AGA
CORNERSTONE

AN INTERNATIONAL NEWSLETTER

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ACCREDITIED GEMOLOGISTS ASSOCIATION

A Non-Profit Organization Established In 1974

To Develop and Promote Professional Standards in the Practice of Gemology

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FROM THE PRESIDENT

The nomination period for the election of officers ended September 15th. The voting period starts October 15th and terminates December 15, 1983. I sincerely urge all of our membership study the ballot and vote your conscience. The nominations committee will submit to the international secretary a proposed ballot and a list of every member nominated for elective office. Mr. Marvin D. Miller is chairman of the nominations committee. The other members include Karen Ford and Catherine Cleiman. The international secretary will mail the ballots to the membership with instructions by October 15th.

We are well into our planning stage for our Tucson conference, 1984. Mr. Tom Tashey and Mr. Thom Underwood have again accepted this challenging assignment. Our plans are to make Tucson the most interesting, intensified learning experience of the year. We will be meeting at the Palo Verde Plaza Holiday Inn again this year. The details of this fine conference will be made available under a separate mailing to the membership.

In July at Silver Springs, Maryland, and August in Los Angeles, we designated thirty (30) Master Gemologist Appraisers "M.G.A." I am proud to say 3 of the Board of Directors and 27 members took this intensified 3-day course and were awarded the M.G.A. designation. This designation is the strongest and will be the most respected in the industry. All of the M.G.A.'s have been tested both academically and practically. As President of the AGA, I am proud to associate with members of this high caliber. I have said many times as professional Gemologists we should not hesitate to demonstrate our hard-earned skills. I urge all of our members who qualify to enter the fine program. I believe its rewards will be sizeable.

It is with great pleasure that I can announce that Mr. Donald Palmieri, M.G.A., has accepted the chairmanship of the international board of examiners which will govern and administrate this program. I feel sure under his fine and able guidance, this program will grow and mature and have the respect of our entire industry.

FROM THE EDITOR

Welcome to the AGA CORNERSTONE. Special thanks go to Virginia Beach member James Jangl for his suggested name. I think the name is appropriate for several reasons. My hope is that with time the publication can mature along with the Association to the point where it is a solid foundation of information supporting a secure structure. In order to attain that goal, however, we certainly need input from the general membership in the form of articles, news items, and even opinion. This quarter's issue was rather sparse so I have included an article reprinted from the Modern Jeweler. It is well written, informative and timely, but I would still prefer to publish original material from our own members. Please try to make the time to contribute.

The 1983 Membership Directory was finally published and mailed to all members in September. Our sincere apologies to any of the members who had errors in their listings (we know there were several). Next year's Directory will come out in April, and a form will be sent along with next year's dues statement, in January, for you to fill in how you would like your listing to appear.

Election ballots for next year's Officers were mailed to all <u>full members</u> on October 14, 1983. We encourage everyone to exercise their privilege of voting for the candidates of their choice. The completed ballots must be returned to this office no later than <u>DECEMBER 15th</u> in order to be counted.

(Continued on page 4)

Financial Statement
of the
ACCREDITED GEMOLOGISTS ASSOCIATION
For the year ended June 30, 1983

September 22, 1983

Mr. Neil Cohen, Treasurer
Accredited Gemologist Association

I have compiled the accompanying statement of cash receipts and disbursements of the Accredited Gemologist Association, for the year ended June 10, 1983, in accordance with standards established by the American Institute of Certified Public Accountants.

A compilation is limited to presenting the form of financial statements information that is the representation of management. I have not audited or reviewed the accompanying financial statement and accordingly, do not express an opinion or any other form of assurance on it.

Roger A. Jacobs, P.C.
Certified Public Accountant
164 East Center Street
Manchester, Connecticut 06040

Statement of Cash Receipts and Disbursements
For the year ended June 30, 1983

Cash Balance, July 1, 1982		$ 8,375
Receipts:		
Dues and fees	42,770	
Master sets	9,600	
Interest	4	52,374
Disbursements:		
Master sets	13,800	
Office, printing, telephone and secretarial	15,080	
Subscriptions	1,700	
Refunds	64	
Conventions, meetings and seminars	10,714	
Services	700	
Advertising	1,470	
Payments to the G.I.A.	5,400	48,928
Cash balance, June 30, 1983		$ 11,821
The cash balance is made up of:		
Checking - Hartford		(4,303)
Checking - Miami		1,124
Savings		15,000
		$ 11,821

(Continued on next page)

Notes to Financial Statement
June 30, 1983

1) Comprehensive Basis of Accounting

The Organization's policy is to prepare its financial statement on the basis of cash receipts and disbursements. Consequently, revenue is recognized when received rather than when earned, and expenses are recognized when paid rather than when the obligation is incurred. Accordingly, this financial statement is not intended to present results of operations in conformity with generally accepted accounting principles.

