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PRESIDENT'S MESSAGE

We had a very successful Tucson.

The Conference on Color was well received by all who attended. The general membership meeting, with an extremely good program by Joel Arem, was also held in Tucson.

We held our entrance exam for the Master Gemologist Appraiser program on February 11 and 48 people took the exam. The exam was prepared and graded by the GIA. I am very happy to announce that we had 85% passing and only 15% did not successfully pass the exam. The exam required a minimum of 75% to pass. Each entrant was assigned a number so no one could be identified. The highest grade achieved was a 95%, and the lowest was 63%. Each member who took the exam and passed should be proud. I have always believed that as professional gemologists, we should be able to demonstrate our skills. Anyone who has been out of school for a year or longer and who is willing to sit for a 100-question exam made by an independent third party and successfully passes it is a professional, and I applaud all of our members who demonstrated their skills by taking this exam.

The plans for the second phase of our M.G.A. program are well underway and Course 1A and 1B are tentatively scheduled for the middle of July in Washington, D.C. Dr. Arthur Brownlow, newly appointed Chairman of the Education and Accreditation Committee, is working closely with Mr. Neil Cohen making the necessary arrangements. This same program is tentatively scheduled for the West Coast, in California, in August. You can expect to receive more information on this program as details are finalized.

Due to the recent resignation of Ms. Luana Veo as First Vice President, I have appointed Mr. Neil Cohen, Association Treasurer, to fill that position. This appointment was approved by the other Board members, and Mr. Cohen will be acting in both capacities until the next election. Mr. Cohen has been instrumental in the development of the Master Gemologist Appraiser program and the quote in our by-laws, "A designation, to be meaningful, must be a true

test of a person's ability," is directly attributed to him.

As many of you are aware, the AGA Executive Board conducted a limited test on three color grading systems in Tucson. The systems were "Color Scan," designed by the American Gemological Laboratories; "Gem Dialogue," by Howard Rubin; and "Gem Color Guide," by California Gemological Laboratories. The test was conducted on a limited number of gemstones by both the Board members and each system's designer. The general feelings of the Board members after concluding this limited test were as follows:

The "Color Scan" results were easier to obtain and they were closer to the results of the designer (AGL). The two other systems were found to be somewhat cumbersome to use, and less close to the results of their designers. The AGA will be conducting further tests on these systems, plus the GIA Color Grading System, and at the conclusion, we will adopt the best system for our needs. The test will be conducted by our AGA Accredited Laboratory people.

We feel these people are serious professional gemologists who have shown support for the AGA. They all have a laboratory environment in which to conduct the tests. The tests will be held in four designated test centers around the country and in our own laboratories. We will use our AGA Accredited Laboratories which now number 17, with 9 more pending. Mr. Calvin McCamy, who spoke at our color conference, will assist us in preparing and in the administration of this very important test. This, I believe, will be the most scientific, serious and meaningful test ever conducted by our industry. We urge all of our members to wait for our results before buying and using any color grading system on the market today.

I would like to express a special thanks to Mr. Thomas Tashey and Mr. Thom Underwood, the conference coordinators; Myriam Tashey; all of our fine speakers; and to Gem Instruments, Portalab and System Eickhorst for providing equipment.

EDITOR'S MESSAGE

This issue marks my first efforts as editor of your newsletter. I would like to begin by thanking Mrs. Holly Yates, on behalf of the entire membership, for the outstanding job she has done in putting together this publication over the past two years. I shall endeavor, as she did, to upgrade its quality to a high level, as is befitting the gemological profession.

Secondly, I would like to apologize for the delay in this issue's mailing. Transcribing and editing tapes made in Tucson was partly to blame. The next issue will come out on time--near the first of July. Our 1983 Membership Directory is scheduled to come out in mid to late July. As did last year's directory, it will have an alphabetical listing, a business directory, and a state and country listing, as well as the newly-designated Accredited Laboratories. This year we would also like to list your telephone numbers, for those members who would care to. To facilitate this information processing, we ask each of you to please complete the short questionnaire included in the back of this issue, and mail it back to this office before June 10. Of course, only paid-up members will be listed in the directory, so please, if you intend to remain active, get those dues mailed in, too.

Thirdly, I would like to solicit suggestions from the membership for a possible name for this publication. As the membership grows, I hope we are again able to publish it bi-monthly. Of course, we are always in need of your articles and news items, so please send them in along with your suggestions for improving the newsletter. Next quarter's issue will include a section for "Accredited Laboratory Notes"--where we will describe interesting and unusual items seen in the various labs. If you have an Accredited Laboratory and come across something unusual which you would like to share with the membership, please describe it briefly and send this in along with any clear pictures you may have taken of the item.

I have always thought of the AGA Newsletter as a forum, where members can share their experiences and air their

best means of communication we have between members in our Association. We hope you will share your ideas and thoughts with us so that we may be able to pass them along to the membership at large.

This issue begins with a letter of discontent from member Joe Gill. We publish it in its entirety, because we feel other members may share some of Mr. Gill's misgivings. It is followed by a reply from President Tenhagen, in which he addresses each of Mr. Gill's points, paragraph by paragraph, in an effort to clarify any confusion there may be about what the Association is trying to do.

In this issue and the next, we are publishing excerpts taken from the lectures given at the "Conference on Color". It is most regrettable that the talk given by Mr. Calvin McCamy, from the Munsell Color Company, on the history of Color Science, was not recorded due to difficulties with the P.A. system. His presentation was considered by many to be the keynote of the entire conference. This quarter we are presenting the highlights from the talks given by Dr. Earl Anderson, Mr. Cap Beesley, Mr. Thomas Chatham, Mr. Jean-Francois Moyersoan, and Mr. Elly Rosen. Next quarter's issue will include talks given by Mr. Cap Beesley, Mr. Howard Rubin, Mr. Jim Sharp, and Mr. David Shoup.



WE ARE ALSO
IN NEED OF
FILLERS,
ARTWORK,
AND PHOTOS.

AN OPEN LETTER TO THE AGA

HAS THE AGA GONE TO POT?

Joseph O. Gill, B.Sc., G.G., F.G.A.
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AGA

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This is a letter of deep concern regarding the original intent for the formation of the Accredited Gemologists Association in relation to its present status.

Inasmuch as we were organizing a new chapter of the AGA here in Northern California, I felt it necessary to acquaint prospective new members with the history and purpose of the AGA. In our first newsletter of September 1982, I summed up a review from the original AGA newsletters starting in July 1976, plus even earlier notices of AGA formation in my personal library.

Below is a copy of this letter in its entirety:

"A letter from the President of the newly organized Northern California Chapter of the Accredited Gemologists Association."

I am pleased as a charter member of the AGA to accept the responsibility of starting up a chapter here in Northern California. It seems proper to say a few words about the origin and intent of the AGA. The idea of the AGA was conceived by Sonja S. Schwartzman and Tomiko Butler. The intent was for F.G.A.'s and later G.G.'s to endeavor to keep up with new developments in gemology (new gemstones, new finds, meetings of interest, etc.), and for purposes of open discussions of new equipment and procedures in gemsetting, new books, advancement in educational matters and opportunity for fellow gemologists to get to know each other. The first official meeting of the AGA was held in Maryland, January 31, 1975. The first formal notice of the formation of the AGA appeared in the October 1975 issue

of the Journal of Gemology, p. 400, and the first newsletter of the AGA was for July 1976. The newly formed Northern California Chapter of the AGA will continue to follow the original intent. Gemologists both in or out of the jewelry business are encouraged to participate. Our main purpose is educational; we will not attempt to judge the ethics of the people in the business. We will be doing well enough to keep up with the science and history of gems and jewelry. Special committees will be set up regarding such things as appraisals and new gem finds, the study of the lore of gems, etc. Please tell all your gemologist friends to not miss any of the meetings.

