PIGEON BLOOD. A POETIC DESCRIPTION TURNING TO A BRAND ORIENTED QUALITY GRADE.

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Not long ago they did not like the name pigeon blood.

The combination of ruby and blood is lost in the mists of time. References are found in the Chinese reports and in

The Crimson Flame. An extrordinary ruby and diamond ring

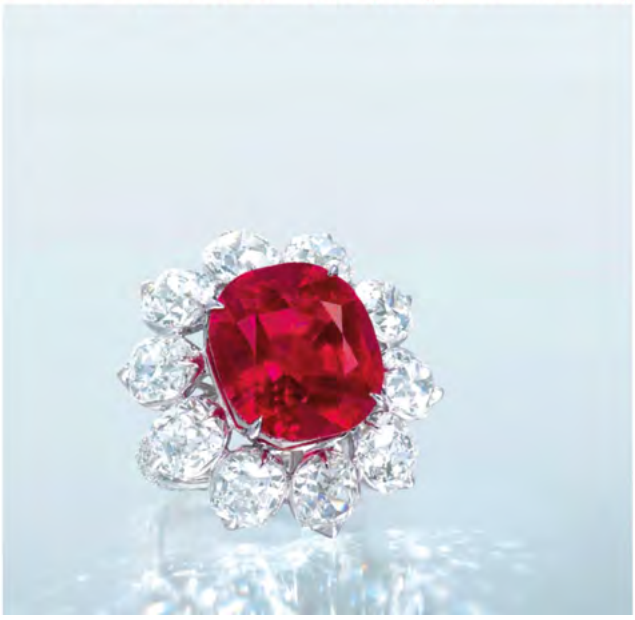


Fig. 1 An extraordinary 15,04 pigeon blood Ruby solid by Christie's at more than US$ 15 millions.

Arabic (the great medieval gemologist At-Tifasci and Al Afghani dealt with the subject). But tallying ruby to pigeons' blood has more controversial origins. In all likelihood the vividness of the attribute (in Burmese ko-twe) stems more from a tint of the pigeon's eye than from its blood. The expression was then taken up again when in the second half of the nineteenth century the precious material came into the hands of the incredulous British officers. Yet, with absolute certainty, the dispute over the relevancy of such definition rages from the month of October 2015. The scope of this dispute is a global one; yet it is consumed entirely in Switzerland, a small country as for extension, however decisive as for gemological authority. Let's take a step back. In the last century, the historical process that gradually led to the currently used gemological classification standards is characterized, moreover, by the progressive tendency to avoid the descriptive nomenclature, using instead references to quantitative parameters.

Take for example the color of diamonds. To detect the deviation from white, grades expressed in alphabetical letters have been adopted. This system must have seemed absolutely more objective than the one linked to mining places. Similarly, parameters based on tint, tone and saturation have been adopted to regulate the color classification of other gemstones. As far as ruby is concerned, the best combination between tone, body color and high saturation is generally indicated as vivid red. This is the color grade connoting the most coveted gems and this is the context in which ruby lovers have placed the pigeon blood.

Yet for decades the definition pigeon blood has not been used in the reports, being, to the eyes of the specialists, a sort of subjective description, a metaphorical connotation, connected more to literature or to the category of magic rather than to the strict taxonomic criteria. This is the opinion of the gemologist J. Nelson who ironically explained in 1985 that he turned to the London Zoo with the aim of determining the color of pigeons' blood by spectrophotometry: "The Burmese bird can at last be safely removed from the realms of gemmology and consigned back to ornithology".

Barbara Voltaire, Administrator of the reputable "GemologyOnline" website, coherently posted in 2007 that the term pigeon's blood is "archaic and non-quantifiable. It's analogous to defending the usage of River or Top Wesselton when describing diamond color. Certainly you could define them with comparable accepted terminology, but that's when the novelty would end".

This lasting reluctance of gemologists to take a metaphorical and evocative nomenclature might be explained by the particular care they show to be acknowledged as scientists

GRS' Definition of Pigeon's Blood

Pigeon's blood color is a vivid red color (high intensity and low tone, e.g. no brown and orange overtones) of a certain group of natural rubies. Rubies are exhibit medium to strong fluorescence if exposed to UV (365nm) light (Report samples).