2) Tax Status

The Organization has applied for tax exemption under Section 501(c)6 of the Internal Revenue Code.

**GIA OFFERS COLORMASTER UNIT **
TO AGA MEMBERS FOR $1,975.00

The Association's Board of Directors has concluded a contract with the Gemological Institute of America whereby AGA members may purchase the GIA ColorMaster at the substantially reduced price of only $1,975.00.

As well, the GIA has agreed to finance purchases of the ColorMaster to our members with as little as $200.00 down, and up to 24 months of payments at 18% interest. Three such plans are presently available, each with a down-payment of $200.00

A) 12 months at 162.75/month (total finance charge of $178.00)
B) 18 months at 113.28/month (total finance charge of $264.00)
C) 24 months at 88.63/month (total finance charge of $352.00)

The Association encourages its members to take advantage of this offer by contacting either the GIA directly (Gem Instruments Corp) or International Headquarters.

(Editor's Notes - Cont'd from page 2)

Plans are well underway for next year's February Conference in Tucson. Again it will be held in the spacious Palo Verde Plaza Holidome. Be sure to check the tentative schedule printed in the center section of this issue, and if you are at all interested in attending, please send in a short note advising us of your interest. This will help us in our planning, and we will make sure that you receive future information about this event. We plan on making it as interesting and rewarding as possible. We hope you will be able to participate.

A NEW PROFESSION. . .A NEW PROFESSIONAL
Donald A. Palmieri

That's just what the AGA did this past summer. They created a new profession with an old name. One that jewelers, gemologists and all people interested in honest appraisals and evaluations of jewelry and gemstones can be proud of. One that will be recognized by other professions that depend on jewelry appraisers, like the legal, banking and insurance industries. A profession that can guide and police its professionals so as to be an honest, unbiased, uncompromising, judge of the value of some of the most important and valuable items of personal property one can own. If you thought such professionals existed and that such a profession or organization existed before August 18, 1983, then you were right and wrong. The professionals did and do exist. To date, they have been guided by their own conscience, good judgement, gemological knowledge and grasp of the market-place. The only problem was how to recognize an honest and knowledgable appraiser. Unfortunately, many who call themselves jewelry appraisers lack one of the two key ingredients. Knowledge was hard to measure because few appraisers' work is ever seen except by those who haven't even the knowledge to recognize good from bad. Honesty and integrity are somewhat easier to spot, but usually after its too late and someone has already been burned.

The "Appraisal Mess" has been brewing for a long time. At least for many decades and certainly before modern gemology of the early fifties. Unfortunately, as the industry was forging ahead (reluctantly) with major gemological breakthroughs, such as: quality grading of diamonds and later color communication of gemstones, detection of synthetics, and revelation of color enhancement in gemstones most thought to be the natural color from unearthed crystal to cut stone; no one seemed very concerned with the abominable blunders of the jewelry appraisers. As a matter of fact, until the 1981-82 JCK investigation and April '82 story "What can be done about the appraisal mess?," the best the subject of appraisals could get from industry leaders was mumbled lip service. It wasn't such great foresight of JCK that got the attention of the industry, but the outside press and government investigation agencies such as the Federal Trade Commission, the S.E.C., the F.B.I. and regional law enforcement agencies that kept stumbling on case after case of outright fraudulent appraisals performed for taxshelter agents, land swap scams, gem investment scams and countless other reasons that gemologically trained individuals signed their name to grossly inaccurate, fraudulent and worthless certificates and appraisals on gems and jewelry. Unfortunately, the "appraisal mess" continues. The perpetrators are becoming increasingly more cunning and deceitful.

