

Grossular Garnet - A Market Update

鈣鋁石榴石 - 市場概況

Joshua Saltzman A.G., Nomad's Co.

作者詳述綠色鈣鋁石榴石 — 沙弗來石和薄荷綠鈣鋁石榴石的特性，包括其歷史、不同的產地來源、顏色成因、切工等注意事項，並提及美國和歐亞等地的市場需求。

In 1967, British geologist Campbell Bridges discovered green grossular garnet in Northeastern Tanzania. This discovery of what would become the first commercial deposits of the material would change the world market. At the time, mining in Tanzania was difficult and Bridges moved into Kenya in search of this mysterious green stone following the geology of the rock bands across the border. In 1971 he found another deposit of the rich green stone in Kenya and in 1974 Tiffany launched a large campaign to publicize the newly discovered stone, which had been jointly named by Bridges and Henry Platt, then president of Tiffany, as Tsavorite¹, after Kenya's Tsavo National Park. Tsavorite quickly became popular in the United States and in Europe, where it was called Tsavolite, using the Greek suffix for stone. In addition to Tanzania and Kenya, green grossular garnet deposits have also been found in Pakistan (in the Swat valley) and in Madagascar (at Itrafo and Gogogogo)².

This beautiful, vivid green grossular garnet very quickly became a strong rival for emerald. Although both emerald and tsavorite both come in a wide range of green colours, and are approximately the same hardness on the Mohs' scale, Tsavorite are much more durable gemstones and, with a dispersion nearly double that of emerald, tsavorite can also display high brilliance when not overly saturated in colour.

The rarity of the stone was both a blessing and a curse. In order for a stone to become popular on the consumer market, there needs to be enough material in a range of sizes to supply the demand for the gemstone. With Tsavorite this is not necessarily the case. The gem material is extremely rare and stones larger than a few carats are hard to find, with fine pieces over 10 carats quite rare, and pieces over 20 carats exceptionally rare. Although most of the material on the market was just a few carats in size, its inherent beauty

and a successful marketing campaign by Tiffany's after its discovery, ensured that its popularity would continue to grow. Additionally, unlike many other gemstones, green grossular garnet is not currently treated in order to increase its beauty or durability.



Over the past few years, a lighter version of tsavorite known as mint grossular garnet, due to its sweet minty green colour, has become extremely popular on the world market. Its lighter colour saturation allows the brilliance of the grossular garnet to shine, resulting in dazzling bright stones with good dispersion. The most desirable gems are bright green with a bluish component to the green colouration. Stones showing a yellow component are less desirable.



Most of the material from Tanzania and Kenya comes in the form of well formed crystals mainly from primary deposits, providing both quality specimens as well as faceting rough, although some of the Merelani mint grossular material is alluvial. As garnet is a singly refractive gemstone, it does not display dichroism and the colour remains the same regardless of the axis viewed. Thus cutters can more easily maximize the yield from a piece of rough as they are not bound by having to align the stone along a specific axis in order to ensure that the top colour is presented

when viewing the gem face up, as is required with gems like tourmaline or tanzanite. The hardness of the material and a lack of cleavage allow the gem to be polished to a very high lustre, resulting in crisp bright stones. Tsavorite rough can have small cracks which are often left in the finished pieces and this material can also develop small cracks when faceting, which can pose problems for cutters. The Merelani mint material does not generally suffer from the same problem. (Maxsym Stepanov, personal communication, 2016)

The mint grossular garnets are generally found as a by-product of tanzanite mining in the Merelani region, and tend to come to the market in small spurts of stones as pockets of the stone are discovered. In the second half of 2015, there was an increase in production, which has been referred to as “the green burst”, from a pocket of high quality pieces of large, clean, top colour rough, which produced cut stones in a range of sizes over 30 carats.

The deep, vivid green colors in Tsavorite are caused by the same colouring agents as emerald; chrome and vanadium and additionally manganese. The unique material known as Merelani mint grossular garnet contains lower concentrations of these and, in addition, contains virtually no iron, resulting in the crisp minty colour. In Japan, the Merelani mint grossular garnets are also known as “fluorescent garnet”, due to the bright orange fluorescence caused by vanadium and manganese³. The darker green tsavorite tends to fluoresce a weak reddish colour.



The market for green grossular garnet remains strong worldwide. Tsavorite remains a staple of jewellers and collectors in both the North American and European markets, and larger pieces move quickly due to the rarity of the material. Over the past few years the author has seen an increase in demand for tsavorite in the Asian market as well, particularly in China as the market has matured and looked for alternatives to jade and emerald. In the past two to three year, the popularity of the

Merelani mint grossular garnet has also increased dramatically. As more high quality material has come into the market, the gem has garnered more attention, and its use by high fashion jewellery brands in Europe and America has helped to fuel demand.

As Max Bauer wrote in 1904 in his book *Precious Stones* “The minerals which combine the highest degrees of beauty, hardness, durability, and rarity...are by common consent placed in the foremost rank of gems”⁴. The green grossular garnet has easily displayed these characteristics and this has made the material extremely popular with connoisseurs, collectors, and jewellery lovers in all the major markets, making both tsavorite and Merelani mint grossular garnet staples in any gemstone collection.



References & Footnotes

1. Bridges C.R. (1974): Green grossular garnets (tsavorite) in East Africa. *Gems & Gemology*, Vol. 14, No. 10, pp. 290–295
2. Adamo, I., Diella, V. & Pezzotta, F. (2012): Tsavorite and other Grossulars from Itrafo, Madagascar. *Gems & Gemology*, Vol 48, No 3, pp 178–187
3. Masaki Furuya (2013), Spectroscopic characteristics of “Merelani mint” grossular garnet. *ICGL Newsletter*. Spring. 2013. pp 3
4. Max Bauer, *Precious Stones*. 1968 pp 2