Joe Gill, President,
B.Sc., G.G., F.G.A.

As stated in the first National AGA newsletter of July 1976, the motto was, "to develop and promote professional standards in the practice of gemology." This meant that constant changes in the gemological knowledge are always taxing, even to the experienced trained G.G.'s and F.G.A.'s, and in order to keep up with new developments we must set high standards for ourselves to be fully informed.

It is necessary for all AGA members to receive a complete resume for each prospective national officer in order to vote intelligently. Prospective officers may have a genuine concern for the AGA's growth or, as I believe, many officers use the organization in order to put their own business and personal ideas in lights in front of all gemologists around the world. This is not good for the development of the AGA.

We have seen the recent AGA newsletter lose all those wonderful tidbit articles from members around the world. This lack of participation by noted gemologists is a strong sign of apathy. I have found the recent barrage of appraisal ethics and code of ethics both boring and unrelated to continuing education for us all.

The recently adopted By-Laws were overwhelming, overworked, overdone, and really unnecessary. Half the AGA members bothered to vote and perhaps 20 of those 166 voters read and studied each article therein.

Who are some of the most renowned gemologists in the world? Basil W. Anderson, Robert Webster (deceased), Bob Crowningshield, Richard Liddicoat, John Sinkankas and Dr. Fred Pough. What do these few remarkable individuals have in common? They don't get involved with appraisals on gems and jewelry. We would be proud to have them as members but they would soon get bored with appraisals and judging other people's ethics.

Let us show respect for the very fine organization, "The American Gem Society". The AGS was founded by Robert Shipley in 1934 in order to develop a code of ethics for the jewelry industry. The AGS has also spent many years developing appraisal standards and recently, with the cooperation of the GIA, will be offering the new title of "Certified Gemologist Appraiser", CGA, to qualified members. The AGS also offers the title of "Certified Lab".

This very fine organization, the AGS, is unlike the AGA in that its members are solely from the industry, whereas the AGA encourages any G.G. or F.G.A. in or out of the industry to join its ranks. I submit that the newly proposed "Master Gemologist Appraiser", MGA, title and the "Accredited Laboratory" certificate both be forgotten. These new titles are confusing, repetitive (both supervised by GIA staff) and better left in the more capable and experienced hands of the AGS.

The AGA does have a fair number of appraisers, and we should set up a national appraisal referral committee who would have a liaison with the AGS to answer questions.

Let's re-evaluate ourselves (AGA) and endeavor to recapture the original purpose of our meeting. Both G.G.'s and F.G.A.'s meet to discuss advances in Gemology, new publications, history of jewelry, etc. We should set up committees for special interest areas.

Annual dues for the AGA were always \$15.00 per year until January 1982 when all the members voted to raise the dues to \$20.00. Now, January 17, 1983, we were notified that dues have gone up 500%. We won't vote on this increase and are told, "Your prompt remittance is appreciated." I am sure in these hard economic times we should have voted on this matter. The whole thing--national dues, local dues, test fees and lab accreditation fees--add up to several hundred dollars. Let's vote on all this expense soon or membership will drop drastically. We could start by holding the junk mail down; all notices, etc. should and can be issued in the regular newsletters.

Hoping for quick reform.

Joseph O. Gill

RESPONSE TO MR. GILL'S LETTER FROM PRESIDENT

HAS THE AGA GONE TO POT?

A Reply to the Letter of Mr. Joseph Gill

Paragraph 1: To develop and promote professional standards in the practice of gemology. We, the present elected officers, and myself as President, are doing exactly what our motto suggests: To be a fully informed gemologist, one needs to have a variety of knowledge at his fingertips which has in part been printed in our publication.

Paragraph 2: In our last election, all eligible voting members received a resume on the proposed slate of officers. I don't know which officers Mr. Gill believes are using their office for personal gain, but I can assure you that none of the AGA elected officers are. We will gladly explain to any member all the business hours which we all donate to the betterment of AGA, and they are considerable. The elected officers of this organization have the AGA's interest at heart and we will and can demonstrate this to anyone who questions it. As a matter of fact, since my election as president, and until the AGA installed its own telephone, my business paid for all long-distance phone calls made on AGA matters. Everyone in our organization donates their time and talent; no one receives any remuneration for time spent on AGA business.

Paragraph 3: There is no lack of participation from noted gemologists in the AGA. The recent emphasis on appraisals has developed over the last year because of the appraisal problems we were having in the industry. This was brought to my attention by Mrs. Sonja Schwartzman in the form of a Howard Ruff article; e.g., the investment industry, using sometimes inflated appraisals to sell and buy the land for gemstone swaps where over-inflated appraisals were used as a basis to establish barter value. Unsuspecting people are losing homes, land and tremendous amounts of money because of these activities. We, as an organization, would be less than professional if we turned our back on such unethical activities, stuck our head in the sand and hoped they would go away.

We, the practicing professional gemologists of the AGA, need a professional code of conduct which, incidentally, is the original one this organization used, and Section II deals with gem I.D. and appraisal reports. The Master Gemologist appraiser "MGA" program is a sound well-thought-out designation. It is strictly voluntary--no one is forced into the program. Also, the AGA accredited laboratory program is strictly voluntary. If our members do not feel the need to participate in them, they won't. However, those members of AGA who are active in the field of gemstone identification and who provide ethical appraisals see the need for an organization with high standards, strict requirements, testing before certification and the need to be recertified. In point of fact, our original by-laws in Article II mention appraisals three times at least, so this is not something we thought of recently--it has always been there. The Board of Directors, in conjunction with a large number of our members, are in the process of developing these procedures as a means of serving our members' needs. This is continuing education and not boring.

Paragraph 4: The recently adopted Constitution and By-Laws were needed, assembled and put together by a By-Laws Committee consisting of 6 members, representing a cross-section of our membership. They were not overworked, overdone and are really necessary, not unnecessary. This act was very important. Read the old By-Laws. We had no Constitution, and try to understand the procedure for formation of a new chapter. There were no guidelines on chapter formation. How Mr. Gill was clairvoyant enough to know that perhaps 20 members read and studied them is demeaning to all our fine voting members. I strongly believe in the intelligence of our members to have read the Constitution and By-Laws and voted according to their common sense, independence and conscience.

Paragraph 5: The renowned gemologists Mr. Gill refers to are by and large educators, so therefore they do not

appraise. These renowned gemologists have never, from the inception of AGA, been members and have never to my knowledge expressed any interest in joining AGA. It should be stated here that Mr. Liddicoat is very familiar with our organization, our Master Gemologist Appraiser and Accredited Laboratory programs. He received advance copies of these programs for comment and I personally visited the G.I.A. with our national secretary, Mr. Tom Tashey, and I spent time with Mr. Liddicoat discussing these programs. Our impression was that he was not bored with our programs.

Paragraph 6: The AGS is a fine organization, however, most of our members do not belong and most cannot belong to the AGS. To my knowledge we have only three AGS members in our organization. The AGS does not speak for the Jewelry Industry. In a recent personal meeting with Mr. Michael Roman, Executive Director of the Jewelers of America, a 15,000-member organization, it was mentioned that the AGS has an estimated membership of 1,200.

Paragraph 7: The MGA designation and the AGA Accredited Laboratory will not be forgotten. They are clearly defined in our recent publications, and are not confusing or repetitive as Mr. Gill states. We the officers of the AGA will not let another organization, no matter how qualified, set standards for us. We feel this would be unprofessional. The AGA is a talented organization with many highly respected individuals. The GIA is the educational branch of our industry. They are not supervising our programs. We have a great deal of respect for the GIA and other fine organizations. However, we feel the AGA is a responsible organization capable of developing, producing, and governing its own programs and standards.

Paragraphs 8 and 9: These paragraphs were answered in my other statements.