Chemically the following compositions are found in GRS-type "pigeon's blood" rubies:

- High chromium (Cr) of approx. 0.3 to 0.5 wt-% (or higher) none, very low to medium iron (Fe), while the ratio of Cr/Fe is greater than 1 *(individual face-up color and fluorescence corrections are also applied).*

- Color is graded in day light using master sets as "vivid red" and the color descriptive term GRS-type "pigeon's blood" is added.

- The pigeon's blood color grade at GRS is applied independently of the origin and the rubies can either be heat-treated or unheated.

The pigeon's blood label is NOT granted for:

- beryllium-treated
- lead-glass-treated (Hybrid rubies)
- surface diffusion treated and
- synthetic rubies as well as stones with residues from heating e.g. H(b), H(c), H(d).

Fig. 2 GRS criteria to define a ruby Pigeon blood

Fig. 3 An "african" Pigeon blood.

belonging to the branch of mineralogy. For decades it seemed that the gemologist's figure could be redeemed only by placing it under the protective wings of a constituted and well recognized experimental science. In absence of indisputable mineralogical procedures, the long journey started by Plinius and lasted up to the beginnings of the eighteenth century, was felt as the cause of the stagnation of the reasoning speech (logos) about gems in a puddle of methodological insecurity.

It is then in the middle of last century that gemology demands freedom of getting rid of that long lasting historical phase marked by the use of simple descriptive connotations. In fact, while resorting to metaphors, this habit had resulted in fruitless approaches to the cause of establishing measurement procedures in Mineralogy. A methodology based on arbitrary impressions, like referring to mining areas as quality assurance as well as evoking fantastic attributes, seemed to be deterministic and more appropriate to the sphere of magic.

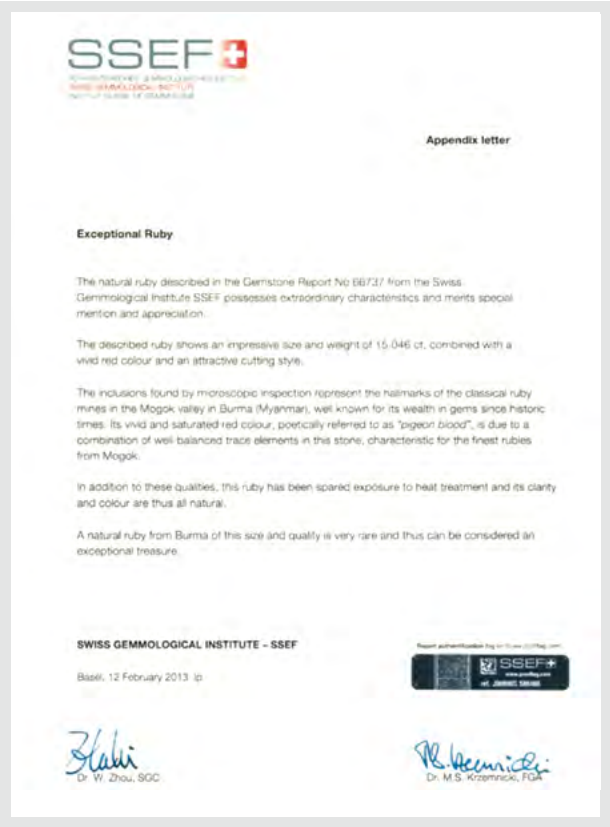
Instead, it was necessary to entirely recover the authoritativeness of the mineralogical analysis, investigating the properties of crystals in a more and more sophisticated and comprehensive way.

In order to introduce the new parameters of quantitative measurement made available by the mineralogical techniques, gemology, to some extent, was re-built, at the expense of inevitably summary descriptions not relevant to well defined scales. Ultimately, outside an objective measurement environment, one might as well still remain conceptually blocked at Plinio's time.