By Spring of 1982 many organizations had vowed to clean up the mess. At the conclusion of an appraisal conference in San Diego, I met with AGA President Joseph W. Tenhagen and ISA President Maurice Frye and as President of Gemological Appraisal Association, offered the suggestion that the three organizations work together to bring about some positive changes in the industry in teaching, certifying and policing appraisers. We all agreed that in principle, it was a good idea and justified further investigation and consideration to form such a coalition. As time passed we all began working on our programs. The "Master Gemologist Appraiser" designation, brainchild of AGA Vice President Neil Cohen, was set into place as a priority one project by AGA President Joe Tenhagen by the end of 1982. Officially, the AGA Tucson meeting in February 1983 commenced phase one of the M.G.A. designation program. A gemological written test was given to 48 members at that time. This test was developed exclusively for AGA as an entry level test to the M.G.A. program, by the Gemological

(Continued on page 6)

Seated, left to right: N. Cohen, S. Bower, J. Tenhagen, K. Ford, D. Levison, Standing, left to right: D. Palmieri, C. Beesley, J. Dolleslager, M. Zibman, J. Seaman, W. Benedict, M. Miller, J. Coker, L. Bannon, J. Hurwitz, A. Bonanno, S. Blass, J. Kelsey.

Institute of America. Through the continued tireless efforts of Tenhagen, Cohen, and Tom Tashey, AGA Secretary, the program began to take shape and by Spring of '83 I was asked to join with the Board in developing the course, manual and M.G.A program as Chairman, International Board of Examiners. I accepted without reservation, as I saw the honest "blood, sweat and tears" effort these fine professionals were making.

Thanks largely to the unselfish and tireless efforts of Tenhagen and Cohen, AGA has become the first professional organization, open to all members of the industry who qualify, to teach, test (complete academic and practical testing including identification, weight formulation, quality grading, evaluation and report writing) and certify, thoroughly trained and experienced gemologists and appraisers.

The cost is high, the standards are the most rigid, but the most fair in the industry, the test is tough, the policing will be uncompromising, but the rewards will be bountiful.

All M.G.A.'s will be listed in an international directory which will be distributed to banks, law firms, insurance companies and local and

Seated, left to right: R. Rosenblatt, J. Lauri, M. Ginsberg, D.L. Richardson, B.J. Caldwell, D.M. Forde, C. Merrell, M. Adams. Standing, left to right: A. Miller, C. Zawacki, C. Balzan, T. Underwood, R. Base, T. Tashey.

national media.

This designation will indicate to others that you have proven yourself both practically and academically as a true professional appraiser and gemologist.

The organization has strongly recommended that all who successfully qualify and receive the M.G.A. certification, drop the initials behind their name indicating their gemological degree (G.G. and/or F.G.A.) and replace them with the new designation of M.G.A. This recommendation was overwhelmingly received by the initial designees.

The qualifications and approximate costs are as follows.....

1) Must be a graduate of GIA (G.G., Graduate Gemologist) or the Gemological Association of Great Britain (F.G.A., Fellow, Gemological Association) or equivalent.
2) Must be a member of AGA (Accredited Gemologists Association). Annual dues: $100.00
3) Must have five (5) years appraising experience in the jewelry industry. (May be waived in exceptional situations).
4) Must have an accredited lab or work

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for a firm that does. Designation valid only while appraiser has constant access to lab. Lab Accreditation fee: $200.00

5) Must take the M.G.A. gemological entrance exam (prepared exclusively for AGA by GIA). Exam fee: $25.00
6) Finally, take the M.G.A. course, written and practical tests in residence. M.G.A. Course & Test fees: $300.00

Note: No one will be accepted in the M.G.A. program who has a proven reputation for unethical behavior as an appraiser or whose reputation or business practices would discredit the integrity of the AGA M.G.A. program, or fellow M.G.A's.

The first program was held in Silver Spring, Maryland, at the facilities of Columbia School of Gemology, owned and operated by Antonio Bonanno with Karen Ford, both M.G.A. graduates. The first group was tested July 18, 1983. The Silver Spring program yielded sixteen (16) Master Gemologist Appraisers. They are: Beesley, Benedict, Bonanno, Bower, Cohen, Coker, Dolleslager, Ford, Hurwitz, Kelsey, Levison, M. Miller, Palmieri, Seaman, Tenhagen and Zibman.

The recent California Graduates were tested August 22nd at GIA Headquarters in Santa Monica, with classroom space and instruments graciously provided to AGA by GIA. The candidates and M.G.A. instructors were pleasantly astounded to find a cocktail reception waiting at the end of testing, given by the GIA. In attendance were Chairman of the Board, Richard T. Liddicoat; President, Glenn Nord; and most of GIA's department heads. During the reception, Mr. Liddicoat, asking the group's attention, gave a short congratulatory speech to the group, singling out AGA President, Joseph Tenhagen, and his staff for positive moves in cleaning up the "Appraisal Mess". Liddicoat also reaffirmed GIA's longtime position of greater professionalism through education and knowledge. An exhilarated group of M.G.A. candidates dispersed to L.A. International to return home and await the results of their exhaustive efforts. The Santa Monica graduate Master Gemologist Appraisers number fourteen (14) and are as follows: Adams, Balzan, Base, Caldwell, Forde, Ginsberg, Lauri, A. Miller, Merrell, Richardson, Rosenblatt, Tashey, Underwood and Zawacki.

