

# ACCREDITED GEMOLOGISTS ASSOCIATION



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NEWSLETTER  
VOL. 4, NO. 1 JAN., 1979

## NEWS OF THE ORGANIZATION

The year 1978 was a crucial one for AGA. Membership essentially doubled in this period, and good publicity in the Jewelers Circular-Keystone created a tremendous amount of interest. Regional chapters started in Houston and Los Angeles, and the nucleus for additional chapters in the Bay Area (San Francisco-Oakland), New York and Miami now also exists.

There has been an unfortunate lack in communication in the latter part of 1978 for which the writer takes full responsibility. Part of the reason lies in an effort among AGA officers to restructure the organization in such a way that regional groups would become more important as a way to maintain communication among members. This effort resulted in the basic modification of AGA By-Laws achieved in early January. A copy of the revised By-Laws is being enclosed with this newsletter and sent to all AGA members. As partial compensation for the absence of a newsletter in Fall, 1978 this current issue is approximately double the normal size. It is anticipated that issues will be forthcoming on time throughout 1979.

One issue before the Executive Board for consideration at this time is a proposal to have AGA become a part of the National Heritage Foundation. This would merely allow NHF, which is basically an administrative organization, to file for non-profit status for AGA and allow AGA thereby to receive gifts on a charitable basis. The fee charged by NHF for this service is nominal and comes entirely from cash liquidation of assets donated to member organizations. There are nearly 400 accounts so administered by NHF currently, and nearly \$50 million in tax-free gifts coming each year to these accounts. In other words, this move would give AGA the option of receiving gifts of gems, books, instruments, etc. in much the way that museums can accept such gifts; the cost to AGA would be negligible and would be paid only as a small percentage of such gifts. Comments from the membership, or requests for additional information, would be welcomed at this time.

Membership cards have been requested by several people, and the Executive Board has authorized their production. Cards will be printed and distributed to all members. To minimize disruption of normal AGA business during this critical growth period, and because of the interruption in the flow of Newsletters, the Board has suggested that current officers remain at their posts until mid-1979. In April the Nominating Committee will work up a slate for presentation in July, and balloting for new officers will be held in October.

It is a major concern of AGA that members stay active in their field. This implies that all AGA meetings should be heavily slanted towards practical application of gemological knowledge, i.e., laboratory sessions looking at stones. The AGA started in Washington as just such a study group, and it is of the highest interest and importance to gemologists to maintain their currency in gemological developments. This can only be done through meetings on a local basis - a well organized regional AGA structure. Such a plan will be discussed in some detail later in this Newsletter.

As stated many times before, AGA is YOUR organization and your active participation is its reason for being. Please remember to write for the Newsletter and make your opinions and views known by sharing them with your colleagues in this most exciting field.

Joel E. Arem, Ph.D., FGA  
Editor

TO DEVELOP AND PROMOTE PROFESSIONAL STANDARDS  
IN THE PRACTICE OF GEMOLOGY

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Corresp. Secy.: Frank Calacino

Vice Pres: Sonja Schwartzman (1st)

Recording Secy: Dale Farringer

Vice Pres: Teresa Zook (2nd)

Treasurer: Tomiko Butler

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The following areas have been proposed as locations of AGA Chapters. Members who are interested in participating in meetings at a local level are strongly urged to contact the Newsletter Editor for information regarding the structure of local chapters and tentative chapter or regional chairmen.

Washington, D.C.

Houston

Los Angeles

San Francisco Bay Area

Miami New York

Chicago

Atlanta

Phoenix

St. Louis

Suggestions on additional areas are welcomed from the membership. All that is required for a chapter is sufficient local membership to have meetings.

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WORLD MONETARY MARKETS

The next few years are being heralded as boom years for the sale of fine quality gemstones. The reasons are not hard to find. The OPEC countries were expected to raise oil prices by 5-8% at the end of 1978. The actual increase turned out to be nearly 15%, dashing hopes for a reduction in the inflationary spiral. To make matters worse, political problems in Iran have now been essentially resolved with the departure of the Shah, and a takeover in the government by strongly left-wing (i.e. Marxist) factions. This creates the specter of the Middle East becoming a new Soviet Satellite area with major disruption of oil supplies to the West. The consequences for Israel are even more foreboding, and it is too early to tell what effect this will have on the Israeli diamond industry. President Carter has been borrowing heavily to buy up dollars abroad, a policy which looks doomed to failure and will probably cause even further weakening in dollar support in the months ahead. The prospects for 1979 are inflation continuing, perhaps to all-time high levels by the end of the year.

