Bulletin of World Volcanism

Issue: June 2013

NEW ACTIVITY/UNREST

CONTINUING ACTIVITY

Continued on the inside

VOLCANO EXPRESS

BULLETIN INFORMATION

Writer (s); Lucas Wilson [Editor]

Promotion; Tom Pfeiffer

Partners with: VolcanoDiscovery

Contact: bulletinwv@hotmail.co.uk

For more information visit:

www.volcanismbulletin.org

FALSE REPORTS OF VOLCANIC ACTIVITY

-

WORLDWIDE MONTHLY VOLCANIC ACTIVITY

VOLCANOES ORGANISED BY THE CAVW/GVP VOLCANO NUMBER CODE

NAME: Kerinci
LOCATION: Indonesia (Sumatra)
HEIGHT: 3800 M
TYPE: Stratovolcano
COORDINATES: 1.697°S 101.264°E

At 08:43 (local time) on 2nd June, an eruption of the volcano was preceded by seismicity; locals reported a loud bang followed by the emission of black smoke. An ash explosion was reported followed by an ash emission to a height of 300 – 600 M; light ash fall was reported at Gunung Tujuh, 20 km away. A weak S02 emission was noted from the volcano on 2nd June.

Above; eruption of Kerinci on 2 June.

NAME: Merapi
LOCATION: Indonesia (Java)
HEIGHT: 2968 M
TYPE: Stratovolcano
COORDINATES: 7.542°E 110.442°S

On June 14th at around 09:15 (local time), a small ash eruption occurred at the volcano. Fine ashfall was reported at nearby villages.

NAME: Sangeang Api
LOCATION: Indonesia (Lesser Sundra Islands)
HEIGHT: 1949 M
TYPE: Complex Volcano
COORDINATES: 8.20°S 119.07°E

The CVGHM reported that during May through 13th June diffuse white plumes rose 10 M above Sangeang Api's crater. Both the lava dome and surrounding areas showed no changes since November 2012. The Alert Level had been increased to 3 (on a scale of 1-4) on 19th May due to a trend of increasing seismicity; as many as 77

Above; the incredible 3 coloured crater lakes of Kelimutu, Indonesia

shallow earthquakes and 66 deep earthquakes had been detected daily. Residents and tourists were advised to stay away from the craters within a radius of 5 KM. Since then seismicity decreased; 15 shallow earthquakes and three deep earthquakes were recorded on 13th June. The Alert Level was lowered to 2 on 14th June. The public were advised not to approach the craters within a radius of 1.5 KM.

NAME: Kelimutu
LOCATION: Indonesia (Lesser Sundra Islands)
HEIGHT: 1639 M
TYPE: Complex Volcano
COORDINATES: 8.77°S 121.82°E

On 3rd June, the water colour of the Tiwu Nuwamuri Kootai (crater 2) crater lake changed from blue to white, followed by the emission of "smoke" to a height of 50 M above the lake. A smell of sulphur was noted from the southern crater. Five shallow volcanic earthquakes were noted on 3rd June. On 4th June the Alert Level was raised from 1 (normal) to 2 (watch) on a scale of 1-4.

NAME: Mayon
LOCATION: Philippines
HEIGHT: 2462 M
TYPE: Stratovolcano
COORDINATES: 13.257°N 123.685°E

The PHIVOLCS reported that during 30th – 31st May diffuse, short-lived, bluish, hydrogen sulfide emissions rose from Mayon, and incandescence from the crater was observed. Sulfur dioxide emissions fluctuated between 5 and 388 tonnes per day, remaining below the normal level of 500 tonnes per

day. Seismicity was low, while a recently concluded ground deformation survey indicated slight inflation compared to February survey data. Based on the visual observations, and despite that most monitoring parameters remained within baseline levels, PHIVOLCS raised the Alert Level to 1 and reminded the public not to enter the 6-km-radius Permanent Danger Zone (PDZ).

The PHIVOLCS reported that during 5th – 10th June white to off-white steam plumes that drifted WSW, NW, WNW, NNE, and NE, and occasional bluish fumes, were observed at Mayon. Incandescence emanated from the crater during most evenings into early mornings; cloud cover prevented crater observations during 7th – 8th and 10th – 11th June. During 5th – 6thand 9th – 10th June the seismic network recorded one volcanic earthquake each period, and during 6th – 7th June one rockfall signal was detected.

NAME: Kikai
LOCATION: Japan (Ryukyu Islands)
HEIGHT: 704 M
TYPE: Caldera
COORDINATES: 30.789°N 130.308°E

The Tokyo VAAC reported that on 4 June a gas and ash plume from Kikai drifted W.

NAME: Chirinkotan
LOCATION: Russia (Kuril Islands)
HEIGHT: 724 M
TYPE: Stratovolcano
COORDINATES: 48.98°N 153.48°E

The SVERT reported that steam and gas activity at Chirinkotan was observed in satellite imagery on 5th, 7th, and 9th June.

The SVERT reported that a strong emission of steam and gas possibly containing ash was noted from the volcano on 11th June. A thermal anomaly was seen in satellite images on June 13th. Weak gas and steam activity was noted on 16th June.

The SVERT reported that a weak thermal anomaly over Chirinkotan was detected on 21st June. A thermal anomaly and steam-and-gas emissions were detected on 23rd June.

NAME: Pavlof
LOCATION: Alaska
HEIGHT: 2519 M
TYPE: Stratovolcano
COORDINATES: 55.42°N 161.887°W

The AVO reported that ash emissions at Pavlof began at approximately 11:00 on 4th June as observed in satellite images and by pilots. Satellite images showed an ash cloud drifting SE, and pilots estimated that the cloud was at an altitude of 5.8 KM a.s.l. Weak seismicity that began at 10:57 accompanied the emissions, and then continued. The Volcanic Alert Level was increased to Watch and the Aviation Colour Code was increased Orange.

The AVO reported that ash emissions from Pavlof that began on 4th June continued during 5th – 11th June, and were accompanied by seismic tremor and explosion signals. Overnight during 4th – 8th June satellite images detected elevated surface temperatures near the vent consistent with lava effusion and fountaining. On 5th and 6th June an ash plume observed in images drifted 40 – 45 KM W and SW, at altitudes of 4.3 – 5.5 KM a.s.l., based on pilot estimates. During 8th – 10th June images showed an ash plume drifting 20 – 53 KM SE.

The AVO reported that ash emissions from Pavlof were intermittent and minor during 12th – 14t June; ash plumes below an altitude of 6.1 KM a.s.l. mostly drifted SE. Elevated surface temperatures consistent with lava effusion persisted until 16:20 on 14th June. Seismicity decreased during 14th – 15thJune. Minor emissions likely stopped, but web-camera views were cloudy. On 17th June no plumes were visible in satellite images, and web camera views showed mostly cloudy conditions. During 17th – 18th June seismic tremor amplitude increased slightly, and elevated surface temperatures consistent with lava effusion were detected in satellite images. A small ash plume rose from the crater.

The AVO reported that during 19th – 25th June the eruption at Pavlov continued; seismic tremor and occasional explosions were detected. Cloud cover prevented web camera views. During 19th – 20th and 24th June elevated surface temperatures detected in satellite images were consistent with lava effusion. A small ash plume from the summit vent was also detected in satellite image on 19th June, and possibly detected during 20th – 22nd June.