Paragraph 10: Annual dues of \$15.00 or \$20.00 a year for a professional organization is unprofessional and demeaning to the organization. Could the AGS, for example, or any other fine organization, operate, grow and mature with \$20.00 dues a year? Of course not. Our Con-

stitution and By-Laws that took effect January 1, 1983, clearly state that the Board of Directors sets the dues for the organization; this is reviewed by the Board of Governors. The dues were raised to \$100.00, and \$20.00 per member will be refunded to the chapters which no longer have a dues structure. The test fees, laboratory certification fee, etc., are voluntary as stated earlier, and the reason these programs have a fee is that they are self-sustaining; no money from general treasury is used to support these programs.

When I was elected President of the AGA, we had 107 paid members; we are now at 400 members and growing. We acknowledge we will lose some members because of the dues increase, but we felt this increase was absolutely necessary and the response has been overwhelmingly positive. It is a personal affront to have information shared among the membership called "junk mail". The information Mr. Gill refers to, I assume, was about our highly successful "Conference on Color" held in Tucson, Arizona. We don't feel that information we send to the membership should necessarily be limited to the regular publication which appears quarterly, and we do not consider it to be junk mail.

Mr. Gill's letter was printed at his request. We appreciate his comments and thoughts, as we do from all the members.

Sincerely,

Joseph W. Tenhagen

EXCERPTS AND HIGHLIGHTS FROM THE TUCSON, 1983 CONFERENCE ON COLOR

(ed. note: These excerpts were taken from transcripts made from tape recordings of our speakers' lectures in Tucson. Because many of the speakers were explaining things shown on slides, I have had to take certain liberties in presenting their talks in this form. My apologies to all our fine speakers if I have inadvertently changed some meaning, or left out something they felt was important.)



KASHAN RUBY IDENTIFICATION

Jay Earl Anderson, Ph.D., Gemologist
Gemological Research Group, Inc.
Austin, Texas

Kashan, under the direction of Dr. Trueheart Brown, grew a lot of crystals from 1968 to 1977, but sold very few. In 1977 Kashan was reorganized; Dr. Bob Mallas became president of Kashan and began selling more material. All of the material that's ever been put on the market is from the generation that was grown from 1968 to 1977, and that is the material that I have studied and that I will talk to you about today. The work that I've done purposely has been restricted to using methods that are what I call conventional gemological methods. What I was trying to do is find a method to the identification that just about anybody with more or less the minimum gemological equipment could take care of. Kashan identification is a complex problem. The material is quite variable, and there is no one characteristic that can be used to give you an absolutely certain identification. Instead, you need to look for several things. And, I think, that should be the guideline for any identification. I'm sure all of you have seen stones misidentified because someone had looked at one or two or three characteristics, but not at everything else. It's important to check everything you possibly can, even if you feel that you are correct in your initial identification. As time goes on, the quality of synthesized materials will improve. So, the future's not likely to be easier for us, but it

behooves all of us to maintain our skills at as high a level as possible and to try to keep up.

There is a range of color in the Kashans. I'm sure a lot of you have read information in the trade press that says Kashans are an orange-ish color; well, some are. The most common single color probably is something slightly on the orange-ish side of red. But that's by no means something that I feel is valid as a tool for identification. They range from what would be called a pink sapphire to something that looks almost like a Malaya Garnet, it's so orange. There is a good bit of color zoning in the Kashans. One feature that does distinguish the Kashan from other synthetics, including Chatham, is there is apparently no metallic, platinum-like material in it. This is quite understandable since Kashan says that they don't use platinum in the process. Another thing that I've seen in many Chathams but I've never seen in a Kashan is transparent, hexagonal crystals of low relief which I suspect are little platelets of corundum.

A typical identifying characteristic of the Kashan material is what I've referred to as a very coarse, solid-filled negative crystal. It's exactly what one would expect from a flux-grown process--the material filling the negative crystal is some sort of flux. It can be coarse, sugary looking, or it can be highly reflective. The difference in the appearance is simply a matter of the conditions of crystallization--the rate of cooling, probably. I've never seen these very coarse features in a natural ruby. These negative crystals can come in rod-like geometric shapes, which under very close examination you can see are bounded by crystal faces. These negative crystals, when filled with a solid, are characteristic of synthetic materials that are flux-grown. Filled with liquid, they would be features you would expect of a natural material. I have never seen liquid filling in a Kashan. So if you see liquid filling, my experience says that it's got to be a natural, or perhaps a hydrothermally

grown synthetic. Also found in Kashans is what I call a mesh-like network. It's a veil-like feature in the stone and it's very common. Many people think this is the feature that looks the most like a natural. And, indeed, in its geometry, it is very much like things that you see in natural rubies. But it is solid-filled. There are two tests you can use to determine if it is liquid-filled or solid-filled: one is to look at it closely with enough magnification to see if it's a sugary solid filling. The other is to look at it in transmitted light. In bright field illumination, the liquid-filled cavities tend to pale, not necessarily to complete invisibility, but a great deal. The solid-filled cavities, on the other hand, still stand out quite boldly.

I'm sure everyone has heard of the notorious rain in Kashans. Under high magnification it looks like a real fine dust. My guess is that it's more of the flux sort of inclusions, but on a very fine scale. Sometimes, you'll see what some people call hairpins. I call them comets. They have what appears to be kind of a crystalline head with a dusty rain-like tail streaking out. These are quite common in Kashans, but by no means will you see it in every stone. Polysynthetic twinning is extremely rare in Kashans; it does occur, but it is very, very rare. It's a fairly common characteristic of natural rubies. There are clear bands that you can sometimes see in Kashans--these are growth lamellae; they are not polysynthetic twinning.

The next five or six slides were taken of a Kashan crystal I have with me, so you'll be able to look at it. I've not seen anything quite like some of the features in it before or since. Here you see sort of a satiny appearance of intersecting silky-looking material. Here you can see needles, obviously oriented in two distinct directions and definitely intersecting. And here is what could be referred to as Saturn-like inclusions. I think the core is a little negative crystal filled with flux, but it looks like just a little crystal. And it's surrounded by a fingerprint-like veil, or roughly circular disc-like feature. I've only seen this in one crystal. I don't know if

it's a freak crystal, or if the crystal was perhaps one they got out of a new production and haven't told anybody about yet. I have the crystal with me; you can look at it yourselves.

I'd like to finish with a point concerning Kashan and synthetic stones in general. It's been suggested to me, and in talking with Dr. Mallas I know it's been suggested to him, that Kashan put some sort of mark or tracer in the stones to make it easy to recognize, to distinguish them from naturals. My personal feeling is that if that is done it will open the door to the grossest kind of fraud. I think we're much better off by being able to recognize them with other methods. The reason is this: If we could use only fluorescence to distinguish synthetics, it would be only a matter of time before that became the way that practically everyone would identify these stones. If Dr. Brown forgot to put the marker in, or if he sold the company and someone less ethical purposely grew some crystals without the marker in them, what would they be? They'd be natural rubies. So I really feel that it would be very dangerous to put that kind of a tracer in a Kashan or in any synthetic. I think the important thing is for us to learn how to identify stones on their own merit, in our own abilities, rather than relying on some magical black box that could be defeated by someone at some time.



SEPARATING THAI RUBIES FROM KASHAN

C. R. "Cap" Beesley, G.G.
American Gemological Laboratories
New York, New York

The Kashan product is not a new product. It was first manufactured in 1968, according to published literature. The Kashan material typically has an orangey or brownish overtone to it, which puts it in the category most closely allied with Thai material, due to the iron content in it. The specific intent of this meeting this afternoon is to take a look at the identification of Thai material, since it is so similar to the Kashan, and the identification of the Kashan product. What features can

we look at in terms of understanding and separating those two pieces of material? The thing to keep in mind is this: There is never one piece of information that is responsible for identifying any one stone. Now, it can be that one factor is more common than another; one factor can carry a lot more weight than another. But the process of identification is one of accumulating facts. The first step is always accumulate the information without drawing conclusions. Take that information, put it together, and then draw your conclusion. What we're after, then, is not any one single element that will conclusively identify Kashan, although in some cases it can be a singular element. But what we're going to be looking for in identifying any material is an accumulation of all the elements relative to that identification.

