

SO-255
Vitiaz
4. Weekly Report
(20.03. – 26.03.2017)



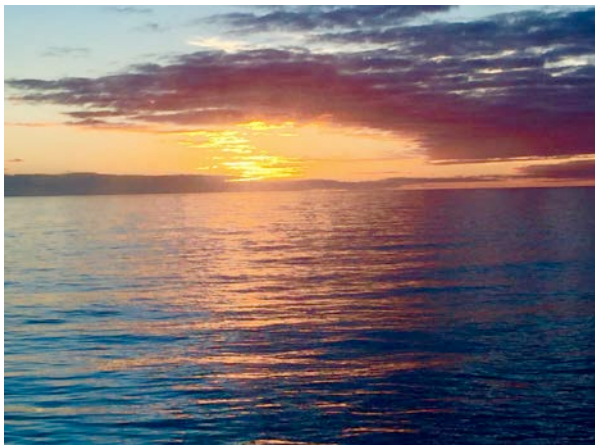
The beginning of the week was spent sampling our northernmost profile of the study area between c. 28-29°S latitudes. The sampling was very successful on the Kermadec Ridge and in the eastern and younger portion of the Havre Trough. We were even able to sample the Havre Trough basement by dredging one of the fault scarps forming a graben wall. Although all cones on the eastern side of the Trough produced fresh samples, we only recovered mud from the cones on the western side, indicating that they were older and covered by marine sediments. Next we sampled a fault scarp on the Colville Ridge and a guyot seamount west of the ridge. Guyots are flat-topped, steep-sided, conical volcanoes, which in most cases once formed ocean island volcanoes. After the volcanic activity ceases, the tip of the volcano is eroded to sealevel. As the crust beneath the volcano cools, it subsides below sealevel. On Tuesday the dredging came to a halt due to problems with the deep-sea winch. As a result we spent the next two days mapping areas of the Colville Ridge in preparation for dredging. Early Thursday morning, we were able to resume dredging of the Colville Ridge and seamounts west of the ridge. Recovering relatively fresh volcanic material has proved challenging, because most of the samples are volcanoclastic, made up of small fragments of often altered volcanic material. Nevertheless, we have recovered some relatively fresh lavas and some of the larger volcanic fragments in the clastic rocks are relatively fresh and can be used for age dating and geochemical analyses.

In addition to the geological studies, we are also sampling zooplankton with a plankton net. This week we carried out our fifth and most successful deployment of the plankton net. A huge variety of planktonic creatures and large numbers of our target group, swimming gastropods (snails) known as pteropods and heteropods, were recovered in the net. The latest catch included over 1700 swimming gastropod specimens of 27 species. We can now begin to explore the potential of using living heteropods in laboratory studies of changes in the ocean environment, something that has not yet been considered in the recent influx of ocean acidification research.

The weather for most of the week was gorgeous and the seas very calm, like the surface of a lake. The nice weather has been accompanied by many beautiful sunrises and sunsets (see photos) and provided the opportunity to test the life boats.

All on board are doing well: Working hard and enjoying the nice weather and calm seas.

Kaj Hoernle and the SO255 scientific crew



The beginning of another day on board. Sunrise from the cafeteria during breakfast. (Kaj Hoernle)

Taking advantage of the calm seas to test the lifeboats. (Kaj Hoernle)



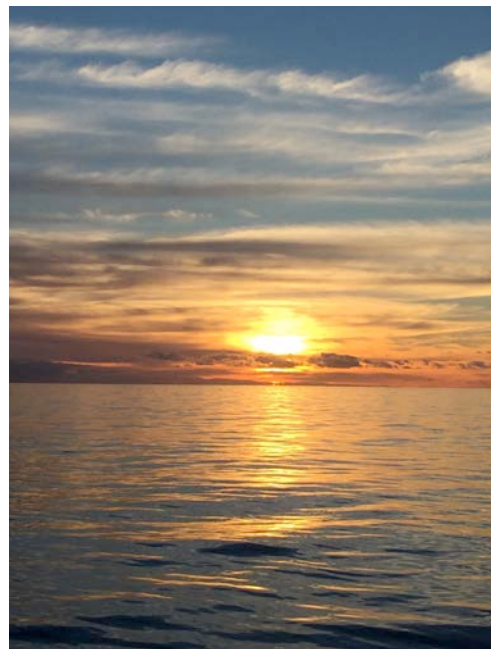
Fishing for zooplankton: Deployment of the plankton net. (Debbie Wall-Palmer)



Sometimes it only takes one rock to fill the dredge. (Kaj Hoernle)



Heteropod *Atlanta echinogyra* (zooplankton). Since these small mm-sized creatures have eyes and try to avoid being caught in the net, the net is towed at ~4 km an hour so they cannot escape. (Debbie Wall-Palmer)



The end of another successful day on board. (Kaj Hoernle)