On the contrary, the modern gemology willingly and definitively gained independence by breaking ties and abandoning the use of stories and tales, the long lasting approach initiated by the great Latin naturalist. Even R. Hughes, renowned for his deep knowledge of corundum as well as for his vision of a gemology open to emotional aspects and respectful of places and cultures, wrote in 2001: " Pigeon's blood was the term used to describe the finest Mogok stones, but has little meaning today, as so few people have seen this bird's blood"

Once standards are set why not talking again? GRS retrieves the hematic reference

So no more pigeon blood but only vivid red? To some extent the attribute is confined to the dustbin, not being entitled to be taken into consideration in the main gemstone reports. But in 1996 GRS retrieves the term, using it in June 1998 for an octagonal ruby analyzed for Sotheby's. Dr. Adolf Peretti, CEO of GRS registers the Pigeon Blood trademark describing its criteria for classification (fig. 2). In Peretti's definition pigeon's blood grade is applicable to a



SSEF

Appendix letter

Exceptional Ruby

The natural ruby described in the Gemstone Report No 68737 from the Swiss Gemmological Institute SSEF possesses extraordinary characteristics and merits special mention and appreciation.

The described ruby shows an impressive size and weight of 15.046 ct, combined with a vivid red colour and an attractive cutting style.

The inclusions found by microscopic inspection represent the hallmarks of the classical ruby mines in the Mogok valley in Burma (Myanmar), well known for its wealth in gems since historic times. Its vivid and saturated red colour, poetically referred to as "pigeon blood", is due to a combination of well balanced trace elements in this stone, characteristic for the finest rubies from Mogok.

In addition to these qualities, this ruby has been spared exposure to heat treatment and its clarity and colour are thus all natural.

A natural ruby from Burma of this size and quality is very rare and thus can be considered an exceptional treasure.

SWISS GEMMOLOGICAL INSTITUTE - SSEF

Basel, 12 February 2013

Dr. W. Zhou, SGC

Dr. M.S. Krzemnicki, FGA

Fig 4 Appendix of a SSEF report issued in February 2013. The Pigeon Blood attribute is still shown in brackets and defined as "poetic"

certain group of natural rubies showing medium to high fluorescence, a vivid red color (high intensity and low tone, e.g. no brown and orange overtones). Chrome and iron (with presence of chrome always higher than iron in a ratio at least 2:1) have been identified as the agents producing that specific chromatic combination the pigeon blood originates from. Furthermore, according to Dr. Peretti, the definition is pertinent to all rubies no matter where they are mined from, if their features comply with the above mentioned parameters. Pigeon Blood can be a legitimate standing for heated rubies as well, at the condition that they received no diffusion treatment and no beryllium or fillers' addition.

Dr. Peretti himself reconstructs the investigation path which led him to reintroducing the term; he released a document (www.pigeonsblood.com) by which he points out that the scientific parameters in use are sufficient to guarantee an actual foundation of the terminology. Therefore the pigeon blood attribute does not refer as strictly as before to what Dr. Peretti depicts very well as romantizing literature, a sphere more properly belonging somehow to the strand of magic. Indeed GRS did nothing but technically restoring dignity, as a measurement standard, to those poetic elements previously banned by the more orthodox tendency of the scientific investigation. But apparently fairy tales remnants continue to float in the invisible underground stream flowing parallel to the chemical and physical analysis.

From now on, pigeon blood is again a fully legitimate and successful term in gemology as a result of a clear business need. Sotheby's, along with the big Auction companies, appreciate the reintroduced attribute because it is a part of the collective imagination capable to communicate the value and the preciousness to the general public. In short, market uses to send messages affecting the behavior of the gemological community. In the last fifteen years the hematic reference, after being reintroduced by GRS with a lot of master and protocol, is emerging timidly in reports of other major institutes. Indeed, but how?

As an example we take a recent case, occurred before the wider reintroduction of the pigeon blood grade. On May the 12th 2015, SSEF and Gübelin produced the gemological documents to accompany the sale of a gorgeous 15,046 carat ruby ring mined in the Mogok Valley mounted with two shield cut diamonds weighing respectively 2,47 and 2,70 carats (sold at CHF 28.250.000). A passage in the description contained in the report n. 78414 from SSEF is quite indicative. It says : "its vivid and saturated red color, poetically referred to as 'pigeon blood' is due to a combination of well-balanced trace elements in this stone, characteristic for the finest rubies from Mogok". When resorting to quotation marks and when underlining the term pigeon blood, the document betrays some kind of carefulness, almost an embarrassment as the attribute is mentioned. This is because it is necessary to balance its strong evocative power with a statement reaffirming that it is not to be regarded as a truly quantitative or qualitative connotation. These are not measurable data, and as such, are subjective or poetic, belonging essentially to the literary domain of magic. The red traffic light signal still bans from the gemological labs the pigeon blood readdressing it to the Zoo. The harsh statement of J. Nelson is still relevant.