At 22:50 on 24th June seismicity increased and became the strongest seismic activity detected so far during 2013. The seismicity was characterized by continuous intense tremor and frequent small explosions likely associated with lava fountaining and ash production. Seismicity remained high on 25th June. Satellite images and pilot observations

indicated that a plume drifted W at altitudes as high as 8.2 – 8.5 KM a.s.l. Satellite images also detected a strong thermal anomaly at the summit. Trace amounts of ash fell in King Cove, 48 KM SW.

NAME: Veniaminof
LOCATION: Alaska (USA)
HEIGHT: 2507 M
TYPE: Stratovolcano
COORDINATES: 56.17°N 159.38°W

The AVO reported on 9th June that seismic activity had increased since 7th June. The Volcano Alert Level was raised to ADVISORY and the Aviation Colour Code was raised to YELLOW. Webcam images noted a small steam plume from the volcano.

The AVO reported that seismic tremor was detected at Veniaminof on 12th June. Elevated surface temperatures were detected in satellite images at 05:25 on 13th June, likely indicating an intra-caldera eruption. In response, AVO raised the Volcano Alert Level to Watch and the Aviation Colour code to ORANGE. Seismic tremor continued that day, indicative of low-level effusive activity and small explosions. At 23:23 a pilot observed ash at an altitude of 3.7 KM a.s.l. and a lava flow effusing from the intra-caldera cinder cone. Residents in Perryville (32 KM SSE) and Port Moller (77 KM WSW) also observed ash emissions at about 23:30. During 15th – 18th June satellite images showed very high elevated surface temperatures at the intra-caldera cinder cone consistent with continued lava effusion. No plumes were observed in satellite images nor reported by pilots or local observers. Volcanic tremor continued to be detected.

The AVO reported that the eruption of Veniaminof continued during 18th – 25th June, indicated by volcanic tremor detected by the seismic network. Cloudy weather sometimes prevented views of the caldera, although most days satellite images showed very high elevated surface temperatures at the cinder cone inside the caldera consistent with lava effusion. On 18th June small ash clouds that rose less than 4.6 KM a.s.l. were intermittently observed in web-camera images. On 24th June satellite images detected elevated surface temperatures and a plume that drifted SW. The web camera recorded a small area of incandescence on the intracaldera cone.

On 25th June the web camera showed a light-coloured plume rising from the intracaldera cone to just above the caldera rim.

Above; small ash bearing plume from Veniaminof volcano's intracaldera cone on 13 June.

Below; lava fountaining from the intracaldera cone on 24 June.

NAME: Mauna Loa
LOCATION: Hawaii (USA)
HEIGHT: 4170 M
TYPE: Shield Volcano
COORDINATES: 19.475°N 155.608°W

The USGS reported on 12th June that minor inflation might be occurring at the volcano. Seismicity rates were also slightly elevated.

NAME: San Cristobal
LOCATION: Nicaragua
HEIGHT: 1745 M
TYPE: Stratovolcano
COORDINATES: 12.702°N 87.004°W

The INETER reported that on 7th June, 7 small explosions were noted from the volcano between 06:45 and 11:43 am (local time). The explosions were accompanied by a rising tremor. The explosions

produced small ash plumes that rose to a height of around 100 M above the crater.
Due to heavy rainfall, a small mudflow occurred at the volcano on 7th June at 17:10 (local time) that didn't cause any damage.

NAME: Cerro Negro
LOCATION: Nicaragua
HEIGHT: 728 M
TYPE: Cinder Cones
COORDINATES: 12.506°N 86.702°W

The INETER reported that on 4th June a period of volcanic tremor was noted from the volcano. The tremor started at 08:45 (local time) and increased in magnitude until 10:30 (local time), it then started to decline. The tremor was accompanied by 49 low-magnitude volcanic earthquakes.

NAME: Poas
LOCATION: Costa Rica
HEIGHT: 2708 M
TYPE: Stratovolcano
COORDINATES: 10.20°N 84.233°W

THE OVSICORI-UNA reported that during May temperatures of the cryptodome at Poás were high enough to produce nighttime incandescence. Maximum temperatures of 575 and 450 degrees Celsius were recorded on 8th and 30th May, respectively. Activity of the lake was very similar to that reported for May 2012, characterized by sporadic phreatic eruptions and a slow decline in the water level. On 8th May 2013 the water level was 0.5 M below the level measured on 8th May 2012. Phreatic eruptions occurred at 11:00 on 1st May, at 17:00 on 8th May, and at 11:25 and 15:10 on 28th May. Fumarolic activity was variable. During the early morning hours on 2nd and 3rd June, residents reported a gas plume rising 1 KM above the crater floor. OVSICORI-UNA noted that recent plumes were high-temperature (450-575 degrees Celsius) and rich in sulfur dioxide, giving the plumes a bluish-white colour.

Above; Cerro Negro

NAME: Turrialba
LOCATION: Costa Rica
HEIGHT: 3340 M
TYPE: Stratovolcano
COORDINATES: 10.025°N 83.767°W

OVSICORI-UNA reported that on 29th May a pilot flying past Turrialba about 40 KM away observed a blackish plume. Officials from the Parque Nacional Volcán Turrialba observed a gas plume that was slightly darker than usual between 07:30 and 07:45; seismic records showed no abnormal activity at those times or during the previous 48 hours. In addition, web camera images showed no noticeable ash emissions since 23rd May. Gas plumes over 750 degrees Celsius were emitted from Boca 2010 (on the W wall) and Boca 2012 (on the E wall). The plume from Boca 2010 was whiter than the plume emitted from Boca 2012, mainly due to the difference in the ratio of magmatic gases and aerosols, and no ash.
On 4th June slight ashfall was reported in Pacayas and San Pablo in Oreamuno de Cartago (25 KM SW). An observer in the National Park noted that between 14:00 and 15:00 gas emissions were slightly stronger and also greyish.

CONTINUING ACTIVITY

NAME: Etna
LOCATION: Italy (Sicily)
HEIGHT: 3330 M
TYPE: Stratovolcanoes
COORDINATES: 37.734°N 15.004°E

A VolcanoDiscovery tour to Etna on 7th June noted deep-seated explosions from within the conduit of the NE crater. Tremor levels were low.

NAME: Manam
LOCATION: Papua New Guinea
HEIGHT: 1807 M
TYPE: Stratovolcano
COORDINATES: 4.080°S 145.037°E

The RVO reported that during 1st – 12th June activity at Manam was low, characterized by white vapour emissions from Southern Crater. On 13th June diffuse grey emissions were observed, and two explosions at midnight were heard in Bogia, 25 – 30 KM SSW of Manam on the N coast of the mainland. During 14th – 15th June grey-to-brown ash plumes rose 100 M above the crater and incandescent fragment ejections from the crater were observed at night. Residents on the W part of the island heard explosions on 15th June. Diffuse brown-to-black ash clouds rose 600 – 700 M above the

crater on 17th June, and then changed to dense white clouds later that day. Strombolian activity observed at night was accompanied by roaring, rumbling, and explosion noises. Shock waves were occasionally felt. Strombolian activity increased on 18th June, generating plumes that rose 800 M above the crater. At 06:35 a small-to-moderate sized pyroclastic flow travelled down the SE valley and stopped 400 M a.s.l. Ash plumes from the pyroclastic flow rose 900 M above the crater. Roaring, rumbling, and explosion noises were accompanied by occasional shock waves. Plumes drifted NW.