The above situation is clearly reflected in the metal markets. Gold has risen almost steadily through December, closed in London at about \$225/oz. in early January and has now pushed up to the \$235 level. Silver is getting up to the \$6.50/oz. level. Platinum is reaching all-time high prices well over \$350 per troy ounce. Whatever governments may say to their populations, it is clear that the world still regards gold as the ultimate money. In fact, the pieces of paper in your wallet or purse are not money at all - they are currency, and there is a big difference. Money is some commodity that has use or exchange value. Money is something that is used as a measure of value. Paper currency is a convenient representation of such valued commodities as gold and silver. Few currencies in the world today are backed by gold and silver. All the others are known as "fiat" (i.e., "authorized") money, which are "legal tender for all debts public and private" by mandate of the government. This does NOT mean that such paper has true value, since it is not really convertible back into specie. As long as such paper is accepted in trade, the currency is a working medium of exchange. In a hyperinflation, such as we may be entering in the next few years, the paper is printed to such a degree that its value decreases on a daily basis and eventually the currency itself is repudiated. Then the free market goes back to a barter system until a new and generally acceptable medium of exchange can be found. This has happened many times before and it could easily happen here in the U.S. in the next 5 years.

People in the U.S. are now joining their counterparts in other parts of the world who see the writing on the wall and are trading in their devalued paper for objects of true, i.e. "intrinsic" value, such as gold, silver and gemstones. The result is a major flow of capital into the gem market, and this is creating a market explosion.

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THE GEMSTONE EXPLOSION - JEA.

Try to imagine the total amount of money available in the U.S. for investment purposes. First, total up all the funds invested in stocks, bonds, government securities, etc. Then add in all the money in pension and profit sharing plans, including medical groups, unions, corporate pension plans, etc. Now add in the money in savings accounts and C.D.-s. This is not an all-inclusive list, but the quantity of money involved is already in the tens of billions of dollars, perhaps more. Now: imagine that the people who manage this money see the value of the money decreasing and decide to look for non-paper investments. Say that only 1% or less of this money flows into the gemstone market. Such a flow could easily double or triple in a single year the total amount spent in the U.S. on gems. The available supply of finer quality stones is already hard pressed to meet the existing demand, and such a flow of capital would drastically increase prices.

Now you see what is happening in the investment gemstone marketplace, and why dealers are predicting vastly higher prices in the next few years.

In an economy where dollars are stable, inflation is 5% or less and the world is not in turmoil, people are content with the high liquidity offered by banks and bonds. However, when the value of the dollar is dropping at 10-15% per year, savings accounts pay a "generous" 5-6%, bonds pay 9% and the stock market gyrates like a yo-yo, people start to get scared. Retired people see their life savings destroyed by government printing presses and there is nothing they can do. Smart investors start looking for high-yield commodities that offer security, high appreciation potential and portability of wealth. Gems have classically met these requirements. They are far more portable than precious metals, have the same history of appreciation and desirability, and are beautiful besides. We have seen tremendous increases in demand and prices for diamonds in 1975-1978. The years 1979-1982 are stacking up as the years for similar movements in the prices of colored stones.

The colored stone supply situation is unstable and variable. This adds to the excitement of the game!

The old President of Kenya, Jomo Kenyatta, died in late 1978. This threw a pall of uncertainty over SE Africa as a gem source, since Kenya is a major stone producer. As it turns out (happily), the new leader is very well accepted. He is a moderate who is not corrupt and is busily cleaning up the government, and optimism reigns and Kenya is stable for the time being. The Uмба valley is producing a great deal of material. There is some new spessartine garnet of superb orange color and large size being mined. The Japanese have been instructing Kenyan cutters on the fine points, and local cutting is now quite respectable. A 20 carat spessartine of the new material, flawless and of fine hue, was reported to cost \$40 per carat in Nairobi. Chrome tourmalines are available in quantity, with prices as low as \$60 per carat for small stones, though larger and finer gems are much more expensive. Rhodolite garnet is being produced in Tanzania in abundance. A new Tanzanite deposit is reported in the Uмба Valley, dark purplish in color but nice. Prices are lower than expected in Kenya for this material. The better known (main) tanzanite deposits are very rich and have tremendous reserves. However, they are not being worked currently due to political factors and border disputes. Larger stones may be overpriced at the current time. Kenya is also producing fine orange sapphires that some dealers call padparadschah. Tsavorite is up 25% at the source in 1978 and material is hard to get, though there is a good indication that the potential is enormous. Large stones are still rare but flawless gems over 10 carats have appeared on the market.

VERY CLEVER FAKES are being produced. An emerald crystal was noted by a dealer, apparently Zambian in origin. It had a trapiche core and a thick skin of fine color and transparency. The outside of the crystal was covered with matrix material, including mica, sand, etc. and looked perfectly natural and ideal for a museum. The "crystal" turned out to be plastic, covered with the "matrix" material to look natural. The clue was a test for dichroism, which was negative. Another fake being passed off in Africa is a Verneuil ruby boule, cut into a hexagonal shape and covered with "matrix" material. Such fakes are hard to detect unless you can see into them (growth lines). The large size and flawlessness are a good clue for suspicion. Buying gems in Africa is not all fun and games!!