Let's begin by looking at the element of fluorescence as it relates to these two materials. There is a difference, tone for tone, between the fluorescence of Thailand material, or Thai-type ruby, and Kashan. We use the category, Thai-type, to describe anything coming from that geographic location, which includes Cambodia, because there is insufficient information at this moment in time to separate Cambodia from Thai. One of the things about Thai material, because it is loaded with iron--iron is a fluorescence quencher--is that the fluorescence tends to be very low. Fluorescence is a function of the tone of the material, so the lighter the material gets, the stronger the fluorescence gets. The darker the stone gets, the lower the fluorescence gets. If you match Thai material with the Kashan material, tone for tone, the fluorescence of the Thai material will typically be dramatically darker. If you take a 95 tone Thai stone and a 95 tone Kashan stone, the Kashan will still fluoresce more. But it needs to be a tonal match.

Let us next take a look at the element of dichroism and the difference in dichroism between Kashan material and Thai material; and there are differences. Are the differences always there? No, but if they're there 80%-90% of the time, they can be used as an

extremely useful mechanism in identifying that material. If you look at the material through a calcite dichroscope, the orange-colored window tends to be much stronger in the Kashan than is typical of Thai-type. When looking at Kashan, the dichroscope window takes on almost a translucent kind of plastic-like appearance, with a very strong orange color.

One of the most useful elements happens to be the inclusions. Now, we all know from basic gemology that the inclusions that are entrapped within a product are frequently the function of the growth environment of that product. So, in the case of natural material, which has much more time to grow, one thing that we might look for is a regimentation of inclusions that will not necessarily be visible in materials that are forced grown. Quite obviously, if manufacturers had the option of growing any synthetic product in half the time, and still coming up with the same level of product, they would do it. They have certain time constraints, but Mother Nature and God didn't have any time constraints. And part of the natural process tends to be a regimentation, an orientation. For example, one of the most characteristic inclusions in Thai-type material happens to be something called a Saturn-like inclusion--Saturn-like because it looks very much like Saturn. It has a core; it has rings, or a fingerprint pattern that either cuts through the center of it or where the core actually rests on the fingerprint pattern. The fingerprint pattern usually takes on a spherical, or somewhat spherical-type appearance. Interestingly enough, when you find these Saturns in Thai-type stones, as you rotate the material, they tend to all reflect pretty much at the same time. Their rings are all oriented parallel to one another. This Saturn inclusion we are talking about, incidentally, is to the Thai-type material what a three-phase inclusion is to Columbia and Pakistan emeralds. We have not found this Saturn-like inclusion in anything other than Thai-type. We have not found it occurring in any other location. You will not find them in Burma; you will not find them in Celonese material; only in Thai-type ruby.

As another example of orientation in natural material, you tend to find things like the twining or parting planes much more common in Thai-type stones. In fact, they are isolated in the Kashan product, but they are common --very common in Thai-type material. These are the straight, flat reflective planes, almost like venetian blinds, running down through the material. In those planes, we frequently find inclusions actually laying in the plane itself. You find most commonly in Kashan this kind of wispy-like, wide-angle kind of graining, typical of what you see in diamonds. You're familiar with what graining looks like in diamonds; this is the closest thing to it. It becomes more obvious as the material becomes darker. As you go from, let's say, an 80 tone to a 95 tone, that kind of wispy-like graining will become more obvious as the material becomes darker.

There is not a whole lot of information available about the actual growth technique of the Kashan product. However, we do believe it is not grown in platinum crucibles because of the lack of platinum present in the product. Typically, in the Chatham material you expect to find those little trigonal or hexagonal, flat platinum platelets as part of the inclusion structure of the material. Stones in Kashan's upper grades that appear clean in a face-up position, when you look at them through the pavilion facets with the stone table to culet, you start seeing some of the more identifiable things. One thing in particular is something that we call dust; the GIA calls it rain. It's basically very finely disseminated particles scattered throughout the material. Flux-filled cavities are another one of the common denominators of the Kashan material. Since the product is growing in a flux-filled environment, it is entrapping evidence of that environment, so it is therefore entrapping flux in a variety of forms. Some of the cavities actually begin to take on a negative crystal-like appearance; it seems to be flat surfaces on them. But as you look inside them, what you see is a typical kind of sugary, aggregate, translucent texture filling those cavities. In certain situations you'll find these lacy kind of patterns,

or networks; again, when we look closely at them what do we see? The same translucent, aggregate, sugary-like appearance. If we look in some of these cavities, we get what appear to be gas bubbles, except that the gas cavities are immobile. They frequently take on an angular-like appearance because the gas is simply being trapped in that flux-filled solid cavity. They are solid; they are not liquid-filled. They don't get that transparent appearance of the fingerprints like you would expect in Thai material. Sometimes these flux-filled cavities have an orientation to them, almost in streamers. If you look closely at them, you'll see they tend to be three-dimensional; they tend to be flux-filled; they tend to have a lack of transparency. They in fact have translucency; they have this aggregate, sugary-like texture internal. As they get progressively finer, they also become surrounded by what we refer to as dust. Dust can get extremely fine to the point where it actually looks like a set of streamers in the material. Frequently, you also find these comets, where they had a head and then that V-shaped, comet-like tail radiating from it. There is a similar kind of inclusion which occurs in natural gemstones, so you have to pay close attention when you look at these things. In the natural material you often get a bright to dull, transparent to opaque, reddish crystal with the tails radiating from it. To the best of our knowledge, the only needles that have been encountered in Kashans have been isolated and are extremely fine. You don't find a number of them in the stone. Frequently, what you find in the Thai-type material are these coarse, intersecting needles that form almost perspective-like gridworks; they look like perspective drawings, or almost like building blocks.

So you see, there's a number of elements that you can use to establish the identity. You've got fluorescence, you've got dichroism, you've got the inclusions, and you've got the physical appearance. You're not having to fly on just one singular element.



CHATHAM CREATED GEMS

Thomas Chatham
Chatham Created Gems, Inc.
San Francisco, California

My father, Carroll Chatham, first attempted to grow crystals in 1929, at the age of 15. This work took place in his house; he was trying to grow diamonds to start with, and he understood the physics required for the creation of diamonds. The only way he could think of recreating those conditions was to use explosives, which is what he did. The last experiment he did that really sealed all future experiments on diamonds was one where he dropped molten graphite with iron into a garbage can full of liquid nitrogen. His father then put his foot down and said that will be the end of this type of research. He then went into another area; the growth of emerald crystals. He was extremely interested in chemistry and mathematics and he excelled in those areas. These experiments that he carried out were at first a hobby, but it soon turned into one that guided the rest of his life. It took my father approximately five years to figure out how to grow emerald crystals. And, after he was successful, it took him three years to figure out what he had done to be successful. One of the things that he did learn from that was how to keep very accurate notes.

Just as a comparison, with the first furnace my father created, he was able to produce perhaps 5 to 10 carats of crystals in a period of, say, four to five months. Our current units in production are producing approximately one million carats of rough a year. One of the things few people recognize is that Chatham crystals always have 12 to 18 sides, whereas Gilson will always have six. It's not a big deal, but it is a different characteristic. The largest crystal we've ever grown is in the Smithsonian Institute; it's approximately 1,400 carats. There's another crystal 1,100 carats in the Harvard Museum. But it is not economically feasible; it took three years to grow those large crystals, and there's no reason to grow crystals that large. One of the things that many people have asked me is

whether or not we've patented this process. We have not. I'm glad we have not because the patents would have long since run out. It was decided not to patent this process because the product did not reflect what the process was. You can not look at the stone and figure out what we're doing.