Main Crater emitted white vapour plumes during 1st – 12th June. Weak but steady incandescence emanated from the crater at night on 2nd and 17th June.

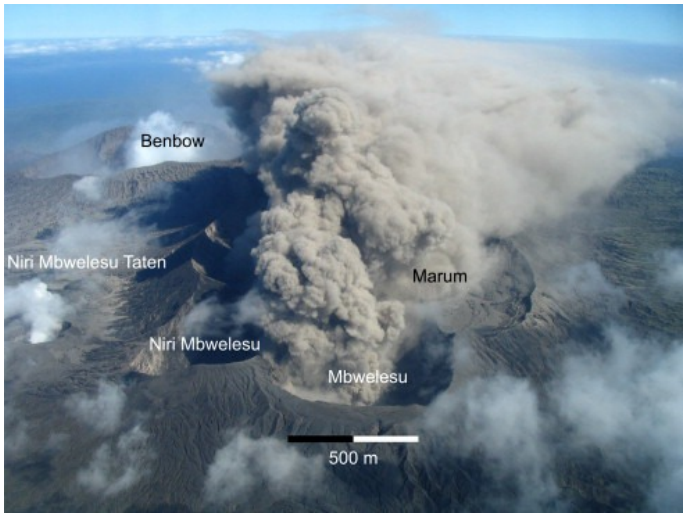
The Darwin VAAC reported that on 22nd June ash plumes from Manam rose to an altitude of 2.4 KM a.s.l. and drifted over 45 KM NE and NW.

NAME: Rabaul
LOCATION: Papua New Guinea
HEIGHT: 688 M
TYPE: Pyroclastic Shield
COORDINATES: 4.271°S 152.203°E

The RVO reported that during 17th – 31st May, white vapour plumes sometimes containing fine ash rose at most 800 M from Rabaul caldera's Tavurvur cone and drifted NW and SE. Ashfall was reported in areas downwind including Rabaul town (3 – 5 KM NW). Roaring and rumbling noises also continued. Seismicity was low, and slight inflation was detected at a station on Matupit Island (2 KM W).

The RVO reported that during 1st – 15th June white vapour plumes sometimes containing fine ash rose at most 800 M from Rabaul caldera's Tavurvur cone and drifted NW and SE. Ashfall was reported in areas downwind including Rabaul town (3 – 5 KM NW). Roaring and rumbling noises also continued, and seismicity was low. Photographers observed a 1-M-high lava dome on the crater floor on 12th June.

Above; the crater of Tavurvur cone.



Above; the 5 cones that sit within Ambrym's caldera.

NAME: Bagana
LOCATION: Papua New Guinea
HEIGHT: 1750 M
TYPE: Lava Cone
COORDINATES: 6.140°S 155.195°E

The Darwin VAAC reported that on 4th June an ash plume from Bagana rose to an altitude of 2.4 KM a.s.l. and drifted over 35 KM W.

The Darwin VAAC reported that on 17th June an ash plume from Bagana rose to altitudes of 2.1 – 2.4 KM a.s.l. and drifted over 35 KM NW.

NAME: Ambrym
LOCATION: Vanuatu
HEIGHT: 1334 M
TYPE: Pyroclastic Shield
COORDINATES: 16.25°S 168.12°E

On 21st June the Vanuatu Geohazards Observatory reported that satellite images on 2nd, 4th, 11th, 14th, and 16th June detected gas emissions from Ambrym. Emissions of minor amounts of ash and substantial amounts of gas from the active vents had been detected during the previous week.

NAME: Papandayan
LOCATION: Indonesia (Western Java)
HEIGHT: 2665 M
TYPE: Stratovolcanoes
COORDINATES: 7.32°S 107.73°E

The CVGHM reported that observers at the Papandayan observation post in Pakuwon Village reported no significant changes at Papandayan during May and the beginning of June. They noted that during May plumes rose less than 100 M above

Baru and Emas craters, and during 1st – 5th June plumes rose 20 M at most.
The energy of volcanic earthquakes sharply increased during 2nd – 4th May, and then decreased on 5th May. The average number of volcanic earthquakes declined from 35-49 events per day in early-to-mid May, to 14 events per day in mid-to-late May. The number of events continued to decline through the beginning of June. The number of local tectonic earthquakes also decreased significantly from an average of 67-71 events per day in early-to-mid May, to 2-17 events per day the latter half of May, to about 2 events per day in early June.
Based on the visual observations and decline in seismicity, CVGHM lowered the Alert Level to 2 (on a scale of 1-4).

NAME: Paluweh
LOCATION: Indonesia (Lesser Sundra Islands)
HEIGHT: 2665 M
TYPE: Stratovolcanoes
COORDINATES: 8.32°S 121.708°E

The Darwin VAAC reported that on 19th June ash plumes from Paluweh rose to an altitude of 2.4 KM a.s.l. and drifted over 35 KM SE.

NAME: Batu Tara
LOCATION: Indonesia (Lesser Sundra Islands)
HEIGHT: 748 M
TYPE: Stratovolcano
COORDINATES: 7.792°S 123.579°E

A possible lava flow might have formed on the volcano. MODIS thermal images on 1st June show a long line of thermal anomalies extending from the active vent to the sea. A weak white steam plume on the flank of the volcano was also noted.

NAME: Ibu
LOCATION: Indonesia (Halmahera)
HEIGHT: 1325 M
TYPE: Stratovolcano
COORDINATES: 1.488°N 127.63°E

The CVGHM reported that during May through 6th June white-to-grey plumes rose 200 – 450 M above Ibu's crater rim. Seismicity increased and volcanic tremor was detected. The lava dome contained to grow, especially the N part, and in early June had grown taller than the N crater rim. Based on visual and instrumental observations, as well as the hazard potential, CVGHM increased the Alert Level to 3 (on a scale of 1-4) on 7th June. The public was warned to stay at least 3 KM away from the active crater.

Above; the growing lava domes in the crater of Ibu.

NAME: Sakura-Jima
LOCATION: Japan (Kyushu)
HEIGHT: 1117 M
TYPE: Stratovolcano
COORDINATES: 31.585°N 130.657°E

The JMA reported that during 27th – 31st May, Sakura-jima's Showa Crater had four explosions, ejecting tephra that fell at most 1.3 KM from the crater. Crater incandescence was occasionally detected at night. A small pyroclastic flow travelled 700 M down the E flank. A pyroclastic flow also occurred in the crater. The Tokyo VAAC reported that on 30th May explosions produced plumes that rose to altitudes of 2.1 – 2.4 KM a.s.l. and drifted E.

An explosion was detected on 1st June, and on 2d June an explosion produced an ash plume that rose 1.5 KM a.s.l.

The JMA reported that during 10th – 14th June Sakura-jima's Showa Crater had four explosions, ejecting tephra that fell at most 1.3 KM from the crater. Crater incandescence was occasionally detected at night. One of the explosions on 13th June generated an ash plume that rose 3.3 KM above the crater rim. Based on information from JMA, the Tokyo VAAC reported that on 16th June plumes rose to an altitude of 2.7 KM a.s.l.