THE GEMSTONE EXPLOSION (continued)

Tourmaline continues to rise in price and popularity. It may be the best colored stone performer of 1979-80. Material is available in quantity from Mozambique, though large and fine stones are getting expensive. Brazil green stones are very expensive and almost unavailable. The fine rubellite from the 1978 (April) discovery are just about gone, and larger, finer stones are wholesaling in Rio for as much as \$350 per carat. These stones are magnificent and have to be seen to be appreciated. Supplies from Maine and California are sporadic, although heavily flawed pink gems from Pala, California and some clean and superb bicolor gems are being actively produced. There is new orange tourmaline from Africa with a very unusual and spectacular garnet-like color. Gemologists should be advised to be on the lookout for such stones.

Ruby prices are skyrocketing, with larger and finer stones almost impossible to get. Bangkok dealers have become rich enough to keep the better stones, further toughening the supply situation. Some fine African rubies over 4-5 carats may be appearing on the market in the near future. These are pinkish-red, a very unusual color, very distinctive, and extremely beautiful. So far they are very inexpensive.

Sapphire from Sri Lanka, especially the treated material, is flooding the market. This material is deep blue, extremely fine in hue, and in stones up to about 30 carats (flawless). These stones seem to be rather prominently color zoned. There is no sure test so far for the treatment, and natural sapphires are used so they have natural inclusions. The color zoning appears to be a prerequisite for the treatment. Fine Burma goods are scarce, and Kashmir stones are virtually nonexistent.

Emerald is rising dramatically in price. The major market factors are Zambian stones which are appearing on the market in ever increasing quantity. Such stones, in their finest quality grades, are as good as or better than Colombian - superb deep green gems, flawless to the eye in sizes up to about 3 carats. Large, clean stones from Zambia are extremely rare, but the smaller stones can be incredible. The first AGA President, Jim Rosenheim, reported to me seeing a lot of 1/2 to 1-1/2 carat Zambian stones at the New York RJA last year. They were among the most magnificent stones Jim had ever seen, and almost unique as a lot. The price? A mere \$18,000/carats - wholesale, of course.

Amethyst is still available in abundance from Brazil and Africa, though the price keeps going up, especially for larger, dark, clean stones. Morganite and heliodor have not yet caught on - perhaps they will if the general color revolution keeps up.

Aquamarine is being produced in Brazil, but mostly lighter colored stones. Very dark aqua is tremendously scarce and frightfully expensive. I have heard of stones wholesaling over \$1000 per carat already. The biggest problem is finding good quality material at some kind of realistic price. Africa is a source for light blue gems, though some of large size. Other localities for aquamarine just do not seem to exist, and prices are sure to keep rocketing upwards. The momentum for this is tremendous.

Opal is becoming a very, very expensive stone. A fine black opal may bring over \$5000 per carat right on the fields if such a stone is found. Lightning Ridge is essentially exhausted, although occasionally a find is made. Andamooka and Coober Pedy are nearly deserted compared to the mining activity of past years. A new opal discovery in Australia at Mintebie was reported to me by Dave Ellis, Australian photographer and mineral collector. This new material is extremely fine, semiblack and crystal type, with excellent fire. Of course, the prices are high, but the material seems to be abundant at the locality. This will dramatically help the hard-pressed opal supply situation. Brazilian material seems to be emerging also, but no two people give you the same story on exactly what is going on. Hopefully the "true story" on opals will be reported in a later Newsletter.

Alexandrites are seen from time to time, at incredible prices. People don't seem to know what such gems are, but they know they are expensive! Catseyes have become staggeringly expensive, and good quality stones over 5 carats are very hard to find. The same is true of star sapphires and Burma star rubies. Black star sapphires continue to be available and at low cost.

A much more extensive treatment of the coloredstone market is found in the January issue of the PreciousStones Newsletter. For information write: PSN, P.O. Box 4649, Thousand Oaks, California 91359.

THE AUSTRALIAN SAPPHIRE DEPOSITS by Grahame Brown, FGA, FGAA, Dip. DT

Australia's vast commercial sapphire deposits are located at two distinct areas in Eastern Australia:

---The Anakie field (Fig. 1, location 1), a 900 km<sup>2</sup> area located 320 km west of Rockhampton, the largest city on the central Queensland coast.

---The Invernell-Glen Innes District (Fig. 1, location 2), a 2000 km<sup>2</sup> area located 700 km due north of Sydney.



Fig. 1 - location of Australia's commercial sapphire deposits.