In 1957 my father started trying to grow rubies. I joined my father in 1964 and began working with him on his efforts to grow rubies. We were not successful for several more years. It takes many years to get these things figured out in the laboratory. I think it wasn't until 1980, after over twenty years of research, that we felt reasonably confident in mastering the most important areas of any commercial endeavor in growing crystals, and that is our ability to project and control the color of the resulting crystals, the crystal habit of the crystal, and the quality of the crystals. We find we can effect one of those three things quite easily in most anything we grow; it's getting the combination to come together in such a way as to perfect the quality that commands the top prices in the naturally occurring gemstones. In 1975, we announced the growth of blue sapphires. And, although we weren't particularly happy with our initial results, we felt that since it was the first cousin of ruby, it would be nothing more than a few months time before we were able to perfect this crystal. A few months time has stretched into many years. We're bumping into significant differences in growing blue sapphire versus growing the ruby. One of the things we've had to learn--we were under the assumption that there was a chemical difference between the crystal that was light and the crystal that was dark. Kurt Nassau has now put together a definitive work on the causes of color in gemstones, and he has determined that color is not strictly a function of the chemical impurity. It's a particular phase of that impurity [e.g., Ferrous ion (Fe^{+2}) or Ferric ion (Fe^{+3})-ed.]. In 1982, out of sheer frustration with the blue sapphire--we wanted to reassure ourselves that we still knew what we were doing--we went to another cousin of ruby, and that

would be the orange sapphire, called Padparadscha, depending on whether you're selling it or buying it. We were very pleasantly surprised in the results that we got. To have a crystal crystallized in a color that is very close to what we were after on the first run is something that is extremely rare in laboratories, at least our laboratory--it borders on the area of miracles.

Natural gemstones are not particularly rare. They are found in the mantle area of the earth's crust, and the crystal growth that's going on there is enormous. The rarity factor, of course, comes into play because of where this crystal growth is taking place; we're talking about areas that are twenty to thirty miles beneath the surface of the earth. Man has been unable to get more than nine miles beneath the surface. So, these crystals that are growing constantly are out of our reach. What must happen is we must wait until the natural forces move these crystals that have grown in these lower areas up into the upper areas. Such an example would be a kimberlite pipe. It's unique for many reasons. Number one, the material that is found in kimberlite pipes is unlike material that is found in any other type of volcano. It is much denser than most materials because of its high concentration of iron and magnesium. Its crystal structure is unique in that it is extremely fine grain, which suggests a very rapid crystallization. Something else unique about kimberlite pipes, of course, is a minor inclusion of diamond. It has been theorized that these pipes, which are the only source of diamonds found in matrix, are the result of a very deep and sudden blowout of a material from deep within the mantle area. And it has been suggested that this took place in a matter of days.

The convection occurring in the mantle area deep below the surface of the earth causes certain things to happen which we can not recreate in the laboratory. We, in the laboratories, are not manufacturing gemstones; we are manufacturing an environment under which nature will grow gemstones. As you can imagine, regardless of how big our facilities are, they by no means can

come close to the huge areas of moving material that exist in this mantle area. It causes certain things to happen in the crystal structure which will be different. It seems that there are certain characteristics that will show up in man-made stones regardless of who makes them and what the stone is. I will now try and point out some of the important differences and what those differences mean to you. I feel there are three different areas that you should look at when separating a natural gemstone from one which is man-made. Number one would be the chemical impurities that are found in the compound of the material. The second would be the chemical impurities found in the structure of the crystal. Number three would be the chemical impurities that are found trapped between the growth layers of the crystal.

To give you an example of one of these impurities found in the compound, the structure of emerald is Beryllium Aluminum Silicate. Well, if you have a mineral of just those elements, it will be colorless. What you need is the chromium. The chromium is not part of the stoichiometric formula: $\text{Be}_3\text{Al}_2(\text{SiO}_3)_6$. However, the chromium comes in, kicks out a few of the alumina molecules, and through whatever causes it to happen, the crystal turns green. There are other things, however, that ride right along in the structure. These impurities that are riding along are causing certain characteristics to show up, which you are measuring with the various instruments. The thing that is affected, obviously, is the specific gravity of the material, the birefringence of the material, the fluorescence of the material, and the results of the spectrographic analysis of the material.

The next type of impurity that can be spotted are trace elements that are found trapped in the structure in that crystal. This is a little bit hard to conceptualize, and it's even harder to see, of course--there are no microscopes that can get down to this level. It is significant in a few areas. The beryl structure, for example, has what are called channels running parallel to the C axis. Every structure has room between the grouping of the atoms that

hold the crystal together, and material gets trapped in that room. The most common type of material found in these channels is water; actually, it is OH groups, but for all intents and purposes just call it water. This water is trapped in this area and is responsible for making some gemstones, and all gemstones that owe their origin to a hydrothermal environment, very susceptible to heat damage. It is due to the expansion of the water that is trapped in these channels, that fracture the crystal if it is heated.

The third type is the element of impurities that are trapped between the growth layers of the crystal, which are obvious. An example would be iron pyrite growing in emerald. Another example, characteristic of man-made gemstones, and one that is definitively seen a lot in Chatham crystals, would be platinum crystals, which incidentally, we don't charge extra for. Rarely do crystals grow perfectly. The molecules are building up in a such a way that they are skipping areas, and it will result in what is called, in crystallography, a screw dislocation. You don't think of it as a screw dislocation; you think of it as wispy veil-like feathers. These veil-like feathers are caused by the differences in the environment that we created, versus what is existing in the ground. I think it is of enough significance to point out here that it is a result of the convection differences in the growth areas. And I think that it's reasonable to assume that wispy veil-like feathers are going to always be present in man-made gemstones. You should know that the fingerprint inclusion that comes from the laboratory will have flux material inside the inclusions trapped during the growth, whereas the fingerprint inclusions in a natural stone, under high magnification, will be in a gaseous state, or at most filled with a liquid. Without knowing this, you could easily confuse the two. You must be able to separate these very similar-looking types of inclusions. One thing that is scary to me is a hematite crystal in a naturally occurring gemstone. I find it very confusing in regard to platinum crystals found in our emeralds, sapphires and rubies. It can be very dangerous to jump to conclusions. Another inclusion that has

been associated with only naturally occurring emerald is the three-phase inclusion, referring to the presence of a gas, a liquid and a solid crystal. This information should be fairly definitive, but I've seen it confused when people look at a two-phase inclusion in a Regency, or Union Carbide hydrothermal emerald.

Another example, which I know used to be relied on, was the intense color zoning in blue sapphire. The only other blue sapphire in existence was made by the flame fusion method, and it is not color zoned in this way. Unfortunately, our blue sapphire crystals are extremely color zoned. One of the reasons that we have not been able to put this stone on the market is because of this color zoning. Another problem that will soon come up is this: I have decided to start experimenting with burning the blue sapphire because I have found, through experiments, that it will remove the color zoning and makes the color of the stone more attractive. What this will probably do is to give it characteristics that are now being identified as existing in burned natural blue sapphire. And conclusions may be jumped at if you saw those characteristics and did not look beyond that.

It will never be easy to separate gemstones, and everybody basically has to learn everything they can about the profession they're in. I think it's been a relatively easy profession up until the 70's and 80's, and I know it's hard to catch up. I think that is what has caused a lot of controversy in the trade, because so many people have had to catch up and try to keep up with what we're doing and what other people are doing. It isn't becoming harder because we are trying to make it harder. It's becoming harder because we're learning more about what happens in the ground and the processes are becoming more sophisticated.



