



CIBJO

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SPECIAL REPORT  
CORAL COMMISSION



## Species conservation and climate change dominant themes in precious coral industry

By Vincenzo Liverino, President

CIBJO Coral Commission

Since its establishment in 2014, the Coral Commission has set for itself the task of correcting what many considered to be a general lack of knowledge about precious coral in the jewellery trade. One of its key responsibilities has been promoting the use

of proper nomenclature to distinguish the eight species currently accepted as precious corals, from the more than 7,300 species of cnidarians that collectively are known as corals.

Other issues that are being tackled include disclosure policies for treatments, raising awareness of sustainability, mapping and reporting on the precious coral production



*Vincenzo Liverino, President of the CIBJO Coral Commission.*

areas and fishing regulations, among other relevant topics. These discussions resulted in the introduction of the CIBJO Coral Book in 2016

The Coral Blue Book is currently being revised, in line with the organisation's policy that an updated edition of each Blue Book should be released every three years.

This year, a significant number of amendments to the document will be proposed at the CIBJO Congress. A major proportion of them relate to a sizeable extension of the Terms and Definitions section, a more detailed definition of the common coral varieties, a table with currently accepted trade names, and a discussion on the oiling of carvings during the lapidary process.

In addition to the Blue Book, the Coral Commission has produced an information sheet for educators, drafted an online course about precious coral, and contributed to the production of CIBJO's Do's and Don'ts Guide. We also initiated contacts with organisations that we judged were providing inaccurate

*Vincenzo Liverino (centre), chairing the CIBJO Coral Commission session at the 2018 CIBJO Congress in Bogotá, Colombia. He is flanked by Kenneth Scarratt (left), President of the CIBJO Pearl Commission and Vice President of the CIBJO Coral Commission, and Rui Galopim De Carvalho, Vice President of the CIBJO Coral Commission.*



information about coral, suggesting amendments in line with trade standards.

Many of the various materials produced have served as a reference for publications in trade journals and the general media, including *Rapaport Magazine*, *InColor*, *Gem-A's Gems & Jewellery*, *Le Figaro* and *The Financial Times*. Coral Commission officials have also been invited to participate in numerous international conferences, workshops and seminars, notably the Gem-A Conference, the ICA Congress, VicenzaOro GemTalks and Seminars and the FEEG Symposium. The work of CIBJO has been recognised and is serving the industry at various levels.

A more recent initiative being carried out with the Coral Commission's support involves DANAT, Bahrain Institute for Pearls and Gemstones, which involves building a special aquarium that also will serve DANAT's research on local pearl oysters.

### **PRECIOUS CORAL UNDER SPOTLIGHT AT CITES CoP18**

The Conference of Parties (CoP) of CITES, the Convention on International Trade in Endangered Species, also known as The Washington Convention, took place in August in Geneva, Switzerland, following the cancellation of the Sri Lanka meeting in May. Precious corals were discussed in the Animals Commission and a comprehensive report by the Food and Agriculture Organization (FAO) of the United Nations was presented. It covered the current situation of various coral species in the Mediterranean region and Asia.

The CITES classification of precious corals was unchanged, meaning that four species remain listed in Appendix III. These are Aka or Oxblood coral (*Corallium japonicum*), which lives in Japanese waters; Momo or Angel's Skin coral (*Pleurocorallium elatius*), which can be found off the coasts of





A Neapolitan Sciacca coral tiara, from the Liverino Museum Collection in Torre del Greco, Italy

Japan and Taiwan; Pure White or Shiro coral (*Pleurocorallium konojoi*), which lives in Vietnamese waters; and Midway coral (*Corallium secundum*), which lives mainly off the coast of the U.S. State of Hawaii and of which there has been no recorded commercial harvesting since at least 2001. The application to list these four species was made by China in 2009.

Appendix III includes species that are not endangered, but are placed on the list at the request of a specific country that has already internal regulations for its trade, and which then seeks the cooperation of other countries to help prevent what it considers to be unsustainable or illegal exploitation. Its purpose is mainly to monitor and gather trading data.

For the export of species listed in Appendix-III, CITES authorities in the country of export need only to determine that the specimens were acquired legally.

The issue of accurate import-export statistics was a matter of concern during the Animals Commission session. The FAO report discussed the necessity of having precise data on the precious coral trade and production in order to study the resource, and to be able to propose resource management

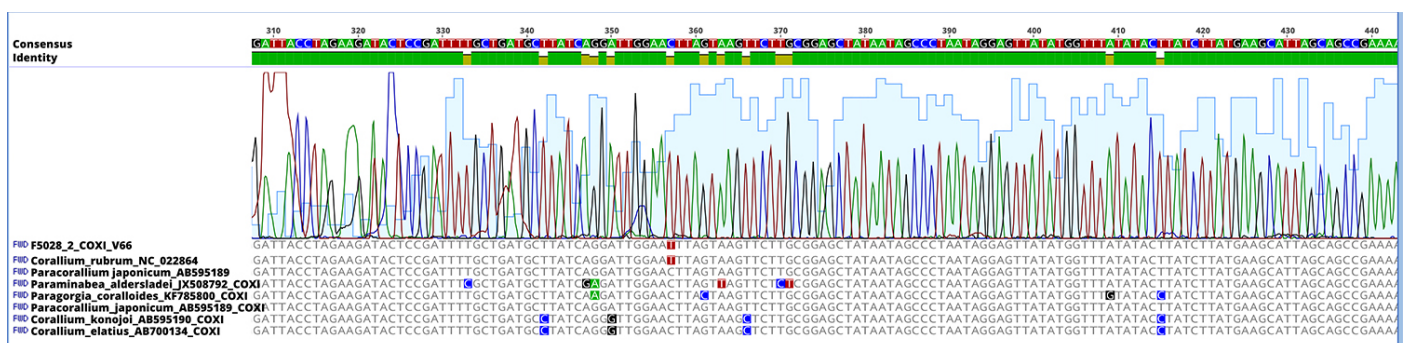
policies that will support the sustainability of the trade and biodiversity.