Occurrence of Australian sapphire

At the Anakie field in Queensland: blue, yellow, green and parti-colored translucent sapphires; brown, black or blue, opaque asteriated sapphires are found in a "wash level" in Cenozoic alluvial gravel. These gravels are made up chiefly of pebbles of quartzite, sandstone, basalt, and quartz, which have been cemented together with varying amounts of silt and clay. Several layers of "wash" usually occur above the level of the basement rocks, the latter at 2 to 20 m below the surface. Fortunately, most "wash" is located 1-2 meters below the surface. These ancient sapphire-bearing gravels vary in consistency from an unconsolidated alluvium to a well consolidated conglomerate. It is most important for potential miners to remember that not all the "wash" is gem-bearing.

Sapphires found within these Cenozoic deposits are believed to have been derived from the Tertiary Hoy basalts, remnants of which are seen as a group of 60 volcanic plugs located 30 km to the northwest.

Four distinct sapphire-bearing areas have been defined, based on the local patterns of distribution of the gemmiferous gravels:

- (a) the Rubyvale area (in the north), contains deep "wash", 1-3 m thick.
- (b) the Sapphire area (in the east), contains shallow "wash", 2.5-3 m thick.
- (c) the Tomahawk Creek area (in the west), contains shallow "wash", 9-15 m thick.
- (d) the Willows area (in the south) contains shallow "wash", 0.5-3 m thick.

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The bulk of New South Wales sapphires are found in the tableland country of the New England District of northeastern NSW. In the Invernell-Glen Innes District, sapphires are found in the alluvium of the present-day streams, which radially drain the Tertiary basalts of the area. This alluvium may be close to or remote from present-day stream courses, depending on the rapidity of previous erosion. Most streams contain some sapphire. A few contain high concentrations of blue (light to dark), parti-colored (yellow-green, blue-green), and occasional green or yellow translucent sapphire. Some opaque, brownish-black asteriated corundum is recovered also from these deposits.

The sapphire-bearing "wash" averages 1-2 m in thickness, and usually occurs beneath a black soil overburden measuring 0.3 to 1.5 m in thickness. The sapphires are concentrated in irregularly distributed pockets and horizons within this "wash". Some sapphires may be found at levels below this "wash", so commercial miners remove all the overburden down to bedrock, for treatment. The New England sapphire "wash" is usually made up of: angular fragments (porphyry, basalt), rounded cobbles (mudstone, quartzite), and pebbles (quartz, ironstone, zircon, pleonaste, tourmaline), bonded together with a clayey matrix. About 20% of all sapphires recovered from this "wash" are marketable.

Deposits mined at Reddestone Creek, Frazers Creek and Horse Gully provide the bulk of the commercial sapphires that are produced.

### Mining of Australian sapphire

Commercial production of Australian sapphire occurs principally at the Rubyvale and Sapphire areas in central Queensland, and at Frazers Creek/Horse Gully area in the Invernell-Glen Innes District. All large mines are open cut (Fig. 2) while the smaller Queensland mines are operated either by open cut methods or by underground mining (Fig. 3). Small one-miner operations do exist; however, they do not contribute significantly to the National economy.



Fig. 2 - an open-cut sapphire mine at Frazers Creek, NSW

Sapphire recovery from the mined "wash" usually involves a series of dry and wet screenings to produce a heavy mineral concentrate. Such an operation is conducted by means of apparatus illustrated in Figure 3. Gem quality sapphires are removed from the concentrate by hand sorting on an illuminated table.

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Australian sapphire production

Claims have been made that the Australian sapphire deposits are depleted; the short answer to such claims is: NONSENSE!

The value of production for Australian rough sapphires is estimated (usually well underestimated) by the relevant State Mines Department. This information is consolidated and published annually as the consolidated report in the Australian Mineral Industry Review. Figure 4 illustrates the value of rough sapphire production in Australia during the last 30 years. The latest statistics available show that in 1975, \$14,525,152 value of sapphires was mined. During 1975, Australian production of rough sapphires was rather depressed, because the principle buyers, the Thais, were not active in the market.

Fig. 3 - A deep underground sapphire mine at Rubyvale, Queensland

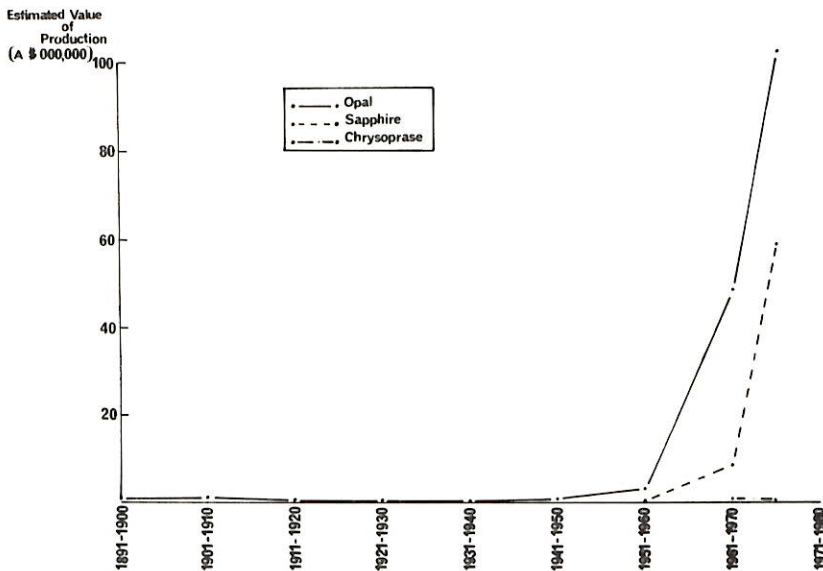


Fig. 4 - Estimated value of rough Australian sapphire, opal and chrysoprase production.

