



Images courtesy of Terry Coldham

CAT'S EYES AND STARS

Cat's eye and star gems are prime examples of how inclusions can be an asset in coloured gems rather than a liability, explains the GAA's **KATHERINE KOVACS**.

When gemmologists refer to cat's eye stones, they say they display chatoyancy. The name cat's eye is an apt description really: properly cut, the gem displays a thin band running along the length of the stone that reflects light back to the viewer. To display the effect, the gem must be cut as a cabochon and include numerous long, thin inclusions that run parallel to the base of the stone.

Star stones – or, gemmologically speaking, stones that display asterism – are similar to cat's eye stones in that they rely on numerous inclusions being orientated so that a star pattern is reflected back to the viewer. These stones too must be cut as cabochons in order to properly display the effect.

Facetting either a cat's eye or star stone would result in light being reflected incorrectly off the inclusions and the effects of each would be lost.

Historically the term cat's eye referred only to the golden

chrysoberyl cat's eye although chatoyancy is found in numerous other gems. These include quartz, tourmaline, alexandrite (itself part of the chrysoberyl group), beryls (not to be confused with chrysoberyls, these include emerald and yellow beryl), opal, and garnet amongst others. Arguably, however, the most valuable of the cat's eye stones are chrysoberyls, which range in colour from a very light yellow through to the more desirable golden yellow and honey colours. The most valuable cat's eye chrysoberyls are those that display the so-called "milk and honey" effect – light on one side of the eye and dark on the other – with such stones potentially commanding prices in the thousands per carat.

Asterism is also found in numerous gem families, including many of those listed above, but is perhaps most commonly encountered in the market in the corundum group. Due to the physical characteristics of the

corundum crystal, the inclusions may align in such a way as to produce a six-rayed star. Think of three sets of "cat's eyes" in the one stone orientated at 60 degrees to one another. Interestingly, stars are often seen in sapphire and ruby however cat's eye stones are rare. Other gems, such as garnet may display a four-rayed stars.

Cut is paramount in order to produce a good cat's eye or star stone. In an ideal world, these stones would be cut with little or no excess material below the girdle, although this is rarely the case as the cutter tries to preserve weight to make extra dollars. For the jeweller, they must make adequate compensation for the heavy bottom so that the stone doesn't roll in the setting.

In many cases, the eye or the star is not aligned correctly when cutting and sits off centre, requiring re-cutting. Stones where the dome of the cabochon is too flat will diffuse light and the eye, or star, will only be visible looking at

it from directly above. In the case of cat's eyes, it is best if the eye runs along the length of the stone rather than across the width, but often cutters opt for the latter as it produces a stone with greater weight and therefore greater value.

The best and rarest examples of both star and cat's eye stones are those that display a strong body colour as the presence of the many lighter-coloured inclusions – necessary to produce the phenomenon – tends to weaken the body colour. Gemmological testing is desirable for stones that display a strong star or cat's eye, as well as strong colour, as there are many synthetic and treated stones on the market.

To view and sell a star or cat's eye stone, one requires a direct incandescent light source. Fluorescent light diffuses the light being reflected off the inclusions and the effect is lost – this is something that business owners should ask their staff to explain to customers during a sale ♦