INVESTMENT FORECAST

Jean-Francois Moyersoan, MBA, F.G.A.,
G.G.

Gemstone Price Reports
London, England

My love is gemology; my job is banking. I'm a publisher of a newsletter, Gemstone Price Reports, where we as bankers also give our predictions on an annual basis. We have excellent people in our bank trying to find cycles in different types of investments. Cycle analysis cannot give you a level or a peak or a bottom; it can only tell you time periods where a peak or a bottom will be reached. I will give you the outlook that we have as a banking institution for 1983. Our investment recommendations for 1983 are based upon the assumption that inflation will pick up again in 1983. As far as the stock market is concerned, we think the stock market will make a new all-time high in 1983. We think that the stock market is in a major bull market and it will make highs this year. People will turn to the stock market as a hedge against inflation this time. It is, therefore, recommended that the stocks purchased are the ones with large assets behind them. For example, real estate stocks, oil stocks, timber stocks. As far as bonds are concerned, we are forecasting a decline from the middle of the year onward. So we would recommend you not buy any long-term treasury bonds, or any long-term corporate bonds. You can do it, but at the present stage from now until July; after that, be very careful because we think that the interest rate will go up after July this year. If you want really to invest in money market instruments, we suggest floating rate notes, or three-month T-bills because, as you know, T-bills usually keep up with inflation rates. As far as the precious metals are concerned, we also consider that a major bull market is taking place. The bottom in July last year did coincide with a 2½- to 3-year cycle in gold. This, coupled with rising inflation, will cause this major bull market. We also expect platinum and Palladium to sell at a premium to gold very soon. So, our recommendation: Buy on every major retracement. Normally, there's a retracement of between 33%

to 50% of all major moves. In all moves, bullish or bearish, you always have retracements. So you have to think it is important to buy more.

As far as the gemstone field is concerned, we think that this year will be a much better year than last year. You will probably see price appreciation in the major segments of the market of about 20% to 25%; in some cases, you will perhaps see appreciation up to 35% or 40%. The major appreciation will probably take place more in the second part of the year. In 1984, we forecast an acceleration of price appreciation for gemstones. So we can consider that 1984 will be a year of happiness for owners of different types of tangibles. 1985 will be the year where the bubble will probably burst. So a very good beginning of the year, where new highs will probably be reached; at the end of the year, or at the latest at the beginning of 1986, we anticipate a crash like we had before, a few years ago. So, from 1986 to 1988, be prepared to be very flexible because you will probably be going through an unprecedented crisis, much worse than the crisis we went through 2½ years ago. As far as the best candidates for gemstones, we think that top quality will be rewarded--in diamonds, in rubies, sapphires, emeralds, colored sapphires, tsavorites, red spinels and tanzanite. We are less bullish on Brazillian stones like tourmaline and topaz due to the very big problem of irradiation and so forth, and their availability--or better said, their lack of rarity.

Collectibles will probably also appreciate in their best qualities because it will follow the category of tangibles. The problem with fine paintings, like the problem we have now in this industry, is liquidity. And so I think we should consider investment in gemstones like investment in real estate or collectibles because, unfortunately, the element of liquidity is not yet present. What are the criteria for the selection of gemstones? If you want to buy for long-term investment, I would think that you will see most appreciation in the top quality because there you have rarity. It's like we saw flawless diamonds in the past cycle; they went up

very fast because of the rarity factor. More and more dealers were ready to bid for these stones. If you have something which is very common, no dealer will be interested in buying it from you.



APPRAISAL ETHICS

Elly Rosen, F.G.A., G.G., ASA
Independent Jewelry Consultant
New York, New York

What is a gemological appraiser? There are two things: there's a gemologist and there's an appraiser. I'll deal with gemology first.

We in the United States have convinced ourselves, as opposed to every other appraisal profession, that gemology is an exact science. Other appraisers have to have on their appraisal forms that they do not guarantee identification or authenticity because there are too many problems and possibilities. The museum has to send in a scientist to analyze the pigments of a painting, for example, and the appraiser simply isn't capable of doing that. But we in gemology, we are above that. We have a science; we can identify. I think we all know today that the science is getting a little out of hand--new treatments of gemstones, new finds being made of different varieties, different species, different colors that never existed before. Now, gemology is a science of deductive reasoning. It works on a very simple principle: you have ten possibilities; if you can eliminate nine of the possibilities, it's the tenth. But, if you don't know all of the possibilities, how do you make a reasonable conclusion? Gemology by definition means the study of gemology. I will venture to say that when one ceases to study gemology, they cease to be a gemologist. Certainly in the situation where you're not really sure about an identification it comes down to the question, "What's more important--the client thinking that I don't know something, or my giving them an honest opinion?" I think one has to decide that the client is entitled to what they came for: an honest opinion. If we

consider ourselves professionals, we have no problem in telling a client that we have to consult with some other person, that this is not our area of specialization.

Being a gemologist is one thing; knowing gemstones is another thing. There's valuation and evaluation in the appraisal field. Valuation is setting a dollar value. Evaluation is grading the material, deciding its proper place in the market. Pricelists are very nice, and fortunately these days we're getting more and more pricelists. But pricelists don't cover everything, and you have to know where that pricelist has shortcomings. You have to know how to use it; you have to be in the marketplace. Knowledge of gemology is not knowledge of evaluation. Where one studies valuation, one not only studies the cost of stones, and the IRS, and insurance companies; one studies theory--theory of authentication, theory of identification--and responsibility to the client. They learn every possible way in which that piece of paper they're signing can somewhere down the road hurt somebody. We as appraisers have the power to destroy people's lives. I'm sure we have all seen these bags of Australian sapphires, worth maybe \$400.00, with certificates of appraisal saying they are worth \$40,000.00, and that get sold or traded for something worth \$20,000.00. Certificates of appraisals signed by these unthinking, irresponsible individuals who call themselves appraisers. So the question is: Are we a serious profession? Do we take ourselves seriously? The profession of gemology as it relates to gemological appraising is as yet very much unrecognized as a profession. I mean, frankly, we are pretty low on the list of those whom the consumers trust. The industry hasn't exactly done all that it could possibly do to make the consumer want to trust us. Are we going to say to the community at large, "respect us and we will help you"? Or are we going to continue on a daily basis to give them reason to feel that there's no reason that they should trust us, and that there is no honor among gemologists? Either there are qualifications for what we say we can do, or there are not.

The Accredited Gemologists Association is putting together a very solid certification program. It's going to require a lot--a lot of re-education, a lot of sitting for things like courses, and traveling to take them, and putting out money for courses. And it's going to have a title at the end of it: Master Gemologist Appraiser (MGA). The AGA is trying to establish gemological appraisal standards. In order to have such standards, I must say, we have to formulate policies. We have to formulate rules and codes of conduct which people have to prescribe to, from which there can be no deviation, and which will apply equally to everyone. I will present some considerations, then during the next few months we have to hear from you on how you feel about these particular items because ethical questions are certainly debatable (to a certain degree within limitations) among reasonable people. Obviously, you have to consult; no one knows the price of everything. So sometimes you have to consult. We have to set down in our code of ethics how one goes about consulting. So we need feedback on that--what your opinion is of the proper way to consult. But we

want to hear from you on those rules. We don't want to dictate rules. Fees have always been a big problem. There are still many people who charge a percentage of value rather than a flat rate. It's a sore point with some people, but we have to deal with it.

Another very important question is one of omission of information. If one has learned during the course of an appraisal assignment certain information regarding the item, do they have to disclose what they learned? Or can they choose because of what their client wants--to disclose certain information and not to disclose other information. An appraiser has certain obligations to their client, but they have a greater fiduciary responsibility to an unknown future third party who'll make use of that appraisal. Your client is simply the person you are writing the appraisal for, who tells you which value they're looking for: wholesale, retail, fair market. Then the appraiser has to do what is correct. And what the client wants has nothing to do with the result. If you learn something that affects the value, it had better be in that report.