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AGA MINUTES - Meeting of Oct. 6, 1978

A regular meeting of AGA was held on Oct. 6, 1978 between 8:30 and 10:00 PM at the United Methodist Church, Annandale, Virginia. Dr. John T. Houk of the National Heritage Foundation, Suite 1020, The Heritage Building, Annandale, Va explained that the Foundation is a tax-exempt public trust dedicated to serving donors. AGA would be a logical organization to bring into the Foundation. Gems and cash can both be accepted from donors. The proceeds could be used to educate gem and jewelry sellers and consumers, e.g. about the many imitations and fakes on the market today, grant study scholarships and carry on many other activities befitting a Foundation. The initial cost is a \$50 application fee. A designated service fee of 8.5% is levied on each gift, of which 6.5% goes to the service representative and 2.5% to the national office. AGA President Arem suggested that an Executive Board meeting be called to take up the matter of AGA participation in the National Heritage Foundation.

The main part of the meeting was devoted to a series of colored slides and an excellent commentary on gemstone inclusions, presented by Joseph Tenhagen, FGA, GG of Miami, Florida. Both the photography and the accompanying commentary were of the highest professional quality, as we have come to expect from Joe.

President Arem presented a number of applications for membership in AGA, which were approved. New membership list additions are in preparation and will be distributed to all AGA members.

---Dale E. Farringer, MS, GG, Sec'y.

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MAN MADE INCLUSIONS IN AMBER by Lili Muije, GG & Corny Muije, GG, FGA

There is quite a bit of attractive Baltic amber on the market which, upon casual inspection, appears to have small leaves embedded in the amber. Most of the dealers claim and many gemologists believe that these inclusions are natural leaves.

Available evidence indicates that most if not all of these inclusions are man-induced. Tests such as S.G., U.V., R.I., hot-point and microscopic examination will lead to the conclusion that the material is natural block amber.

Gemologists must have a healthy portion of cynicism and should constantly dig for additional information. Strong magnification raises the first suspicion. The leaves are beautiful, circular or oval, and slightly dished, but contain no leaf veins or leaf stems. It is therefore not quite clear how the leaves received nutrition. The various gem testing books (Anderson, Liddicoat, etc.) emphasize the separation of plastics, amber, pressed amber and copal. No mention is made of man-induced inclusions. The Color Encyclopedia of Gemstones (J. Arem, 1977, Van Nostrand-Reinhold) and a discussion of Dominican amber by R. Crowningshield in "Gems and Gemology" (Winter '77-78) mention "sun-spangles" or "stress figures", but do not mention that they may be man-induced. The Van Nostrand Standard Catalog of Gems by Sinkankas, and GIA lesson #33 both refer to "circular cracks induced by heat treating" and amber that is "heated and plunged into dye, which is drawn into resultant stress cracks". Neither reference describes the stress cracks. Webster's "Gems" is the only source we have found that had a photograph of the inclusions and states: "cracks-like marks which resemble nasturtium leaves"...and "which appear to have been artificially colored and induced".

The U.S.S.R. ALMAZJUVELIEXPORT supplied a brochure that mentions "sun spangles" and "roasted amber", leaving it to the reader to connect the statements. The conclusion reached from all of the above plus talks with dealers is that amber treatment processing involves some secretive steps, and some of the inclusions seen in amber may well be artificially induced.



THE FASHION WORLD'S CHOICE - CORAL by T.F. Zook, FGA

This year we are seeing the return of interest in an old favorite for women's jewelry—the corals. Their soft colors complement the fashion designer's palette. All this is happening at a time when water pollution is affecting the coral reefs in many areas, and at a time when synthetic coral has appeared on the market (Gilson). Prices on some coral necklaces have soared to almost unbelievable heights. Recently I saw a 24-inch strand of matched 6 mm round coral beads of a delicate blush-pink color with gold chain offered for sale in a carriage-trade jewelry store for \$1,400. Then, at the big gemstone market surrounding the Tucson Gem and Mineral Show in February, 1978, I found an excellent strand of glass imitation beads of the finest oxblood coral color. The dealer told me he had imported it from Venice, and also that these same beads were being offered on the market as the real thing and that he understood that a lot of the same beads had been purchased for sale in American Indian jewelry.