One of the issues raised echoed the discussion taking place in the diamond trade, where, only recently, harmonised customs codes for uncut laboratory-grown diamonds were issued by the World Customs Organisation. Until then, laboratory grown diamonds were grouped together with all other synthetic gemstones. A similar situation exists in the coral sector, where the existing harmonised customs codes do not differentiate between precious and non-precious varieties of coral.

**DNA FINGERPRINTING REPORTS**

During the session of the Coral Commission at the 2018 CIBJO Congress in Bogotá, Colombia, CIBJO announced an initiative involving the identification of precious coral species using new DNA sequencing technology in cooperation with the Federico II University in Naples, Italy, and in particular with the support of Professor Di Cosmo.

DANAT, Bahrain Institute for Pearls and Gemstones, and



An electropherogram, determining DNA sequence genotypes of different species of coral, conducted at Federico II University in Naples, Italy. Such plots are achieved using an automated DNA sequencer and are used for DNA fingerprinting.

IGI, Italian Gemmological Institute, joined the project in June and July respectively, with both introducing a specialised coral DNA Fingerprint Report (DFR). They are supported by sophisticated non-destructive and micro-destructive tests, where a very small amount of the sample is extracted, and a complex nucleotide sequence undertaken in order to reach a species determination. A series of tests are then performed to confirm and support the biological data, including Laser Ablation – Inductively Coupled Plasma – Mass Spectrometry (LA-ICP-MS), UV-Visible-NIR, infrared (FTIR), Raman and Photoluminescence (PL)/spectroscopy.

Species identification is particularly difficult with already fashioned coral materials, but DNA fingerprinting has been successfully achieved on such materials at the SSEF Swiss Gemmological Institute and elsewhere, and currently is the only known method of enabling the accurate determination of the species once the coral has been crafted and set in jewellery.

This allows members of trade to comply with current environmental legislation and international regulations, and also to meet conservationist concerns in the consumer markets.



*'Self Portrait,' carved from Mediterranean Coral (Carallium rubrum) by Jan Fabre. © Jan Fabre 2019*



*A fine Chinese carving in Momo coral (Pleurocorallium elatius), from the Liverino Museum Collection, Torre del Greco, Italy.*

### CARBON-14 DATING OF PRECIOUS CORALS

Radiocarbon dating has been used for decades in archaeology to gauge the age of carbon-bearing biogenic materials. Sometimes, the dating of gem materials may be relevant to support the work of jewellery historians in museums or in the antiques market.

The Swiss Gemmological Institute SSEF has recently announced its intention of providing radiocarbon dating services to the precious corals and pearl industries.

It is well acknowledged that carbon-14 dating of marine materials poses significant challenges and requires information on the probable location of the collection of

a sample. This is necessary in order to account for known variations in the water reservoir.

Dead *Corallium japonicum* materials harvested off the coast of Japan were found through carbon-14 dating to be 5,000 years old and sedimentary *Corallium rubrum* discovered in Sciacca, Sicily, was judged to be between several centuries and 9,000 years of age.

SSEF recently studied a Sciacca coral strand and found that it was approximately four centuries old.

### THE CIBJO GREENHOUSE GAS MEASUREMENT INITIATIVE

The coral sector is completely vested in the search for solutions to one of humanity's most important challenges, and that is climate change. In this respect we fully support meeting UN Sustainable Development Goal 13, which calls for urgent action to combat climate change and its impacts, which is already disrupting national economies and affecting lives.

Coral reefs in particular are known to be susceptible to damage by climate change, which is a causative factor in ocean warming and the increased acidification of the water. This is already impacting biodiversity, and under current conditions will continue to do so in the future.

The scientific community overwhelmingly agrees that a main cause of climate change is greenhouse gases building up in the atmosphere. These absorb infrared radiation emitted from the ground below and reradiate it back to the Earth's surface, raising temperatures. Of the six greenhouse gases covered by the UNFCCC/Kyoto Protocol, four are carbon-based.

Through the efforts of its Marketing and Education Commission, CIBJO launched the Jewellery Industry Greenhouse Gas Measurement Initiative in 2014, and since then has promoted it at every congress, calling on members and their constituents to become carbon neutral.



## JEWELLERY INDUSTRY GREENHOUSE GAS MEASUREMENT INITIATIVE

The process of being audited to measure a business' carbon footprint is not as complicated as it seems, nor is it as expensive or time consuming. Going through the auditing process is already an important wake-up call, showing how energy expenditure, traveling, plastic use and waste impacts a company's carbon footprint, and helping identify what business practices may be changed to reduce the impact.

Upon verification of the carbon impact, the company is invited to pay a corresponding carbon tax, which essentially is an investment in an enterprise which offsets the greenhouse gases that it has produced. In this way it becomes carbon neutral.

Coral Commission President Vincenzo Liverino successfully went through the Jewellery Industry Greenhouse Gas Measurement Initiative with his company, with the intention of not only benefiting the environment but also to inspire others in the industry to follow the same path.

It is essential that industry recognize that carbon neutrality requires more than simply awareness, but actions as well. Carbon auditing is a first step and the CIBJO initiative in an important support mechanism.

Please consider very seriously joining this effort, for the sake of our future generations.

### COVER PHOTO

'Heart,' carved from Mediterranean Coral (*Corallium rubrum*) by Jan Fabre. From the Liverino Collection, Torre del Greco, Italy. It was the first time that coral was used as a primary medium in a contemporary piece by the renowned artist.

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