Future candidates will be required to bring their own microscopes, refractometers, polariscope/utility lamp and all small personal instruments, charts, reference material, etc. Some major instruments will be provided. As with all M.G.A. candidates, you will take the Farnsworth-Munsell 100 hue test for color discrimination. This information, once analyzed, will be invaluable for appraisers to know their color discrimination limitations, not only for appraising, but for buying stones in the color range where the individual has a perceptual deficiency. If you are interested in a future M.G.A. program or more information you may write or call:

Donald A. Palmieri,M.G.A.,Chairman,
International Board of Examiners
Suite 102 Stevenson Building
666 Washington Road
Pittsburgh, PA 15228
(412) 344-5500

A closing point of interest. At the 1984 AGA meeting in Tucson we will conduct an official M.G.A. installation ceremony and GIA President Glenn Nord (schedule permitting) has agreed to give the keynote address.

A complete listing of these thirty (30) M.G.A.'s, along with their Accredited Laboratories is included at the back of this Cornerstone. - ed.

Seated, left to right: J. Hurwitz, A. Bonanno, J. Dolleslager, N. Cohen, S. Anderson. Standing, left to right: T. Tashey, T. Underwood, F. Bonham, C. Zawacki, J. Tenhagen, J. Kelsey, D. Palmieri.

AGA TESTS
FOUR COLOR MATCHING SYSTEMS

Donald A. Palmieri

Twelve members of the Accredited Gemologists Association (ten of which are MGA's) concluded seven months of preparation for a test of the four major color matching systems for gemstones.

It all began at the 1983 Tucson Gem Show when four AGA members assembled to test the Color Guide, Color Scan and Gem Dialogue color systems. After a full day of testing, the graders determined that for the test to be of practical and scientific value and to be more comprehensive of all available systems, further preparation and testing was needed. It was decided that the results of the test would not be released until further study of the conditions could be made. After several meetings, the AGA board arranged for a special session for a select group of AGA members who had entered the MGA candidate program at Tucson in February, to meet in Santa Monica in June 1983. All those invited to participate (at their own expense) had attended the Tucson '83 conference on color, and had been exposed to Color Guide, Color Scan and Gem Dialogue by their respected authors. Approximately twenty members crowded into a Santa Monica motel room to be briefed once again on Color Scan and Color Guide at the June gathering. That session was followed with a three day intensive (36 hour) course at the GIA on Color Master. The program, one of the very first of its' kind, was presented by GIA's Janice Mack exclusively for the twenty AGA graders in preparation for the September test which was to include Color Master. After many more meetings and consultation with noted color scientists, the ground rules and procedure was set. The test would include no less than ten and no more than twenty graders. The date was set.

(Reprinted from the October 1983 issue of the DIAMOND MARKET MONITOR)

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TUCSON 1984

The Conference will officially begin with a Welcoming Cocktail Reception at 7:00 P.M. on Sunday, February 5, 1984, in the Holidome. This will be a chance for members to meet with old friends, to renew acquaintances made last year, and to talk with leaders of the industry who will be presenting programs on Monday and Tuesday.

The speakers have not yet been finalized, but they will be experts in their fields. Planned topics to be covered will include: The latest in Synthetics, Gemstone Treatments, Identification Techniques, Natural Colored Diamonds, Diamond Recutting and Repairs, Pearls, Jade, and Antique Jewelry. Tapes will be made of each speaker's lecture and will be made available to members for a minimal fee.

On Monday and Tuesday mornings there will be Breakfasts for the Board of Governors and the Master Gemologist Appraisers, respectively.

Buffet Luncheons in the Holidome will allow people to relax between morning and afternoon sessions on both Monday and Tuesday.

The General Membership Meeting will be held on Monday evening at 8:00 P.M. The program will include installation of 1984 Officers, followed by a Business Meeting.

On Tuesday and Wednesday evenings from 5:00 P.M. till 10:00 P.M., there will be a Gemological Equipment Display area, where members will be able to examine the latest in equipment from worldwide manufacturers.