NEXT QUARTERS ISSUE WILL PRESENT:

COLOR SCAN, by C.R. "Cap" Beesley

GEMDIALOGUE, by Howard Rubin

GEM COLOR GUIDE, by James Sharp

AN APPRAISAL GUIDE, by David Shoup

MEMBERSHIP MEETINGS

TUCSON GENERAL MEMBERSHIP MEETING

T. Tashey

At 8:00 p.m., on Friday, February 11, 1983, the Accredited Gemologists Association held a general membership meeting at the Palo Verde Plaza Holiday Inn in Tucson, Arizona. The meeting was called to order by the President, Mr. Joseph Tenhagen. Mr. Tenhagen acknowledged and introduced to the members Dr. Joel Arem, second President of the Association; Mr. Tony Bonnano, third President of the Association; and Mr. Marvin Miller, past Vice President of the Association. He then introduced Mr. Thom Underwood, President of the San Diego chapter, and Mr. Tom Tashey, Secretary of the Association, and thanked them both for their work in coordinating the Association's Tucson '83 Conference on Color. Mr. Tenhagen gave a special thanks to Myriam Tashey for her efforts in seeing that the conference proceeded smoothly.

Mr. Tenhagen then introduced Mr. Neil Cohen, the Association's Treasurer, who explained the increase in dues from \$20 to \$100 per year. This increase was decided on by the Board of Directors, as provided in the new Constitution. The Board felt that such an increase was necessary to raise the status of the Association from that of a club to one of a professional organization. Previously, nearly all of the dues had gone towards the publication and mailing of the newsletter. With the increased funds, the Board hopes to improve the quality of the newsletter, advertise for new members in the trade magazines, and promote the Association in such a way that it becomes a strong and respected voice for professional gemologists in our industry. Mr. Cohen also pointed out that, up to now, all of the work that has been done for the Association has been voluntary. Eventually, with the continued growth of the Association, we will probably need to hire people to be better able to serve the needs of the Association's members.

Mr. Cohen turned the meeting back to Mr. Tenhagen, who then discussed the new M.G.A. and Accredited Laboratory programs. He pointed out that these

programs should not be thought of as a change of direction for the Association. Because of the seriousness of the problems affecting our industry due to many inaccurate and faulty appraisal reports, it was felt by the Association's Board that one possible way of policing the industry would be to establish a meaningful title, to be earned through a rigorous testing procedure. As many of the Association's members earn their livings from the appraisal profession, and as the Association has been in existence since 1974 and has enjoyed the respect of the jewelry industry, it was felt that the AGA would be a natural choice as the proper organization to tackle setting up such a program. But these programs are separate from the general membership of the AGA and are only for those members who wish to participate. That is why they are funded separately as well, because it would not be fair to take money from the general fund to support these programs.

Mr. Tenhagen then asked if there were any questions about the new Constitution and By-Laws. He explained how, under the new system, the Association is really controlled by the sixteen Regional Governors. They set the Association's policies, and the Board of Directors carry out those policies. These Regional Governors eventually will be voted into their terms of office by the officers of the chapters in their particular regions. Thus, the need to develop strong chapters; but for their first term, they will be appointed by the Association's President. The President is also looking to appoint members to chair the several standing committees of the Association. Mr. Tenhagen said there was a lot of talent in our organization and that he wants to put that talent to work for the Association. Mr. Tenhagen said he felt that the Association has the potential to become a significant voice for the professional gemologist in the jewelry industry. He discussed the similarities and differences between our organization and the American Gem Society (AGS) and said how their membership is largely limited to retail jewelers. He pointed out that there are a great many gemologists in our industry who don't work in retail stores, and how the AGA can satisfy the

need of those people who wish to belong to a professional organization. He stated that the AGA is not out to "knock" other organizations, that he felt our members were the "cream of the crop," and that in time, as our designations become more known and accepted, the cream would rise to the top. Along these lines, he cited the GIA prepared entrance exam for the M.G.A. program as an example of demonstrating skills, to add credibility and to make our designations meaningful. Similarly, the course 1A of the M.G.A. program will be taught by university professors. He also pointed out that the Accredited Laboratory people must sign a notarized statement saying they don't object to unannounced visits from authorized AGA personnel to check their laboratory and equipment. Once the M.G.A. program is established, there will be an independent third party who will periodically send jewelry items to these people for appraisal, and copies of their reports will be sent to the M.G.A. and Accredited Laboratory Committee and to the President for review. If these appraisals are not up to par, they will be sent more items, and if it is felt they are not worthy of their M.G.A. designation, they will have to appear before the Committee to defend their reports. If the Committee deems it necessary, they will have their designation withdrawn. This is all needed to add credibility to our designations, and if people find it offensive, then our programs are simply not for them.

At this point the business part of the meeting was adjourned and we had a very interesting travelogue and slide show by Dr. Joel Arem entitled "Gem Localities Far, Far Off the Beaten Track." Dr. Arem lectured and showed slides he had taken on two trips he made in 1977. The first was to Mexico, where he visited an extensive Peridot deposit; a closed lead and zinc mine containing phenomenal crystals of gypsum, referred to as the "Cave of Swords;" a Labradorite deposit unusual for its large-size crystals of lemon yellow color; and a Fire Agate deposit. His second trip was to the Dominican Republic, where he examined Amber, which he has a particular fondness for because of its insect inclusions; and an unusual deposit of

the mineral Pectolite, found in massive form with an attractive color suitable for polished cabochons. Dr. Arem finished his presentation with one of his famous Mineralogical Symphonies which he produced in 1973.



WASHINGTON, D.C. CHAPTER

Catherine Cleiman

The first 1983 meeting of the Washington Chapter of the Accredited Gemologists Association was held on the evening of January 3rd. Members present included: Tony Bonnano, F.G.A.; Cathy Cleiman, F.G.A.; Michael Cowing, F.G.A.; Dale Farringer, G.G.; Karen Ford, F.G.A.; Helen MacLeod, F.G.A.; Nanette Monmonier, G.G.; Marvin Miller, G.G.; Julie Needle, G.G.; Tom Terpilak, G.G.; and Theresa Zook, F.G.A. Associate member Betty Duke attended. Guests included Danny Duke, Claude Aoussat, Marsha MacIntosh, Bob McClain, Kenny Bonnano and Bernard Zook.

The evening began with Mr. Miller distributing a form entitled, Appraisal Retail Mark-Up Survey. As he mentions in the introductory paragraph, "many systems are available today to help us arrive at an accurate wholesale price, but what is a fair and realistic retail mark-up price?" Of special concern to us, of course, is the Washington area. Members are asked to fill in what mark-up percentages they used. The form listed a range of wholesale price figures from under \$500 to over \$20,000. Separate columns were provided for diamonds and colored stones.

The problem of correct lighting was brought up by Mr. Farringer. Mr. Ted Themelis, our special guest speaker from Gem Lab, Inc., explained the principles involved in true "north daylight" and the problems incurred by industry's attempt to recreate this phenomenon. He illustrated with a chart how different Kelvin temperatures will affect certain wavelengths. North daylight has a temperature of approximately 6500° Kelvin. Mr. Bonnano said he uses a

daylight circleline fluorescent tube and an incandescent bulb, then both together. Theresa Zook added that one must also consider power source fluctuations, the number of lights being used, their angle and distance from the stone.

Theresa Zook, who is the current Chairman of the Inter-Society Color Council's Color in Gems Committee, is known to the membership for her involvement in the exploration of universally accepted color standards. She is especially concerned as to how a system of color standards could be incorporated for gemological purposes. Those interested in learning more about her efforts and in obtaining additional information on color standards and printed color reference materials should contact Mrs. Zook at 2104 Wakefield Street, Alexandria, VA 22308.