Why hold back if the carousel is funny?

It is not about few cases. With the exception of GRS, all the most internationally reputable laboratories for decades have been scientifically reluctant to deal with a pigeon blood attribute devoid of objective connotations. Yet the gemstone market could not resist the romantic voice of the sirens singing the enchanting poem of pigeon blood, even if reported only in quotes and with discretion. Buyers of costly rubies ask the market to be gratified with something more than vivid red. Product and Price are at the top, now Promotion (the third P of marketing) is required to match the uniqueness of these wonderful rubies. And how can a gem be firstly promoted if not by the unchallengeable tool of a gemological statement? At this point the market trend demands that pigeon blood appears regularly as

a measurement grade along with other qualitative and quantitative data, all useful to stress for promotional purposes the features of rarity and preciousness of rubies.

The watershed year is 2015. Finally the major players involved in gemological reports are convinced of the opportunity to characterize the pigeon blood color. Time has come for SSEF and Gübelin to release a joint communication on November the 4th in which they announce the setting of a master harmonizing their parameters to define pigeon blood as a color grade. The characteristics for identification are not different in many ways from the ones already established by GRS: "Pigeon blood red is best described as a red colour, with no apparent colour modifiers (such as blue or brown). A minute purplish tint is acceptable. The body colour of pigeon blood red rubies is complemented by a strong fluorescence when exposed to ultraviolet light. This fluorescence is caused by high chromium content combined with low iron content, and results in the distinct 'inner glow' coveted by ruby connoisseurs".

In the absence of an internationally and agreed upon standard it would be recommendable to compare the color master used by GRS with the one used by SSEF and Gübelin. Additionally it remains to discuss to which extent the color of corundum is affected by more complex phenomena, other than the ratio of Cr and Fe or the action of fluorescence. According to Richard Hughes it seems that trapped hole color centers play an important role in the determination of the pigeon blood color as well as the path length determined by the size of the stone.

However, if we look at the parameters determining the pigeon blood color grade, substantial differences can be easily found. In fact, according to SSEF and Gübelin this grade is applicable only to un-heated rubies and only to those from a specific geographic location, the Mogok Valley or the Namiya district. No wonder that such a rule is not shared at all by Dr. Peretti who objects to denying the pigeon blood grade to gemstones having the same chemical characteristics, the identical combination of tone and saturation, for the sole reasons that they are mined outside that restricted Burmese area or that they received a heat treatment with no fillers.

The merits of a technical disputation are not among the purposes of these considerations. A wider harmonization process is likely to start and it is too early to speculate as to which parameters will prevail. It is, however, worth noting here the whole context of the analysis affecting the assignment process of a new color grade for rubies. It seems that the sense of indeterminacy we have noticed in the specialists while handling a terminology they perceive as poetic, has moved from the literary/magic level to a true technical/scientific level. In their press release of Nov. the 4th, 2015 SSEF and Gübelin underline the ambiguity prevailing among the experts while using a term not regulated by any conventional gemological standard. Therefore, while establishing new parameters founded on measurable properties, after all they both resort to unshared and arbitrary criteria. To make it short, being a poetic attribute, until not long ago the pigeon blood color was not considered fit to gemology classification; and now it is as unsuitable as before because the scientific standards adopted by the major players, being divergent turn to be somehow subjective again.

Once again gemology as a discipline must question the crucial relationship between the investigator (gemologist) and what is being investigated (gemstones). This relationship does not equate the one existing between the scientist (mineralogist) and the specimen. The latter is based only on a neutral intention of cataloging and archiving, whereas the object of investigation for a gemologist is to modify its economic value as a result of the categories he himself sets up. There are people in charge of defining the necessary and sufficient conditions to assign to gemstones a name evoking a magic sphere and not a mere alphabetical or numerical reference. These specialists are empowered by gemology to determine how much this name can or cannot qualify successfully the market status of certain stones.