Time will be allocated for Association Committees which need to meet, on Wednesday through Friday.

The Association will again offer the M.G.A. Course and Testing program on Wednesday, Thursday, and Friday, February 9th through 11th.

On Saturday we are tentatively planning a one-day Gemologist Update program given by the Gemological Institute of America.

You can see why President Tenhagen has called Tucson "the most interesting intensified learning experience of the year." We hope you will make plans to take advantage of the opportunity to meet with your fellow gemologists from around the world, and to experience the wonders of the magnificent gems and minerals which make up the Tucson show.

Group accommodations at the Holidome have been arranged at the following nightly rates:

Single (one person) -	$52.00	Quad (four persons) -	$72.00
Double (two persons) -	$60.00	Suite (one person) -	$70.00
Triple (three persons) -	$68.00	Suite (two persons) -	$80.00

[State sales tax of 3% to be added to rates]

Reservations should be made before January 15, 1984, through the:

AGA Editorial Office
Myriam or Tom Tashey
608 South Hill Street, Suite 1013
Los Angeles, California 90014
Phone: (213) 623-8092

TUCSON '84

THE PALO VERDE PLAZA
HOLIDAY INN/HOLIDOME
4550 South Palo Verde Boulevard
Tucson, Arizona 85714
Phone: (602) 746-1161

SUNDAY, Feb. 5th	7:00 PM - 9:00 PM	HOLIDOME	Welcoming Cocktail Reception
MONDAY, Feb. 6th	7:30 AM - 8:45 AM	DINING ROOM	Board of Governors Breakfast
	9:00 AM - 11:45 AM	E.C.C.*	Lectures
	NOON - 1:15 PM	HOLIDOME	Luncheon Buffet
	1:30 PM - 5:00 PM	E.C.C.	Lectures
	8:00 PM -	E.C.C.	AGA GENERAL MEMBERSHIP MEETING
TUESDAY, Feb. 7th	7:30 AM - 8:45 AM	DINING ROOM	Master Gemologist Appraiser Breakfast
	9:00 AM - 11:45 AM	E.C.C.	Lectures
	NOON - 1:45 PM	HOLIDOME	Luncheon Buffet
	1:30 PM - 5:00 PM	E.C.C.	Lectures
TUESDAY and WEDNESDAY	5:00 PM - 10:00 PM	MEETING ROOM	Gemological Equipment Display
WEDNESDAY and THURSDAY	9:00 AM - 5:00 PM	E.C.C.	M.G.A. Program a) Course 1A & 1B examination
FRIDAY	9:00 AM - 3:00 PM	MEETING ROOM	b) Written and practical examination
SATURDAY, Feb. 11th	9:00 AM - 5:00 PM	MEETING ROOM	GIA Instructed Gemologist Update

*Executive Conference Center

September 23, twelve of the original twenty graders assembled in Santa Monica for another day of practice, being briefed once again by the authors of those systems before commencement of the test.

The systems and their authors in attendance were as follows: C. R. "Cap" Beesley, M.G.A., author of Color Scan; Howard Rubin, G.G., author of Gem Dialogue; and Jim Sharp, G.G., author of Color Guide.

The graders included AGA president, Joseph W. Tenhagen, M.G.A.; vice president, Neil H. Cohen, M.G.A.; secretary, Thomas E. Tashey, M.G.A.; Suzanne M. Anderson, G.G.; Antonio C. Bonanno, M.G.A.; Frank C. Bonham, .F.G.A., G.G.; James T. Dolleslager,M.G.A.; Jeffrey I. Hurwitz, M.G.A.; S.D. "Jack" Kelsey, M.G.A.; Donald A. Palmieri, M.G.A.; Thom Underwood, M.G.A.; and Charles A. Zawacki, M.G.A.

The test procedure was as follows:

1. Each grader would grade the same thirty colored gemstones using each system.
2. The group split up into three groups of four.
3. At the beginning of the test each subgroup would test a different system, rotating the gemstones until each grader had completed all thirty stones.
4. After the first session the graders rotated, using the light source recommended by the system's author. (The two lighting systems used were Duro Test Vita-Lite and Duro Test D-65). Note: By having the graders simultaneously working with each of the systems, there would be no advantage or disadvantage to any of the systems relating to time of day or eye fatigue.
5. Two sessions were concluded Saturday, September 24 and one session was held Sunday, September 25. The graders took a well deserved afternoon break and began testing the Color Master at GIA's Santa Monica headquarters Monday, September 26, to conclude the testing. Each grader had graded all thirty stones on each of the four systems.
6. All graders were tested for color discrimination on the Farnsworth-Munsell 100 hue test prior to testing the systems.
7. All graders were required to grade for color and tone on each system. In addition each grader was to fill out a brief questionaire describing the ease of use and desireability of each of the systems.
8. The test results were sealed and delivered to a group of independent color scientists who have no interest in any of the systems or their authors or owners. The color discrimination tests will be analyzed along with the graders results.
9. The graders agreed to withhold any comments or statements until the results are made public at a New York press conference next month.