The JMA reported that during 21st – 24th June Sakura-jima's Showa Crater had five explosions, ejecting tephra that fell at most 1.3 KM from the crater. Crater incandescence was occasionally detected at night. Based on information from JMA, the Tokyo VAAC reported that on 20th June explosions were detected, and on 21st June a pilot observed ash. On 23rd and 25th June explosions produced plumes that rose to altitudes of 1.5 – 1.8

KM a.s.l. and drifted E and SE. On 23rd June a pilot observed an ash plume that rose to an altitude of 3 KM a.s.l.

NAME: Pagan
LOCATION: Mariana Islands (owned by the USA)
HEIGHT: 570 M
TYPE: Stratovolcanoes
COORDINATES: 18.13°N 145.80°E
Satellite imagery showed a vigorous plume of gas and steam drifting from Pagan during periods of clear weather from 15th to 21st June. A field crew working on the island confirmed the emissions. This activity was typical of Pagan in the recent months; no ash had been detected in satellite images.

NAME: Karymsky
LOCATION: Kamchatka (Russia)
HEIGHT: 1536 M
TYPE: Stratovolcano
COORDINATES: 54.05°N 159.45°E
The KVERT reported that weak seismic activity was detected at Karymsky during 25th – 26th May; technical problems prevented seismic data collection on the other days during 24th – 31st May. Satellite data showed a thermal anomaly on the volcano on 25th and 28th May, during periods of clearer weather conditions.
The KVERT reported that technical problems prevented seismic data collection at Karymsky during 31st May – 7th June. Satellite data detected a thermal anomaly during 1st – 3rd and 5th June. A thermal anomaly over the volcano was detected in satellite images during 8th and 12th – 13th June.
The KVERT reported that technical problems prevented seismic data collection at Karymsky during 14th – 21st June. A thermal anomaly over the volcano was detected in satellite images during 17th – 18th June; weather conditions prevented views on the other days.

NAME: Kizimen
LOCATION: Kamchatka (Russia)
HEIGHT: 2376 M
TYPE: Stratovolcano
COORDINATES: 55.130°N 160.32°E
The KVERT reported that during 24th – 31st May moderate seismic activity continued at Kizimen. Video and satellite data showed that lava continued to extrude from the summit, producing incandescence, strong gas-and-steam activity, and hot avalanches on the W and E flanks. A thermal anomaly was detected daily in satellite images.
The KVERT reported that during 31st May – 7th June moderate seismic activity continued at Kizimen. Video and satellite data showed that lava continued to extrude from the summit, producing incandescence, strong gas-and-steam activity, and hot avalanches on the W and E flanks. A thermal anomaly was detected daily in satellite images.
The KVERT reported that during 7th – 14th June moderate seismic activity continued at Kizimen. Video and satellite data showed that lava continued to extrude from the summit, producing incandescence, strong gas-and-steam activity, and hot avalanches on the W and E flanks. A thermal anomaly was detected in satellite images during 8th, 10th, and 12th – 13th June.
The KVERT reported that during 14th – 21st June moderate seismic activity continued at Kizimen. Video and satellite data showed that lava continued to extrude from the summit, producing incandescence, strong gas-and-steam activity, and hot avalanches on the W and E flanks. A thermal anomaly was detected in satellite images during 14th – 17th and 20th June.

NAME: Tolbachik
LOCATION: Kamchatka (Russia)
HEIGHT: 3682 M
TYPE: Shield Volcano
COORDINATES: 55.830°N 160.330°E
The KVERT reported that the S fissure along the W side of Tolbachinsky Dol, a lava plateau on the SW side of Tolbachik, continued to produce very fluid lava flows during 24th – 31st May that travelled to the W, S, and E sides of the plateau. Cinder cones continued to grow along the S fissure and weak gas-and-steam plumes were observed. A large thermal anomaly on the N part of Tolbachinsky Dol was visible daily in satellite imagery.
The KVERT reported that the S fissure along the W side of Tolbachinsky Dol, a lava plateau on the SW side of Tolbachik, continued to produce very fluid lava flows during 31st May – 7th June that travelled to the W, S, and E sides of the plateau. Cinder cones continued to grow along the S fissure and weak gas-and-steam plumes were observed. A large thermal anomaly on the N part of Tolbachinsky Dol was visible daily in satellite imagery.
The KVERT reported that the S fissure along the W side of Tolbachinsky Dol, a lava plateau on the SW side of Tolbachik, continued to produce very fluid lava flows during 7th – 14th June that travelled

to the W, S, and E sides of the plateau. Cinder cones continued to grow along the S fissure and weak gas-and-steam plumes were observed. A large thermal anomaly on the N part of Tolbachinsky Dol was visible daily in satellite imagery.
The KVERT reported that the S fissure along the W side of Tolbachinsky Dol, a lava plateau on the SW side of Tolbachik, continued to produce very fluid lava flows during 14th – 21st June that travelled to the W, S, and E sides of the plateau. Cinder cones continued to grow along the S fissure and weak gas-and-steam plumes were observed. A large thermal anomaly on the N part of Tolbachinsky Dol was visible daily in satellite imagery.

NAME: Shiveluch
LOCATION: Kamchatka (Russia)
HEIGHT: 3283 M
TYPE: Stratovolcano
COORDINATES: 56.653°N 161.360°E

The KVERT reported that during 24th – 31st May, a viscous lava flow effused on the N flank of Shiveluch's lava dome, accompanied by hot avalanches, incandescence, and fumarolic activity. Satellite imagery showed a daily thermal anomaly on the lava dome.

The KVERT reported that during 31st May – 7th June, a viscous lava flow effused on the N flank of Shiveluch's lava dome, accompanied by hot avalanches, incandescence, and fumarolic activity. Satellite imagery showed a daily thermal anomaly on the lava dome. On 10th June the seismic network detected an explosive event at 09:02 that lasted 6.5 minutes, and indicated that an ash plume possibly rose to altitudes of 7 – 8 KM a.s.l.

The KVERT reported that during 7th – 14th June a viscous lava flow effused on the N flank of Shiveluch's lava dome, accompanied by hot avalanches, incandescence, and fumarolic activity. Satellite imagery showed a daily thermal anomaly on the lava dome. Based on notices from Yelizovo Airport (UHPP), the Tokyo VAAC reported that on 14th and 16th June ash plumes rose to an altitude of 4.6 KM a.s.l. and drifted E.

The KVERT reported that during 14th – 21st June a viscous lava flow effused on the N flank of Shiveluch's lava dome, accompanied by hot avalanches, incandescence, and fumarolic activity.

On 22nd June an explosion was detected by the seismic network at 12:46 and lasted about four minutes. A second explosion at 13:10 produced an ash plume observed with the web camera that rose to an altitude of 6 KM a.s.l. and drifted NW.

NAME: Kilauea
LOCATION: Hawaii (USA)
HEIGHT: 1222 M
TYPE: Shield Volcano
COORDINATES: 19.421°N 155.287°W

During 29th May – 4th June, the HVO reported that the circulating lava lake occasionally rose and fell in the deep pit within Kilauea's Halema'uma'u Crater. The plume from the vent continued to deposit variable amounts of ash, spatter, and Pele's hair onto nearby areas.
At Pu'u 'O'o Crater, glow emanated from three spatter cones and a small lava pond on the E part of the crater floor. The Kahauale'a II lava flows travelled N from the base of Pu'u 'O'o cone. The most distal front of the flow was 1.8 KM from its source at a spatter cone on the NE edge of Pu'u 'O'o's crater floor. At 07:40 on 26th May lava began to spill from the N side of the NE spatter cone, feeding a new breakout on the N flank of Pu'u 'O'o. .
Peace Day activity, fed by lava tubes extending from Pu'u 'O'o, consisted of some breakout activity on the pali and coastal plain, but mainly flows entering the ocean at locations inside and outside the National Park boundary.