I have not, as yet, been so fortunate as to either see or purchase a piece of the new Gilson synthetic coral. I did purchase a strand of the oxblood glass imitation for study. It is in the form of a well cut necklace of heishi. It has a wonderful luster, but the evenness of the luster over the whole strand is a tipoff, alerting the gemologist who might be encountering this type of material for the first time; a close and careful examination would then be in order. If the strung beads can be separated slightly, a whitish rough, frosted surface will be seen, but it lacks the structural appearance of a true coral, which would be seen with 10X magnification - that is, there are no little holes such as would be seen on a similar unpolished surface in a true coral heishi bead. Do NOT depend on visual examination without a loupe, for without magnification the rough frosted surface between the beads could be a real fooler! Be sure to check the bead edges for conchoidal fractures which might otherwise be taken as an irregularity in a true coral bead. Very careful examination with 10X magnification will also turn up an indented mold mark, which runs down one side of the length of each individual bead. Be very wary of this imitation, for even a close glance at the bead will reveal some of the unevenness and irregularities that might also be seen (although under magnification of different types) in true coral heishi beads. In other words, when you see a stunning oxblood heishi strand of beads, really look and examine them even if someone says that they were purchased as coral.

Another type of coral heishi beads that are now manufactured in the Philippine Islands from true coral is also available on the market. These beads are very light in "heft" but they are truly coral, with the outsides of the beads showing the minute pin-prick holes (of varying sizes) and the bead-cord side also showing the coral-structure holes. The outside surface has a variegated color; the preponderant color is the usual coral shade, but some tan color also appears at irregular intervals and patterns on the beads. The strands that came into my hands had a pronounced odor of the sea - a strong iodine smell.

"Blue-denim" coral, which is technically Heliopora coerulea and not a true stony coral, was available in the form of graduated heishi beads. These beads, which were also manufactured in the Philippine Islands, have a very high luster, but reveal the pin-prick holes both on the surface and between the beads. Off-white color occurs on the bead surfaces and, at times, between the beads. It is interesting to know that this type of ridge coral is found both in the Pacific and Indian Oceans and that its natural blue color is produced by iron salts. (For those who like to collect not only the fashioned jewelry but also a piece of the natural coral, the Aquarium Book Shop of the Scripps Institute of Oceanography at La Jolla, California 92093 had some pieces for sale, as well as an excellent booklet (\$2.45) called "The Coral Book", a guide to collecting and identifying the corals of the world, written by Sandra Romashko and published by the Windward Publishing Corp.) This blue-denim coral heishi also had a strong odor of the sea about it. Photomicrographs of the very rare calcareous blue coral can be seen in Gems and Gemology, Winter 74/75, Vol. XIV, No. 12, pages 369 and 370.

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## CORAL (continued)

Another beautiful new arrival is a highly polished, highly lustrous gold coral. The gemologist who hefts a strand of this coral will at first believe that he has a plastic imitation in his hands, because of its extreme lightness. A 40-cm. (16-inch) strand, without a clasp and on a temporary plastic cord, weighed just one ounce (about 28 grams). According to the dealer from whom it was purchased, this gold coral is the result of the treatment of black coral in an acid bath. This is believable because some of the beads have some black markings. The flat surface between the beads should serve as a ready identification of this material, for it looks like a smaller version of tree rings, in a black to brownish-black color. In some cases there is even a slight separation of the rings. Webster, in his "Gems", states that black coral, which is also known as "Akabar" or "king's coral" (*Antipathes spiralis*) is of a horny nature and concludes from his studies that the material is organic and may be conchiolin. He also states that, unlike true corals, this substance does not effervesce when treated with acids. I have not tried this test on the gold coral as yet. Reference to Liddcoat's "Handbook of Gem Identification" and the photomicrograph of black coral shows the same type of interrupted tree and ring structure on a cross-section of the branches, as does this gold coral.

A very few strands of branched lavender coral were also seen in the marketplace. These were expensive, even at wholesale prices. In seeking a natural specimen at the Scripps Institute of Oceanography, I was told that it is illegal in this country to harvest lavender coral, because it is considered an endangered species.

Before leaving coral developments, it should be reiterated that the Australian Gemologist (1976, 12, 12, p. 371-377) reported that two new precious corals from Hawaii were: Gold coral (*Parazoanthus* sp.) which occurred at "300 to 500 metre depths" and although apparently growing in symbiotic association with pink coral (*C. secundum*) was more like the black coral in its nature and properties. The gold coral referred to by the Australian report has not been physically examined by this author. However, in the gem market I have secured some different looking gold coral from the beads I have already described. In this instance, the gold color appears to come from under the surface of the bead. It has an iridescence and a slight play of color as the bead is slowly moved, in sunlight. This gold coral bead, even though rounded on the end, also displays the circular tree-ring pattern. Laboratory tests have not yet been performed as of this date by this author, but my suspicions are that both the gold corals which are in my collection are the same material, and may very well bear some relationship to black coral.