The group concluded their California visit with a special one day Pearl Grading course given by GIA's pearl instructor Jill Fisher on Tuesday. By Wednesday, all graders had returned home anxiously awaiting results of the test.

Special Note: Less than a week after the test, rumors already abound concerning the results of the test. It should be noted that no one but AGA president, Tenhagen has had access to the individual grading results and no one is in a position to know or has knowledge of the test results.

Clearly, the Accredited Gemologists Association has taken an industry wide leadership role in the areas of gemology and appraising.

Since we at Gemological Appraisal Association have put our full support and participation behind these programs we urge our members to join the AGA.

(Wash., D.C. Chap.- Cont'd from pg. 13)
members, including Jeff Hurwitz, will be objectively testing all four color systems. They will be going to Santa Monica, California to take GIA's color master course and to test that system, as well as the three other systems currently on the market. AGA will adopt one or two systems which will become a must for each accredited MGA laboratory.

WASHINGTON D.C. CHAPTER

Ginger Morgret

The third meeting of the Washington Chapter of the Accredited Gemologists Association for 1983 was held on the evening of Saturday, June 4, 1983. Members present included: Tony Bonanno, FGA, Marvin Miller, GG, Ginger Beers Morgret, GG, Cathy Cleiman, FGA, June Needle, GG, Chris Lietwiler, FGA, Bill Dougherty, FGA, Jeff Hurwitz, GG, O. Dee Calloway, GG, Claude Robert Mann, GG, Chris Evans, GG, Nanette Monmonier, GG, Michael Cowing, FGA. Guests included: Michael Gould, Dee Doughtery, Doug Evans, Pam Cowing, Mary Anne Calloway, Jim MacInnis, Alice Miller, and Bob McDonnell. Special guests: Mr. Tenhagen, Neil Cohen, Bill and Terry Monagle of Miami, Florida.

Old Business: Marvin Miller began the meeting by discussing retail price mark-ups. what is a legitimate mark-up for the appraiser to use? According to the survey that he had distributed at the previous meeting, there is a real problem. The range in mark-ups for our membership alone is tremendous; but it was determined that our sampling is too small to make any real judgments. It was suggested that ultimately we will have to send out a survey to local stores to see what kind of mark-up they use. Mr. Bonanno stated, and the survey showed, that colored stones should have a higher mark-up than diamonds. Mr. Doughtery felt that there should be some way that appraisals could be representative of mark-ups nationwide; he also felt that triple-key is a fair and representative mark-up. Mr. Bonanno thought that triple-key is too high except for low priced merchandise. A discussion followed. It was fairly well agreed that different areas will have different mark-ups, and that we, as appraisers should reflect the regional area that we represent.

New Business: We were very honored to have Mr. Joseph Tenhagen, GG, FGA, current president of AGA, and Mr. Neil Cohen, GG, current treasurer, visit and speak to us. Following are the highlights of what they discussed:

Our first guest speaker Mr. Cohen, explained our money situation. The reason there was an increase in annual dues is that it was found that a professional organization cannot be run on $20.00 annually per member. We currently have approximately $17,000.00 to $18,000.00 in the treasury. These funds will be used promoting and improving AGA, plus in putting out our newsletter. Funds for AGA and the MGA program are, and will remain, completely separate, MGA does not drain off the main AGA treasury. Jeff Hurwitz will be concentrating on promoting AGA since he is the new national membership chairman.

Forty-eight people took the MGA entrance exam, forty-one passed. The second part of MGA qualification will be course 1A and 1B, to be held here, at National Gem, later this month. The first MGA's should be certified in August. Thre are plans to promote the MGA program and designation through the insurance companies. Directories of the MGA members will be sent to the insurance companies.