The divergent parameters to identify the pigeon blood color grade in the area of vivid red can legitimately be seen as calculations of value that the gemological labs are proposing to the market. Consequently, for instance, a ruby from Mozambique having what it takes to achieve the pigeon blood color grade (Cr/Fe ratio and chromatic features) for GRS, will be ruled out by others. Interestingly, the setting of uneven parameters produces the consolidation of the economic value of pigeon blood rubies, although this may not be homogeneous. No matter in this regard how the status is technically obtained because the issue is less concerned with grading and much more related to a branding strategy. Different gemological parameters, the way they are stated in the reports, have little power to penetrate the awareness of the unskilled consumers. The general public will be reached only by the fascinating attribute known as pigeon blood in the sense of an effective trade qualification of excellence. Out of all these details nothing will pass to the stores but just a brand.

Branding rubies.

The brand of a jewel is supposed to consist of the set of values the producing company is historically able to express and convey. But can a brand exist for a gemstone? This is a status not automatically assignable, except to a minor extent, either by virtue of its geographical origin or by the consistency of the

Fig. 5 Pigeon blood "african"

mining, manufacturing and distributing companies involved. These elements, having no strength to cross the supply chain, are not appealing or influencing consumers. To certify authoritatively and immediately the excellence of a brand the gemologist finds his way looking back at that parallel old path, providing him with the effectiveness of a smooth use of rediscovered poetic and literary descriptions.

Despite the attribute pigeon blood is missing even and shared parameters among the labs, its rescue clearly reveals how gemology approaches its development and which role assigns to itself. In the dichotomy, the objective character (quantitative classification) for a long time has prevailed over the descriptive character (poetic, literary, magic, subjective indications).

And this has come to equate the gemologist to the mineralogist, being both mere catalogers of species. Pigeon blood, anyway, expresses such a powerful appeal that it is worth a new parameter, different from vivid red. After retrieving a subjective connotation to make it objective, a quantitative color grade can be modified representing a mark of quality, that is a brand. This denotes a new phase that requires the gemologist to retrace his attitudes and the borders of his field of investigation. He might need again that background, inherited by the earlier descriptive phase that he looked bulky and awkward, being related to periods of ignorance or imperfect knowledge of the crystal chemical laws, the ages of superstition in the name of the magic. The old and rusty tools could be useful again at the condition that they are clothed in the respectability to be scientific and to depict efficaciously in the gemological reports the emotional factors, the stories, the poetry requested by the market, conditio sine qua non to strengthen the transmission of quality.

SUGGESTED RESEARCH MATERIAL

Hughes R.,Pigeon's blood: Chasing the elusive Burmese bird, http://www.ruby-sapphire.com/r-s-bk-burma3.htm.

Van Gelder G.J., Precious stones precious words, in "Oh ye gentlemen. Arabic studies on Science and literary culture, pp. 313-332, Brill, Leiden, 2007.

A.A.V.V., Progetto Euromin, La storia della mineralogia attraverso i musei di mineralogia europei, http://catmin.geo.uniroma1.it/area_book/book/Storia%20della%20mineralogia%20(Euromin%20Progetto%20Raphael).pdf

Hughes R.,Pigeon's blood. A pilgrimage to Mogok, the valley of rubies.http://www.ruby-sapphire.com/pigeons-blood-mogok.htm

SSEF, Gübelin (press release), Switzerland's SSEF and Gübelin Gem Lab agree to harmonise 'pigeon blood red' and 'royal blue' standardshttp://www.ssef.ch/fileadmin/Documents/PDF/Press_release_Pigeonblood_Royalblue_SSEF_GGL_final.pdf..

Peretti A., An ethical debate concerning 'pigeon's blood' rubies and 'royal blue' sapphires from diverse origins, http://gemresearch.ch/an-ethical-debate-concerning-pigeons-blood-and-royal-blue-for-corundum-from-diverse-origins/