At a recent meeting, a wonderful opportunity was offered to an AGA group to examine a strand of "pink opal", which could really fool the uninitiated into thinking that the wearer was fortunate to have such a beautiful strand of angel-skin coral. The strand was passed around the group. It was too light in weight to be angel-skin coral. A quick check of my reference file to find out more about "pink opal" turned up a reference in the Journal of Gemmology, July 1977, Vol. XV, No. 7, p. 393 (Gemmological Abstracts): so-called "pink opal" can masquerade as angel-skin coral but it is really palygorskite and is a comparatively rare clay mineral found in magnesium-rich rocks, and can be either a pink or grayish color (Peruvian: S.G. = 2.18, R.I. = 1.55; Mexican: S.G. = 2.10, R.I. = 1.55).

Besides the glass and plastic imitators of precious coral, the gemologist should remember that other gem materials can also pass for coral upon superficial examination. Rhodochrosite, which also effervesces in HCl, can be separated by its R.I. (1.60-1.82), S.G. of 3.72 and H. = 5. This high S.G. compared to coral's 2.6-2.7 makes heft a quick means of distinguishing rhodochrosite. Conch pearl is separated from coral by its S.G. of 2.85, H. = 3.5, R.I. = 1.486-1.658 and also by a sheen which, in certain directions, resembles sheets of flame. Dyed calcite, which like coral effervesces in acid, usually has a mottled appearance and appears coarser than coral. It also lacks coral's structure and translucency. Dyed wood is betrayed by its low density. Glass is inert to HCl; it has gas bubbles and a vitreous fracture surface.

So be fashion-wise and be informed on coral. Enjoy looking at it and examining it whenever you encounter it. It is a fascinating subject.

The following information was provided by AGA member Edwin Sasaki, FGA in Japan.

There exists in Japan an organization known as the Scientific Printed Diamond Association, which issues an S.P.D. certificate. The diamond grading system used is analogous to the GIA system and in fact uses the GIA "four C-s" as a basis, but the system condenses relevant information into 5 grades: Extreme refined, Special refined, 1st, 2nd and 3rd. Extreme refined would indicate F-color, VVS clarity (no distinction between VVS-1 and -2), cut no less than very good. Special refined would indicate G-color, VVS clarity, cut very good. These are considered "standard goods". The grading as applied to goods provided by suppliers is slightly different. Special refined in the latter case would refer to F-color, VS clarity. The following chart summarizes the meaning of SPD number codes:

	1	2	3	4	5	6	7	8
COLOR	D	E	F	G	H	I	J	K
CLARITY	F	VVS-1	VVS-2	VS-1	VS-2	SI-1	SI-2	I-1
CUT	very good	good	fair	poor				

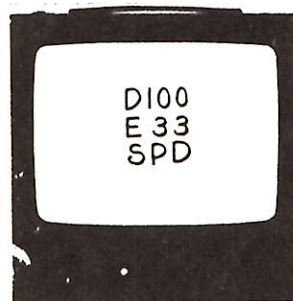
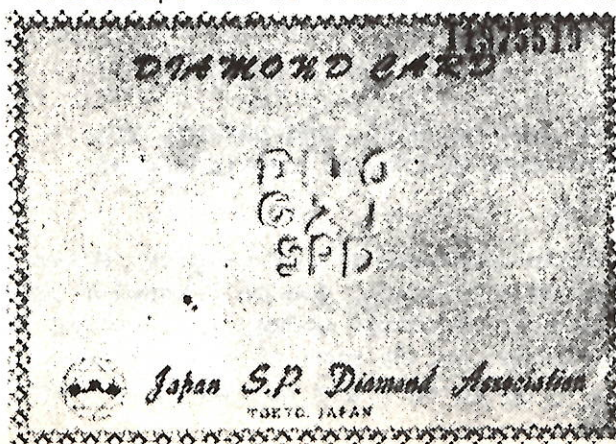
The following chart summarizes the SPD classification, compared to GIA standards:

SPD STANDARD GRADES	IN COMPARISON WITH GIA STANDARD									
	STANDARDIZED GOODS					SUPPLIER'S GOODS				
	COLOR	CLARITY	SYMBOL	CUT	SYMBOL	COLOR	CLARITY	SYMBOL	CUT	SYMBOL
Extreme refined	F	VVS	2.3	good	2					
Special refined	G	VVS	2.3	good	2	F	VS	4.5	good	2
1st grade	H	VVS	2.3	good	2	G	VS	4.5	good	2
2nd grade	I	VVS	2.3	good	2	H	VS	4.5	fair	3
3rd grade	J	VVS	2.3	fair	3	I	VS	4.5	fair	3