The entrance exam will be given several times a year and before the MGA programs, which they hope to eventually expand to four times a year. People may be qualified as an MGA by committee in less than five years if they do a large volume of appraisals. However, there will be no interim MGA's. Cubic Zirconia master stones are still not acceptable for accredited laboratories. They fade and the reflections are different between diamond and Cubic Zirconia. Both speakers explained that AGA and MGA want to be the best organizations in our field. The laboratories and appraisers will be checked periodically to make sure they maintain our high standards.

AGA does not have any plans to teach appraising. Mr. Tenhagen stressed strongly that we are not going to be an appraisal organization. Appraising is only one of AGA's functions. AGA is a Gemology organization. AGA plans to increase educational seminars in gemology to include locations other than Tucson.

Mr. Tenhagen explained that several

(Continued on page 12)

COLOR BLINDNESS: THE THREAT NOBODY SEES

David Federman
Executive Editor, Modern Jeweler

That new appraiser you're thinking about hiring has everything you want: a high school diploma, five years experience in a jewelry store and, best of all, a graduate gemologist's degree.

Yet if he's male, chances are almost one in 10 that he is color blind. (Less than 1% of all women suffer from this defect.) That's the normal percentage for men in practically every occupation in this country--even gemology.

And if your new appraiser is color blind, even mildly so, he can make a mockery of your store's appraisals. He may be incapable of telling a purplish ruby from a pinkish one, a lighter emerald form a deeper green one--important color discriminations that can mean the difference in value between gems of thousands of dollars. Nevertheless, the fact that color blindness could affect 10% of all men in the male-dominated jewelry industry goes almost completely ignored. Few gemology schools, gem labs or jewelry stores include color vision tests in their screening of prospective students and employees.

"Jewelers just assume that color-deficient people wouldn't be able to pass gemology courses or even be attracted to the gem field in the first place," says optometrist Harry Zeltzer, a color vision specialist in Waltham, Mass. "Nothing could be farther from the truth. Many color-deficient people don't know they have a problem. In fact, some have an unconscious attraction to jobs and professions with many color tasks."

Ironically, color vision problems are easy to detect. Jewelers can buy affordable screening tests, administer them and interpret the results themselves. Such testing is well on its way to becoming mandatory in the modern jewelry store, color vision experts say.

What follows is an introduction to the most common forms of color blindness, their nature, causes and consequences, and the various diagnostic tests currently available for each.

From fear to fact

Color blindness is for the most part hereditary--an inherited genetic defect that is carried by women and caught by men. It virtually always shows up as an inability to tell reds from greens compared to normal color vision. The daughter of a color blind man will transmit this disorder to half her sons. However, some eye injuries and diseases (such as cataracts) can also cause color blindness. Estimates of total incidence vary, but it is generally accepted that at least eight million men and 40,000 women in the U.S. alone are color blind. Only a relatively small number of these people know it. Why?

Most color blindness is mild and, as such, often undetectable in normal life. Those affected by it can compensate enough for deficiencies to drive cars, coordinate clothes and perform most job- or career-related color tasks. Michael E. Breton, Ph.D., administrator of visual physiology at Philadelphia's renowned Wills Eye Hospital, says that color blindness is, in part, a function of the size and location of the visual object or field being observed.

"Contrary to popular belief, most red-green color blind people actually can see red-green differences--but only if they look at large-field objects," explains Breton, who is himself extremely red-green color blind. "So if I come to a jeweler for a job and he tests me for color vision by asking me to name the color of a wall, curtain or even a book cover, I'll pass. But show me a small-field object like a gem and I may very well flunk."

Given the fact that even seriously color blind people can see all basic colors when looking at big objects (researchers in the field prefer the term "stimuli"), most color blind people are functional enough for their condition to pose little danger or inconvenience to themselves or employ-

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ers. For this reason, only those industries where color signals and color codes are a prevalent form of communication pay proper concern--especially when lack of concern can cost lives. Airlines and shipping companies, for example, give very rigorous color vision tests to employees. The military has spent millions of dollars on color vision research.

But industries where color blindness can cost money--not lives--rarely pay the problem any attention. The jewelry industry is one of the worst offenders. Color researchers say it can no longer afford to be.

"As careful color grading and communication become more important to jewelers, color discrimination testing, which was not necessary in the past, will play a bigger role," Breton predicts.

As things stand, even the Gemological Institute of America, in Santa Monica, Calif., which trains the majority of America's gemologists, concedes it does only rudimentary screening for color vision before admitting students to its resident programs. In fact, GIA Vice President Bert Krashes tells MJ, "We know there are some color blind people in our residency programs. However, their condition doesn't affect their aptitude for diamond color grading."