Mr. Ted Themelis, President of Gem Lab, Inc., manufacturers and suppliers of gemological instruments, was our guest. For his presentation he brought two of his most advanced microscopes and his fiber-optic spectroscope. Clearly the most popular piece was his bi-directional, stereozoom "Immersionoscope". A unique feature of this microscope is that in the horizontal position, gems can be examined immersed in a heavy liquid inside a fused quartz cuvet, which is mounted on a fully adjustable base. In the vertical position gems can be examined using a neon ring, dark field illuminator. This illuminator can also be attached to the microscope pod to serve as an overhead light source. A wealth of attachments are available including a polariscope, conoscope, dichroscope, fiber optic illuminators, micrometer dial gauge (or micrometer disk reticle), and photographic equipment to make this a truly magnificent piece.

His other microscope was a more standard stereozoom (Zeiss optics) variety which was fitted with a complete photographic assembly. It also had Mr. Themelis' new dark field adapter with a chrome cone. This cone causes light entering from below to bounce off it onto the side mirrors and back up through the stage opening to the stone. It can also be rotated to illuminate

different parts of the stone.

Prices for all his microscope assemblies vary to meet each customer's needs and/or specifications. He says that there are 26 different microscopes that can fit on his stage. Unfortunately, time prevented us from discussing his spectroscope at any length. It consists of a prism spectroscope that uses a movable fiber-optics system for viewing stones in either reflected or transmitted light. The spectroscope can also be detached to be used by hand.

Members interested in Mr. Themelis' instruments may write to him at:

Gem Lab, Inc.
P. O. Box 212
Rego Park, New York 11374

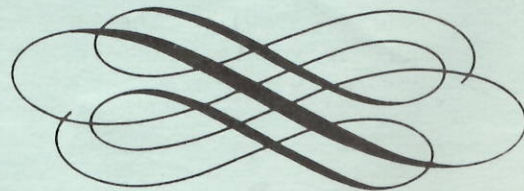
or call him at 212/335-5087.

Our next meeting will be held on Monday, April 4th, at 7:30 p.m. at 8600 Fenton Street, Silver Springs, MD 20910. Phone 301/588-7770.

Six members from our chapter--Tony Bonnano, Marvin Miller, Karen Ford, Bill Dougherty, Ginger Beers Morgret and O. Dee Calloway--attended the AGA Conference on Color symposium that was held in Tucson on February 10th and 11th. Three members--Mr. Bonnano, Mr. Miller and Mrs. Ford--will discuss highlights of the conference with us.

Bob McClain will share his expertise on genuine South Sea pearls and show members his magnificent collection.

Elections for this year's officers will also be held. Please plan to attend!



NORTHERN CALIFORNIA CHAPTER

Lise A. Wurm

January 19, 1983, the Northern California Chapter of the Accredited Gemologists Association met at the Cathedral Hill Hotel. Six people present were nominated for local chapter offices. They were:

- President - Joseph O. Gill
- Vice President (administrative) - Thomas Vigil
- Vice President (program director) - Thomas Paradise
- Corresponding Sec. - Starla Turner
- Meeting Secretary - Lise Wurm
- Treasurer - Julie Whitton

Mr. Thomas Chatham presented an informative slideshow. The discussion covered crystallization in nature and in the laboratory with the advantages of selling laboratory-created gem materials. All present enjoyed his sharing personal and family trials and achievements in the discovery and development of flux-grown gem materials. Following the meeting many stayed for coffee and conversation.

Next Meeting: March 16, 1983, 8:00 p.m.
Cathedral Hill Hotel
Van Ness Ave. @ Geary St.

On the Agenda for the next meeting:

Jean De Mouth-Smith
Curator of Gems & Minerals
California Academy of Sciences at
Golden State Park

The title of her talk will be "Organic Gems," accompanied by a most interesting slide presentation.

1. Election
2. Courtney Balzan and Darleen Freeman review the national meeting of the AGA in Tucson
3. Speaker & Topic

LOS ANGELES CHAPTER

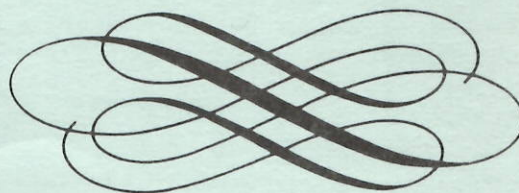
Michelle Jeand'Heur

The Los Angeles Chapter of the Accredited Gemologists Association held a meeting at the Palm Masonic Lodge at 1:30 p.m. on March 20, 1983.

Vice President Frank Bonham gave a brief description of the Tucson meeting. He also reported on the chapter's Board meeting held with Mr. Tenhagen, National President.

Following the business meeting, Mr. John Koivula of the GIA shared some of his most recent and spectacular slides on gemstone inclusions. Especially interesting were slides of insect inclusions in Amber, taken with a new lighting technique he has developed to better show off the insects. After his presentation, he discussed the progress being made in publishing a new series of books on mineral inclusions in conjunction with Dr. Edward Gubelin of Switzerland.

The next meeting is scheduled for May 22, 1983.



NEWS ITEMS

ANNA MILLER HONORED IN TUCSON

Anna Miller, G.G., ASA, was named Woman Gemologist of the Year by the Association of Women Gemologists (AWG) at their general meeting in Tucson, Arizona, on February 9, 1983. Miller co-founded the AWG with Elaine Baker, G.G., ASA, last year in Tucson, and the Association has grown to over 100 members worldwide. Forty members were in attendance to honor Miller with the award, which cited her for "Service to AWG and Devoted Effort in the Field of Gemology."

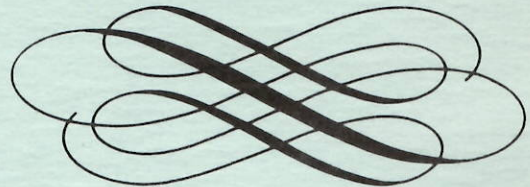


GIA TO HOLD GEMOLOGIST UPDATE SEMINARS

GIA has announced plans to hold three 2-day seminars this year, to give their graduates the opportunity to hear and see the latest gemological developments in regards to synthetics, treatments, and sources of gemstones. Leading authors of Gems and Gemology have been chosen to present the most challenging identifications that face the gemologist today. The dates and locations are:

May 23 & 24 GIA Santa Monica, CA
July 28 & 29 GIA New York, NY
Aug. 11 & 12 GIA Santa Monica, CA

The cost of the two-day seminar is \$250, with a 20% discount for GIA Alumni Association members. For more information, or to request a syllabus, contact Jill Hobbs at the GIA Alumni Office, Santa Monica, CA. Phone (800) 421-7250.



HEALTH INSURANCE

Neil Cohen

You are all aware of the escalating costs of health insurance and the difficulty of obtaining good coverage unless you are part of a large group. AGA is endeavoring to obtain a first-rate extensive health plan that would be available to our members at rates available only to large group plans. It is important that we know how many of our members are interested, since the amount of people influences the quotes we get from insurance companies. Please take a minute and fill out the questionnaire at the back of this issue. This is not binding in any way and is only a survey.



NEW AGA MEMBERS

Biffer, Howard N., G.G.	-	Stuart, Florida
Brooks, Loretta J., G.G.	-	Sausalito, California
Brumbaugh, Terry, G.G.	-	San Francisco, California
Caldwell, Brenda J., G.G.	-	Tucson, Arizon
Hoover, Donald B., F.G.A.	-	Lakewood, Colorado
Keating, Judith, G.G.	-	Westport, Connecticut
Leonardo, Clare L., G.G.	-	Rochester, New York

ASSOCIATE MEMBER :

Burgess, Jack A. Jr., GIA - Hilton, New York

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