Tanzanite

Tanzanite	
	
Tanzanite gemstone, featuring an oval mixed cut	
General	
Category	Mineral Variety
Chemical formula	$(Ca_2Al_3(SiO_4)(Si_2O_7)O(OH)$
Identification	
Color	Purple to Blue
Crystal habit	Crystals flattened in an acicular manner, may be fibrously curved
Crystal system	Orthorhombic
Cleavage	Perfect {010} imperfect {100}
Fracture	Uneven to conchoidal
Mohs Scale hardness	6.5
Luster	Vitreous, pearly on cleavage surfaces
Refractive index	1.69-1.70
Optical Properties	biaxial positive
Birefringence	0.006-0.018
Pleochroism	Present, dichroism or trichroism depending on color.
Streak	White or colorless
Specific gravity	3.10-3.38

Tanzanite is the blue/purple variety of the mineral zoisite discovered in the Meralani Hills of northern Tanzania in 1967, near the city of Arusha. It is a popular and valuable gemstone when cut, although its durability is somewhat lacking; its tendency to break sometimes precludes appropriate use as a ring stone. Tanzanite is noted for its remarkably strong trichroism, appearing alternately sapphire blue, violet, and sage-green depending on crystal orientation. However most tanzanite is subjected to artificial heat treatment to improve its colour, and this significantly subdues its trichroism.

Contents

1.Commercial history

Introduction

Manuel de Souza, a Goan tailor and part-time gold prospector living in Arusha (Tanzania), found transparent fragments of vivid blue and blue-purple gem crystals on a ridge near Mererani, some 40 km southeast of Arusha. He decided that the mineral was olivine (peridot) but quickly realized that it was not, so he took to calling it "dumortierite", a blue non-gem mineral. Shortly thereafter, de Souza showed the stones to John Saul, a Nairobi-based consulting geologist and gemstone wholesaler who was then mining aquamarine in the region around Mount Kenya. Saul, with a Ph.D. from M.I.T., who later discovered the famous ruby deposits in the Tsavo area of Kenya, eliminated dumortierite and cordierite as possible I.D.s and sent samples to his father, Hyman Saul, vice president at Saks Fifth Avenue in New York. Hyman Saul brought the samples across the street to the Gemological Institute of America who correctly identified the new gem as a variety of the mineral zoisite. Correct identification was also made by mineralogists at Harvard, the British Museum and Heidelberg University, but the very first person to get the identification right was Ian McCloud, a Tanzanian government geologist based in Dodoma. Hyman Saul got two of the samples facetted and showed them to Henry Platt of Tiffany and Company, who immediately appreciated the beauty of the gem and subsequently coined the name "tanzanite", an obvious allusion to its country of origin. These two stones were subsequently mounted in rings. The allusion to the country was thought necessary in order to make the stone marketable to the public: the name has since stuck as a varietal designation.

False media claims damage the Tanzanite industry

On November 16, 2001, in the wake of the September 11, 2001 attacks, a front-page *Wall Street Journal* (WSJ) article by Daniel Pearl and Robert Block alleged that significant al-Qaeda funding was generated through illicit trade in tanzanite. "According to miners and local residents, Muslim extremists loyal to bin Laden buy stones from miners and middlemen, smuggling them out of Tanzania to free-trade havens such as Dubai and Hong Kong." The Tanzanian Mineral Dealers Association insisted there was no connection between al-Qaeda and their industry, while a Tanzanian government investigator insisted there was a connection. The article suggested that as much as 90% of tanzinite was thought to be smuggled out of the country. The smuggling problem charges were not new; a 1990 *New York Times* article reported that "Economists say much of the country's bountiful natural wealth – gold, rubies, tanzanite – is smuggled across the border into Kenya with the collusion of Government officials...."

While the story was quickly denounced by many tanzanite dealers as "illogical" and "laughable," information from the story was widely reported in other media sources. Michael Nunn, president of South African gem company and leading tanzanite mining firm Afgem, dismissed WSJ's article as an unsubstantiated "sleazy report."

Both some previous and later U.S. investigations showed that Wadih El-Hage, thought to be a senior aide to Osama bin Laden, moved to Kenya in 1994, where he founded a business called Tanzanite King and helped to run Kenya's al-Qaeda cell. The cell was activated in 1997, and on August 7, 1998 blew up the American Embassy in Nairobi, killing more than 200 people.