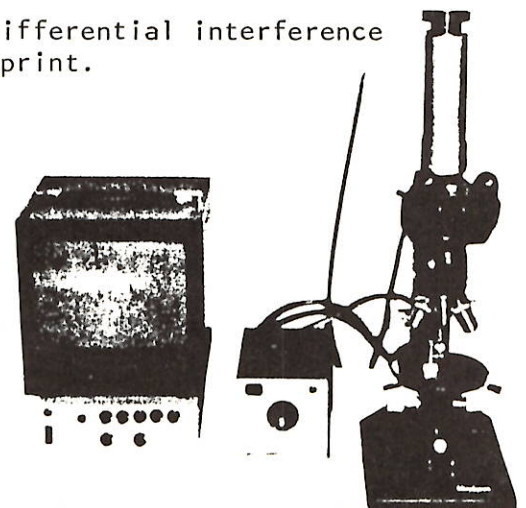
The S.P.D. Association actually STAMPS the coded grade right onto the table of a graded diamond, using an electric discharge (sputtering) technique. The size of the coded grade symbols is so small that extreme magnification is required to see them. Even to a gemological microscope at high magnification, the imprinted code is totally invisible and does not affect the appearance of the stone. A card is provided with each stone that tells the grade stamped on the stone. A typical imprint might be as follows:

- DI10     D in upper left hand corner indicates natural diamond; 110 = 1.10 carats
- G 21     G indicates color is G; the numeral 2 means clarity VVS; 1 means cut very good
- SPD     SPD means scientific printed diamond

The following pictures indicate a typical card and the differential interference microscope and TV viewer which are necessary to view the imprint.



T.V. MAGNIFIED PICTURE



COMMENT from E. Sasaki on the previous information (page 11):

This information appeared in trade papers and at first caused considerable excitement, since something new always attracts attention. After examining the equipment during displays and exhibitions, gemologists found out that the microscope was developed just for that purpose and has no other uses, because of the extremely high magnifications involved. Lately, it seems that the excitement has ceased and not much has been heard about the method.

\* \* \* \* \*

GOLDEN & COLORLESS GROSSULAR - THE OVERLOOKED GEMSTONES by Lili Muije, GG & Corny Muije, FGA

GG,

For the past 10 years green grossular, also called Tsavorite, has generated quite a bit of excitement. We have seen the prices move from \$100 per carat for 1-2 carat stones to \$700 or more per carat.

During this time it was generally overlooked that golden grossular was very much rarer than the dark green, and colorless material was rarer still. Yet all of these are found in the same area of Africa.

Recently several writers have claimed that 1+ carat greens are hardly available. At the International Gem and Mineral Show in Washington, D.C. in May, 1978, if we had ignored price, we could have purchased over 1,000 1+ carat green grossulars. This is hardly consistent with the claimed scarcity.

Yellow to deep golden colors were practically unavailable in Washington. We saw no more than 30, and not one reached 3 carats. In fact, over the past 5 years, we have only seen 2 golden grossulars over 5 carats.

We looked even harder for colorless stones, and arrived early and managed to buy 18 gems ranging in size from 1 to 4.57 carats. We bought every stone available and as far as we know got every one over 1 carat available at the show. We were still in the process of buying when the first dealer came into the wholesale area looking for colorless grossulars. Before the show was over at least 6 dealers had looked for colorless - one even called long distance from the West Coast.

In discussions with most of the wholesale dealers that bring grossular from Africa, the following picture emerges. No more than about 10 colorless grossulars between 4 and 7 carats are known to exist. All or most of these large stones are locked up in the hands of private collectors. It is estimated that there are about 40 stones from 2-4 carats, and a few hundred between 1 and 2 carats. Below 1 carat there should be about 600-800 carats.

It is noteworthy that the Smithsonian does not have on display either a golden yellow or a colorless gem.

Very probably some uncut golden and colorless rough is still kicking around the safe deposit vaults of Switzerland and other countries. However, it is unlikely that if all this rough were cut, the number of existing cut gems would even double.

We do not have any similar estimates on golden material; however, whereas quite a few wholesale dealers used to offer them, they now have seemed to disappear from the market. Five to six years ago a 1-3 carat golden yellow or colorless grossular could be purchased for \$50 per carat. If you can find such stones today they will probably cost \$150-250 per carat. If there is any serious increase on demand, from collectors or museums, the pressure on supply could push prices even higher.

\* \* \* \* \*

Ed. note: Lili and Corny are gemologists who collect gems as well, and garnets are among their favorite stones; consequently, they have made a kind of speciality in the gem garnets.

\* \* \* \* \*

From Lili Muije: A "chuckle": A Gemologist is a simple compound of petrologist, Mineralogist and geologist. He has a disorderly internal structure, due to irregular hours and meals - this being reflected in his rough looking external shape, terminating in one plane face. His physical properties vary at times, as do some of his optical properties. He is organic in nature, never runs true to form and has many bad habits - his luster usually improves when he is half-cut!