,	C.	March 1, 1866.
Bordeaux.	C. Schaeffer,	C.	July 27, 1874.
Rouen.	J. T. Cognet	C.	Aug. 12, 1886.
SOCIETY GROUP.			
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GERMANY & COLONIES.			
Berlin.	E. F. Weber,	C.	March 25, 1876.
Hamburg.	J. F. Muller,	C.	July 8, 1887.
Bremen.	J. Kopp,	C.	Jan. 7, 1883.
Frankfort-on-Maine.	A. P. Russ,	C.	March 14, 1881.
Dresden.	H. Muller,	C.	April 28, 1871.
Karlsruhe.			
SPAIN & COLONIES.			
Madrid.	E. Minguéz,	C. G.	Nov. 19, 1888.
Barcelona.	G. Schan,	C.	July 21, 1887.
Cadiz.	V. Chnst,	C.	July 14, 1886.
Valencia.	F. T. De Navarra,	C.	March 14, 1887.
Malaga.	J. Paris,	C.	March 14, 1887.
Cartagena.			
CANARY ISLANDS.	L. Falcon y Quevedo,	C.	Sept. 29, 1885.
Las Palmas.	J. B. De Laguna,	V. C.	March 14, 1887.
Santa Cruz de la Palma.	B. Matheu y Battaller,	V. C.	March 14, 1887.
PORTUGAL & COLONIES.			
Lisbon.	A. F. De Serpa,	C. G.	April 19, 1888.
Oporto.	N. F. M. Ferro,	C.	March 26, 1883.
Madrid.	J. Hutchinson,	C.	Oct. 25, 1878.
St. Michaels.	R. Seeman,	C.	Nov. 17, 1881.
St. Vincent.	C. Martins,	V. C.	June 6, 1884.
ITALY.	J. Clinton Hooker,	C. G.	March 9, 1886.
Rome.	R. De Luchi,	C.	Aug. 21, 1867.
Genoa.	L. Colombo,	C.	July 14, 1886.
Naples.	A. Tagliavia,	C.	March 14, 1887.
Palermo.			
NETHERLANDS.	J. D. van der Made, P. R. z. n.,	V. C.	Nov. 15, 1886.
Amsterdam.	Victor Forge,	C. G.	July 31, 1885.
Dordrecht.	E. Coppeters,	C. G.	Aug. 27, 1880.
Belgium.	J. Bianpain,	C.	Sept. 10, 1888.
Antwerp.	E. Vanden Brande,	C.	April 6, 1885.
Ghent.			
Liège.			
Bruges.			
SWEDEN & NORWAY.	H. A. Burger,	C. G.	May 29, 1879.
Stockholm.	L. Samson,	C.	May 31, 1886.
Christiania.	H. Bergstrom,	V. C.	July 16, 1879.
Lyskil.	G. Kraak,	V. C.	March 14, 1887.
Gothenburg.			
AUSTRIA.	V. von Schünberger,	C.	Dec. 20, 1870.
Vienna.			
DENMARK.	J. Holmblad,	C. G.	May 4, 1880.
Copenhagen.			
JAPAN.	His Excellency R. W. Irwin,	Min. Res.	March 30, 1886.
Tokio.	S. Endicott,	C.	Nov. 20, 1882.
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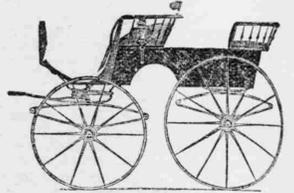
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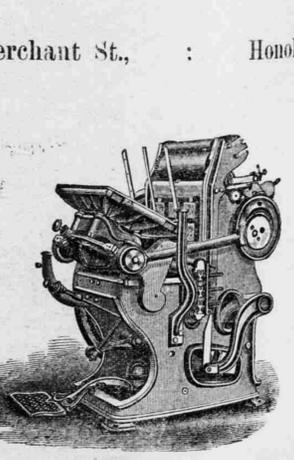
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