During 5th – 11th June, HVO reported that the circulating lava lake occasionally rose and fell in the deep pit within Kilauea's Halema'uma'u Crater. The plume from the vent continued to deposit variable amounts of ash, spatter, and Pele's hair onto nearby areas. The lake level was 45 – 46 M below the Halema'uma'u crater floor during 5th – 6th June.
At Pu'u 'O'o Crater, glow emanated from three spatter cones and a small lava pond on the E part of the crater floor; the NE spatter cone produced a small lava flow on 5th June. The Kahauale'a II lava flows, fed by the NE spatter cone, were active as far N as 2 KM and as far NNW as 1.6 KM, and burned forest in both areas. Peace Day activity, fed by lava tubes extending from Pu'u 'O'o, consisted of some breakout activity on the pali and coastal plain, and ocean entries at locations inside and outside the National Park boundary.

During 12th – 18th June, the HVO reported that the circulating lava lake occasionally rose and fell in the deep pit within Kilauea's Halema'uma'u Crater. The plume from the vent continued to deposit variable amounts of ash, spatter, and Pele's hair onto nearby areas. The lake level was about 45 M below the

Halema'uma'u crater floor during 14th – 15th and 17th – 18th June.

At Pu'u 'O'o Crater, glow emanated from three spatter cones and a small lava pond on the E part of the crater floor. The Kahauale'a II lava flows, fed by the NE spatter cone, were active as far N as 2.5 KM and as far NNW as 1.9 KM, and burned forest in both areas. Peace Day activity, fed by lava tubes extending from Pu'u 'O'o, consisted of some breakout activity on the pali and coastal plain, and ocean entries at locations inside and outside the National Park boundary.

During 19th – 25th June HVO reported that the circulating lava lake occasionally rose and fell in the deep pit within Kilauea's Halema'uma'u Crater but remained about 40 – 45 M below the crater floor. The plume from the vent continued to deposit variable amounts of ash, spatter, and Pele's hair onto nearby areas.

At Pu'u 'O'o Crater, glow emanated from three spatter cones and a small lava pond on the E part of the crater floor. The Kahauale'a II lava flows, fed by the NE spatter cone, were active as far N as 2.5 KM and as far NNW as 1.9 KM, and burned forest in both areas. At about 22;30 on 18th June breakouts from the Kahauale'a II lava tube, near the NE spatter cone and high on the NE flank of Pu'u 'O'o cone, produced lava that traveled N down the flank. Peace Day activity, fed by lava tubes extending from Pu'u 'O'o, consisted of some breakout activity on the pali and coastal plain, and ocean entries at locations inside and outside the National Park boundary.

NAME: Popocatepetl
LOCATION: Mexico
HEIGHT: 5426 M
TYPE: Stratovolcanoes
COORDINATES: 19.023°N 98.622°W

Above; webcam footage of an ash column form Popocateptl on 17 June.

The CENAPRED reported that during 29th May – 4th June, seismicity at Popocatépetl indicated continuing gas-and-steam emissions that contained variable amounts of ash; cloud cover often prevented visual confirmation. Incandescence from the crater was often observed at night. On most days steam-and-gas plumes were observed drifting SW and SSW. Some periods of high-frequency and low-amplitude tremor were detected on 31st May and 1st June. During the early morning on 3rd June a continuous plume of steam and ash was observed drifting SW. Later that day an ash plume rose 1 KM on 3rd June.

The CENAPRED reported that during 5th – 11th June seismicity at Popocatépetl indicated continuing gas-and-steam emissions that sometimes contained small amounts of ash; cloud cover often prevented visual confirmation. Incandescence from the crater was observed some nights; during 8th – 9th June incandescence increased with accompanying emissions. On most days steam-and-gas plumes were observed drifting SW and SSW. On 7th June the Alert Level was lowered to Yellow, Phase Two. An explosion on 8th June generated an ash plume that rose 1 KM above the crater and drifted SW. On 9th June ash plumes rose 0.6-2.5 KM and drifted SE and E.

The CENAPRED reported that during 12th – 18th June seismicity at Popocatépetl indicated continuing gas-and-steam emissions that sometimes contained small amounts of ash; cloud cover often prevented visual confirmation. During 12th – 13th June a total of about 45 minutes of low-amplitude harmonic and high frequency tremors were detected. An explosion at 17:16 on 14th June produced an ash plume that rose 1.5 KM above the crater. Another explosion at 17:27 produced an ash plume that rose almost 3 KM. The next day an explosion at 07:16 generated an ash plume that rose 2 KM. Explosions were also detected at 16:10 and 18:13.

During 14th – 17th June periods of low-amplitude harmonic tremor and high-frequency tremor continued to be detected. On 16th June an explosion at 06:11 ejected incandescent tephra 500 M onto the N flank.

An explosion on 17th June produced an ash plume that rose more than 4 KM and ejected incandescent tephra up to 2 KM from the crater. Some of the high-temperature fallout caused small fires in grasslands on the flanks. Ashfall was reported in Tetela del Volcán (20 KM SW), Ocuituco (24 KM SW), Yecapixtla (31 KM SW), Atlatlahucan (30 KM WSW), Cuautla (43 KM SW), Tlayacapan (40 KM WSW), Yautepec (50 KM WSW), Jiutepec (60 KM WSW), and Xochitepec

(70 KM WSW) in Morelos state. Ash also fell in Ecatzingo (15 KM SW), Atlautla (17 KM W), and Ozumba (18 KM W) in México state.

The CENAPRED reported that at 14:48 on 18th June an explosion from Popocatépetl generated an ash plume that rose 2 KM above the crater and drifted NW, and ejected incandescent tephra 100 M from the crater. During 19th – 25th June seismicity indicated gas-and-steam emissions that sometimes contained small amounts of ash; cloud cover often prevented visual confirmation although plumes were observed most days. Incandescence from the crater was occasionally observed and sometimes increased with accompanying emissions. During 23rd – 24th June a water vapour, gas, and ash plume rose 800 M and drifted NW. On 24th June ashfall was reported in Amecameca (20 KM NW).

NAME: Santa Maria
LOCATION: Guatemala
HEIGHT: 3772 M
TYPE: Stratovolcano
COORDINATES: 14.756°N 91.552°W

The INSIVUMEH reported that on 29th May white gas plumes rose 200 M above Santa María's Santiaguito lava-dome complex and drifted W. Avalanches occurred on the NE and S flanks of the dome. An explosion on 30th May generated an ash plume that rose 500 M; ashfall was reported in Calahuaché village. On 1st June a weak lahar descended the Nima I drainage on the SE flank, and on 2nd June dense white plumes rose from the dome. At 18:55 on 4th June a lahar again descended the Nima I drainage and was about 40 M wide and 2.5 M thick.