Following the WSJ's story of al-Qaeda's involvement with tanzanite, Tiffany & Co., Zale Corp., QVC, and Walmart which combined make up the world's largest market for tanzanite, halted tanzanite sales. Tanzanian officials reported a 70% decline in industry and miner earnings.[3] In February 2002, at a tanzanite dealer summit, a U.S. State Department said the U.S. had no evidence of current al-Qaeda funding through tanzanite sales, and Tanzanian officials announced police sweeps to remove illegal miners, and a plan to track gems from miners to traders to retailers. As confidence was restored, Zale announced a resumption of tanzanite sales in May, 2002, and was gradually followed by other marketers.

Recent developments

In mid-2002, efforts were begun to include tanzinite as an approved birthstone by U.S. gem associations. By October 2002 the AGTA.org made the first change in more than 90 years to the "modern birthstone chart" and crowned Tanzanite as the December birthstone. Most organizations do not recognize tanzanite as a December birthstone, however, and the AGTA's move to make it a December birthstone has generally been viewed as a marketing ploy.

Natural tanzanite cut and set into a bracelet.

In June 2003, the Tanzanian government introduced legislation banning the export of unprocessed tanzanite to India (like many gemstones, most tanzanite is cut in Jaipur). The ban has been rationalized as an attempt to spur development of local processing facilities, thereby boosting the economy and recouping profits. This ban was phased in over the next two years, until which time only stones over 0.5 grams were affected.

This is a serious situation for the city of Jaipur, as one-third of its annual gem exports are of tanzanite. Some members of the industry fear the ban will set a precedent, leading Tanzania to ban the export of *all* raw gem material, including the country's production of tsavorite, diamond and ruby.

In April 2005, a company called TanzaniteOne Ltd. publicly announced that they had taken control of the portion of the tanzanite deposit known as "C-Block" (the main deposit is divided into 5 blocks). Over the next year, this company established a De Beers-like control over the tanzanite market, restricting distribution to a handful of processors referred to as "SightHolders" The company is also increasing its control of all newly mined tanzanite by purchasing a large portion of the production coming from the operations of the independent miners working in the area. This is the first time that a colored gemstone has been controlled in this way. Prices for rough on the open market have increased steadily for the last several years as the company has solidified its control of the market. In August 2005, the largest tanzanite crystal was found in the C-Block mine. The crystal weighs 16,839 carats (3.4 kg) and measures 22 cm by 8 cm by 7 cm.

The mining of tanzanite nets the Tanzanian government approximately USD $20 million annually, the finished gems later being sold mostly on the US market for sales totaling approximately USD $500 million annually.

A rough sample of tanzanite.

2.Prices

The prices of Tanzanite have historically been volatile but TanzaniteOne's SightHolder system is keeping prices firm. Wholesale prices for top quality tanzanite gems were just $225 per carat in the year 2000 [1], to $3500 to $5000 per carat in late 2007.

3.Grading

There is as yet no universally accepted method of grading for tanzanite. TanzaniteOne has introduced plans to remedy "price distortion". The company, formerly called Afgem, has established the nonprofit Tanzanite Foundation, which has developed a quality-grading system that justifies a wider range of prices.

The new system's color-grading scales divide tanzanite colors into two different hues, blue violet and violet blue.

Each has 10 saturation levels - 6 :

1 - Vivid Exceptional. 2 - Vivid 1. 3 - Vivid 2. 4 - Intense 1. 5 - Intense 2. 6 - Fancy 1. 7 - Fancy 2. 8 - Light 1. 9 - Light 2. 10 - Pale.

This grading system is not as yet accepted throughout the trade. The world's most prestigious laboratory, the GIA, still uses a different system. The world's most recognised laboratories have yet to reach consensus on terms used for grading tanzanite although the top gradings on most systems will be similar.

4.Simulants

A lab-created simulant of tanzanite is called *tanzanique*. It closely mimics the color of natural tanzanite however it does not display the same pleochroism. Tanzanite is the mineral zoisite, while tanzanique is fosterite. A periwinkle blue/lavender colored cubic zirconia has also recently come into general use as a tanzanite simulant.

----------**END**----------