In a special bulletin on 5th June, the INSIVUMEH stated that residents of Quetzaltenango, 18 KM WNW of Santa María, reported slight ashfall and a sulfur odor. On 6th June white and blue emissions rose 400 M from the E edge of the Santiaguito lava-dome complex's active dome. The next day gas plumes rose 500 M and drifted N. On 8th June lahars carrying blocks descended the Nima I and Tambor drainages on the S flank. An explosion on 9th June generated an ash plume that rose 600 M and caused ashfall in Monte Claro (S). On 11th June white gas plumes rose 100 M and drifted SW. A few weak avalanches travelled S.

The INSIVUMEH reported that on 19th June an explosion from Santa María's Santiaguito lava-dome complex generated a white plume that rose 700 M and drifted SW. On 20th June lahars that descended the Nimá I and Tambor river drainages on the S flank were 30 M wide and 3 M thick. The lahar in Nimá I carried blocks up to 3 M wide as well as branches and tree trunks. The lava dome continued to grow on 22nd June and fed a lava flow that travelled S, which produced avalanches from the flow front. An explosion on 23rd June generated a grey plume that rose 500 M and drifted SW, causing ashfall in Monte Claro (S). On 23rd and 25th incandescent avalanches descended the S flank. Explosions on 25th June produced ash plumes that rose 700 – 1,000 M and drifted 10 KM S and SW.

NAME: Fuego
LOCATION: Guatemala
HEIGHT: 3763 M
TYPE: Stratovolcano
COORDINATES: 14.473°N 90.880°W

The INSIVUMEH reported that rumbling and sounds resembling jet engines were heard from Fuego during 28th – 30th May; cloud cover often inhibited visual observations of the crater. On 29th May a lahar carrying blocks up to 50 cm in diameter travelled SE down the Las Lajas and El Jute drainages. On 30th May a plume was observed rising 200 M above the crater and drifting S. During 1st – 2nd and 4th June explosions generated ash plumes that rose at most 800 M and drifted 5 – 8 KM W and NW. Incandescent material was ejected 100 M above the crater and generated avalanches. On 2nd June heavy rain caused

Above; Fuego as seen from neighbouring twin volcano Acatenango.

lahars that travelled down the Ceniza drainage, carrying trees, logs, and blocks. On 3rd June diffuse white plumes rose 200 M.

The INSIVUMEH reported that during 5th – 8th June explosions at Fuego generated ash plumes that rose 200 – 500 M and drifted 4 – 6 KM W and NW. The explosions produced weak rumbling, ejected incandescent material 100 M above the crater, and generated avalanches. On 8th June lahars descended the Las Lajas and El Jute drainages (SE), and the Ceniza drainage (SSW). During 9th – 11th June explosions produced ash plumes that rose 500 – 1,200 M and drifted 8 – 12 KM W and NW. The explosions again produced rumbling, ejected incandescent material 150 – 300 M above the crater, and generated avalanches. Shock waves vibrated local structures during 8th – 9th June.

NAME: Pacaya
LOCATION: Guatemala
HEIGHT: 2552 M
TYPE: Complex Volcano
COORDINATES: 14.381°N 90.601°W

The INSIVUMEH reported that incandescence from Pacaya's crater was observed late at night on 28th May. Weather conditions prevented observations the next day. On 30th May a small effusive eruption occurred for about two hours. A small explosion ejected ash and lapilli 200 M above the crater that was then deposited within 400 M of the crater. Inclement weather prevented observations the rest of the day; however, the seismic network detected tremor and weak explosions.

NAME: Reventador
LOCATION: Ecuador
HEIGHT: 3562 M
TYPE: Stratovolcano
COORDINATES: 0.077°S 77.656°W

The Washington VAAC reported that on 1st June gas emissions from Reventador possibly contained diffuse ash. Ash was not detected in satellite images. According to the Washington VAAC a pilot observed an emission from Reventador that rose to an altitude of 4.9 KM a.s.l. on 20th June. The VAAC also noted that seismic records from IG were consistent with an emission of ash or gas, and that satellite images did not detect ash.

NAME: Copahue
LOCATION: Chile/Argentina border
HEIGHT: 2997 M
TYPE: Stratovolcano
COORDINATES: 37.85°S 71.17°W

The OVDAS-SERNAGEOMIN reported that during 28th – 29th May seismicity at Copahue had decreased with respect to the previous 24-hour period; the majority of the signals were low-magnitude hybrid events, detected at an average rate of 127 per hour. Meteorological cloud cover prevented visual observations. During 29th – 30th May seismicity again decreased; earthquakes were detected at a rate of 40 events per hour. A camera near the volcano recorded a white plume that rose 100 – 200 M and drifted SE. The seismic network continued to record a downward trend during 30th – 31st May, with 120 events per hour detected during the night. By the time of the release of the report at 17:00 on 31st May about 20 events per hour were being detected. Visual observations were again inhibited due to weather conditions. About 42 events per hour were recorded during 31st May – 1st June, about 52 events per hour were detected during 1st – 2nd June and about 102 events per hour were detected during 2nd – 3rd June. A small plume rose 80 M above the crater during 2nd – 3rd June. ONEMI reported on 3rd June that about 280 people, of 2,440 people, remained within the 25-KM evacuation zone. That same day SERNAGEOMIN lowered the Alert Level to Orange.

The OVDAS-SERNAGEOMIN reported that during 4th – 11th June, white plumes recorded by a web camera rose at most 200 M above Copahue and drifted N and E. During 4th – 5th June seismicity had decreased with respect to the previous 24-hour period; the majority of the signals were low-magnitude hybrid events, detected at an average rate of 42 per hour. During 5th – 6th June seismicity was similar to the previous period, with an average of 50 events per hour being detected. Seismicity increased during 6th – 7th June; an average of 84 events per hour was detected. During 7th – 8th June seismicity fluctuated with a high average of 124 events per hour then decreased to a low average of 8 events per hour; the overall average was 62 events per hour. Seismicity decreased during 8th – 9th June; only 5 events per hour were detected. On 9th June OVDAS-SERNAGEOMIN scientists aboard an overflight to locate sites for the installation of three additional

seismic stations observed fumaroles inside Del Agrio Crater, and gas emissions that rose at most 200 M and drifted NE. They noted that no lava dome was present. During 9th – 10th June the number of earthquakes increased to an average of 20 events per hour.

OVDAS-SERNAGEOMIN reported that during 11th – 12th June seismicity at Copahue had significantly decreased with respect to the previous 24-hour period; the majority of the signals were low-magnitude hybrid events, detected at an average rate of one per hour. White plumes recorded by a web camera rose at most 100 M and drifted E. Seismicity remained low during 12th – 13th June; an average of one event per hour continued to be detected. Meteorological cloud cover prevented views of the crater.

The Buenos Aires VAAC reported that on 26th June steam-and-gas emissions from Copahue possibly contained ash. Ash was not detected in clear satellite images.

All volcano reports in this issue are subject to change. All reports in this issue were from the following sources.

Global Reports:

Activolcans: http://activolcans.info/

VolcanoDiscovery: http://www.volcanodiscovery.com/news.html

Global Volcanism Program (Weekly Reports): http://www.volcano.si.edu/reports/usgs/

Volcanolive - John Seach: http://www.volcanolive.com/index.html

And Also the writers and commenters of Eruptions and VolcanoCafe.

Also Including:

CVGHM (See Acronyms and Abbreviations): http://www.vsi.esdm.go.id/

Acronyms and Abbreviations

a.s.l - Above Sea Level

AVO - Alaska Volcano Observatory

CENAPRED - Centro Nacionale de Prevencion de Desastres

CVGHM - Center of Volcanology and Geological Hazard Mitigation

HVO - Hawaii Volcano Observatory

IG - Instituto Geofísico

INETER- Instituto Nicaragüense de Estudios Territoriales

INSIVUMEH - Instituto Nacional de Sismologia, Vulcanologia, Meteorologia e Hidrologia

JMA - Japanese Meteorological Agency

KVERT - Kamchatkan Volcanic Eruption Response Team

MODIS - Moderate Resolution Imaging Spectroradiometer

OVSICORI-UNA - Observatorio Vulcanológico y Sismológico de Costa Rica

PHIVOLCS - Philippine Institute of Volcanology and Seismology

RVO - Rabaul Volcano Observatory

SERNAGEOMIN - Servicio Nacional de Geología y Minería

SVERT - Sakhalin Volcanic Eruption Response Team

USGS - United States Geological Survey

VAAC - Volcanic Ash Advisory Centre

Volcano EX Press

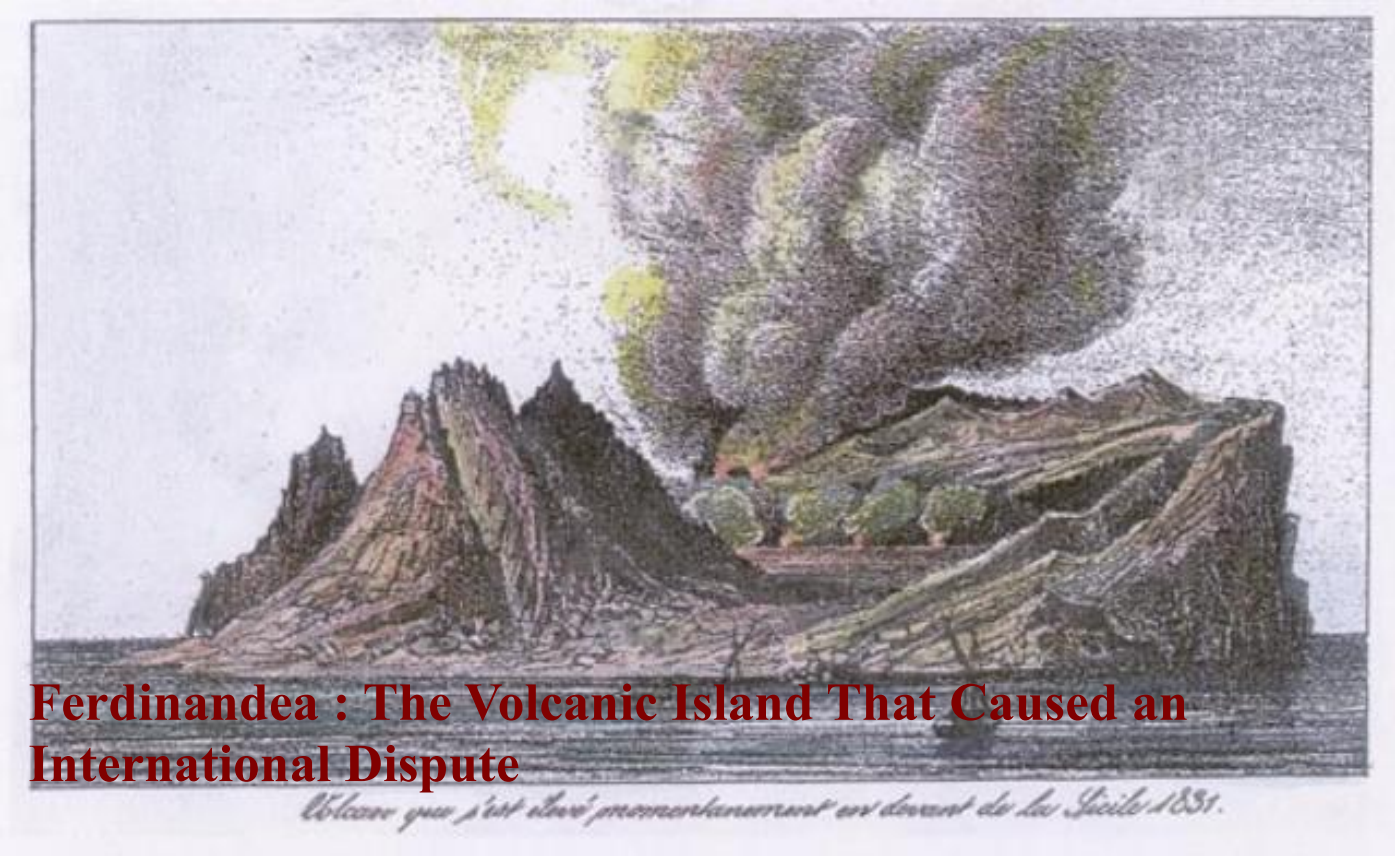
Issue 5, June 2013

The Latest in Volcanoes and Volcanic Eruptions

A Bulletin of World Volcanism magazine

www.volcanismbulletin.org

bulletinwv@hotmail.co.uk



Ferdinandea : The Volcanic Island That Caused an International Dispute

A new islands birth is usually a happy affair, but Ferdinandea island south a Sicily was about to be born into a world of trouble.

Tectonics And Geology

The volcanoes in this region, including nearby Pantelleria island are thought to have formed in deep submarine troughs akin to continental rift zones. The cause of volcansim in the region is probably the Northward migration of the African Plate.

Ferdinandea (also known as Graham Bank) is

Continued on page 16

Also in this Issue:

just one of many volcanic cones in a large volcanic field south of Sicily called the Campi Flegrei mar Sicilia.

Two of these cones have erupted in historical times, the other is Pinne, which produced the fields last eruption in 1867.

Ferdinandea is part of a double coned volcanic centre in the volcanic field (see image). The left cone was formed in an undated eruption.

1831 Eruption and Dispute

On 28 June 1831, a ship passing Graham Bank reported "unusual agitation". In July that year, foul-smelling odours were reported in Sciacca, Sicily, 50 KM to the NE.

Also, fisherman reported that the sea was "boiling and full of dead fish". In the following days, water columns were seen spurting up at 10-15 minute intervals. Pumice was washed up on the shores of Sicily on July 12.

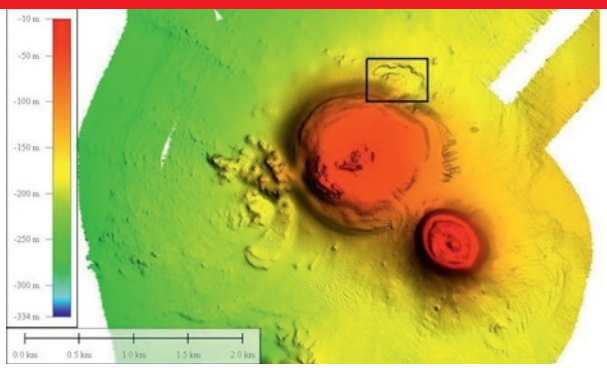
By 16 July, a small island, 3 metres high had formed. In August the island was an incredible 65 M high and 3700 M in diameter, the island was built up by vigorous eruptions.

Sir Henry Hotham, commander of the British Mediterranean Fleet had heard the news of the new island and sought to claim the island for Britain.

Why did Sir Henry want the new island?, it is because the new island was in a very strategically placed position in the Med.

On August 2, 1831 Captain Humphrey Senhouse claimed the island for King William IV and in honour of the First Lord of the admiralty, named it Graham island.

The claim had caused alarm in Italy, King Ferdinand of Naples had a ship sent to the



Above; submarine geology of Graham bank, the cone that formed the island is on the right.

island and also laid claim to it. A third party (a French Geologist) also claimed the island for France, and Spain also showed some interest.

Fortunately, although the island was large, it still had not erupted enough material to prevent the sea entering the vent; this meant that the eruption couldn't produce lava flows that would've protected the island.

The sea entered the vent and by the time the eruptions had stopped, the Mediterranean Winter storms destroyed the island. The cone now lies just 8 metres below the sea surface.

Dispute Resumes in early 2000's

Unrest at the volcano in the early 2000's had reopened the dispute, during the period of unrest, the Italian Government had a diver place an Italian flag on the seamount.

The Future

Fresh eruptions at the volcano would almost certainly produce an new island. But it is not known if any dispute will rise on the island.

The South Pacific's New Island's

The South Pacific is a haven for hotspot or mantle plume volcanism. It is known to have at least 4 regions of hotspot activity: Samoa, Society, Austral and Pitcairn.

It is exciting times for these regions as 3 of these area's are undergoing a special stage in their lives.

Mantle Plumes

The cause of Mantle plume is very poorly known. What is known is that these plumes of superheated rock from the Earth's mantle erupt through the crust of one of the Earths tectonic plates.

As the plate (in this case the Pacific oceanic plate) moves over the stationary plume, new islands are created. This progression can be seen at many hotspot regions, where the youngest volcanoes are at one end and get progressively older the further you travel away from them

A Special Time

As explained above, new islands are being created while the older volcanoes go extinct as they move further from the mantle plume. 3 of these islands are in a special time in their lives where the older land volcanoes are extinct and submarine volcanoes which will become the new islands are growing underneath the sea surface.

Society Islands

The Society island chain driven by the Society Hotspot has created the natural wonders of Tahiti and Bora Bora.

The youngest major volcanoes, those of Tahiti have been extinct for a a few hundreds of thousands of years. But new Submarine centres to the south and to the east have been developing.

Above; Mehetia volcano, in the Society islands, is the only young volcano to have breached the surface.

One of these volcanoes, Mehetia has already breached the surface at some point in pre-history, and is the newest Society islands, its form indicates that it may only be a few thousand years old.

Two seamounts east of Tahiti; Rocard and Tehetia are the two smallest seamounts and will probably join together to create one island. Both these volcanoes have had historical eruptions.

South of Tahiti is the massive Moua Pihaa seamount. It rises 3500 metres above the sea surface to within just 160 metres of the sea surface. This volcano could breach the sea's surface within the next few hundred years. Eruptions were noted in 1969 and 1970.

Other Area's

All of the islands mentioned have active seamounts which will become the next islands of the Pacific. Pitcairn Hotspot has Adams Seamount. The Austral islands have Macdonald Seamount and Samoa had Vailulu'u Seamount.

It is a very interesting time in the history of these island chains. We will be following these 'youngsters' very closely.

Book Review; Studies in Volcanology: The Legacy of George Walker

As discussed in the previous issue of Volcano Express, George Walker was one of the most important figures in the history of volcanology.

After a convention following his death, a memorial volume was agreed to be made. The book *Studies in Volcanology: The Legacy of George Walker* covers all fields of George Walkers career, from pyroclastic deposits to classification of caldera's.

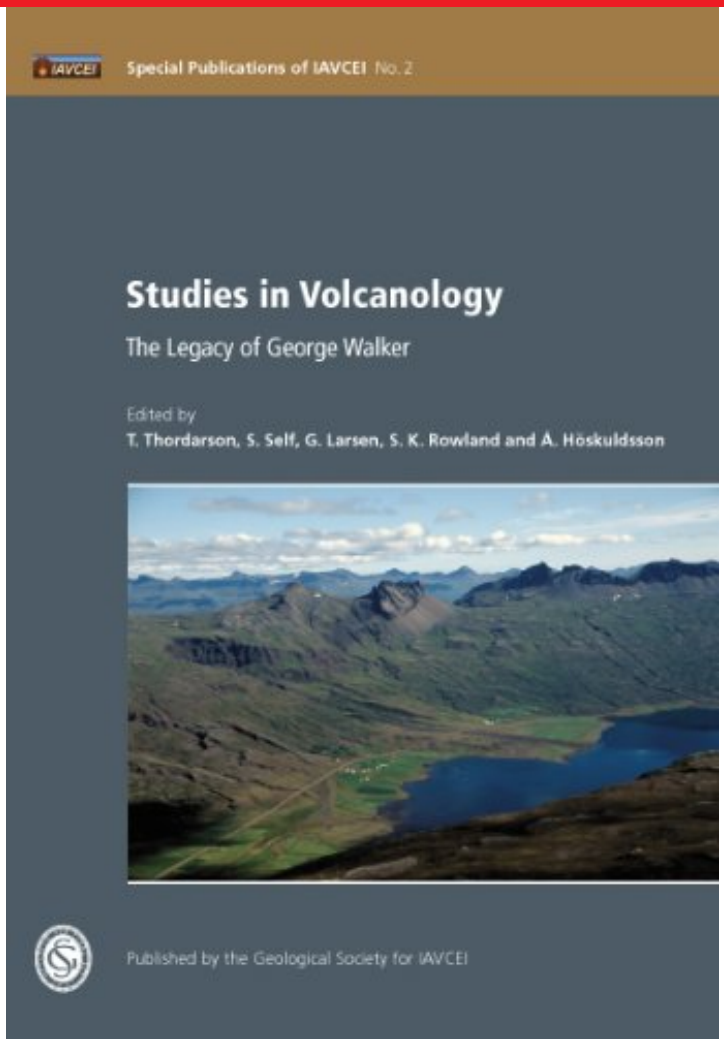
Many of the papers were made by Walker's former students and colleges. In the introduction to each paper a small comment is made about George Walkers connection to the said paper.

The book begins with a summary of Walker's career. This is followed by the most special paper in the book. The paper, entitled *The Endogenous growth of pahoehoe lava lobes and morphololgy of lava-rise edges* was originally made by Walker in 1992, but failed to make publication twice. His work was finally presented in this volume.

Each of the papers are beautifully illustrated and cover many aspects of volcanism. One of my personal favourites explains Volcanism in the Central Taupo Volcanic Zone in New Zealand.

The books ends with a picture summary of Walkers life.

This is a very good volume that should ensure that Walkers legacy continues well beyond his death.



Year: 2009

Authors: T.Thordarson, S.Self, S.K. Rowland and A. Hoskuldsson

Pages: 416 p

Publisher: Geological Society of London for the IAVCEI

Price: £110.00

Rating: 4.5/5

Website of the Month

Culture Volcan

Many people these day's want information fast, with French site, Culture Volcan, it is the fastest volcanic eruption information site in the world. In a couple of months this small blog has become famous amongst volcanic activity reporters for its regularly updated news section.

http://laculturevolcan.blogspot.co.uk/

Volcanoes are Beautiful!

The best pictures of volcanoes from the Internet.

The Alpine Beauty of Taranaki Volcano, New Zealand.

www.wallseemly.com