But what about ruby or emerald grading? GIA will shortly introduce a system for grading colored stones using its Color Master visual colorimeter. And several other colored stone grading systems involving use of every color reproduction medium from paint chips to color films are being marketed to jewelers.

Will color blind jewelers and gemologists who are able-eyed when it comes to diamond grading and colored stone identification be as able-eyed when it comes to colored stone grading?

Not if the experience of colored stone grading pioneer Cap Beesley is any indicator.

Color discrimination misfits

According to the results of color vision tests run in Beesley's lab, American Gemological Laboratories, New York City, 20% to 25% of all applicants for gemology-related jobs have very poor color discrimination skills--despite the fact that all but one or two of them were graduate gemologists!

"Whether it's due to color blindness or test anxiety is something I don't know," Beesley says. "But either way, the failure of so many to pass this test disturbs me." And no wonder.

Beesley gives a simple practical test designed to weed out job applicants with what he calls "abnormal color discernment." The test is purposely modeled after the kind of color grading test routinely given to diamond graders. Here's how it works.

First, job applicants are given an in-depth explanation of the AGL color grading system. After this orientation, they are given one or two stones secretly taken from AGL's seven-stone comparison set. These comparison stones are ranked in order of overall red color content from stones with the highest red content (75%) to the lowest (55%). (Rubies very rarely have more than 80% red content.) Applicants must place the two "missing" stones back into proper sequence in Beesley's master stone set.

"Now I realize this test is something new and out of the ordinary for the applicant, so we leave a lot of leeway," Beesley continues. "But when stones with 75% red content are placed below those with 55% or 60% red content, then there's something wrong. It is this kind of off-the-wall response that I am talking about when I describe flunking our color discrimination test."

But that's just one part of the test. Since tone (lightness to darkness) discrimination is also important when grading colored stones, AGL asks job applicants to rank rubies--again secretly selected from a special tonal, as opposed to color, master set--in proper sequence. Here the failure rate drops to around 10%, which is still cause for concern. "Sensitivity to tone is a much easier discrimination task," Beesley says. "Color discrimination is the toughie."

Ophthalmologists, optometrists and color researchers we talked to are hardly surprised that so many card-carrying gemologists can't pass color

discrimination tests. What surprises them is that so few people test for color discrimination in the first place.

"If you think about it though," Zeltzer adds, "color blindness is one of the most dread imaginings a jeweler could have, akin to a musician's fear of deafness. So naturally the subject is ignored or evaded."

Which only makes things worse.

Fear of color blindness leads to oversimplification and prejudice. To remove some of the fear, color vision professionals have largely discarded the term "color blindness" in favor of the more neutral and less threatening term "color deficiency."

Deficiency of what?

Color Blindness defined

People with normal color vision can distinguish and differentiate the colors of the spectrum: red, orange, yellow, green, blue and violet. They do so with the aid of photo-receptors called cones in the retina, the light-sensitive tissue at the back of the eye that transmits visual impulses to the brain via the optic nerve. Each retina contains millions of cones, each equally sensitive to one of the three primary color wavelengths: blue (short-wave), green (middlewave) and red (longwave). These sensors (which contain pigments) receive light frequencies and send them to the brain where they are translated into colors and mixed to produce the final image that you see.

A normal person with three fully-functioning sets of color sensors is called a trichromat. Such a person can discern hundreds of color shades--plus differentiate varying tones and saturations (color vividness). They are able to identify objects, tell foregrounds from backgrounds and make sophisticated color comparisons.

However, many trichromats have abnormal color vision. And color-deficient people called dichromats are worse off because they have only two kinds of working sensors instead of three. The most common manifestations of color blindness include mistaking greys and browns for green and confusing neighboring shades of red, yellow and green. These color confusions can cause problems for gemologists, especially if acute color discrimination is required of them.

Telling red from red

Many men, (and some women) inherit a slight or severe color vision handicap. This handicap usually reveals itself in the red, yellow and green areas of the spectrum.

Those with mild color vision defects are called anomalous trichromats. (Scientists define an anomaly as any deviation from a statistical norm.) If gemologists, they would probably identify a ruby as a ruby, an emerald as an emerald, and so on. And because gem identification relies largely on use of tests and instruments, the slightly color-deficient person could be as confident of his gem identification skills as the normal person.

But once in the realm of gem color discrimination and gem valuation, problems begin to arise.

As mentioned, trichromats have three working photo-sensors. So if shown, say, a particular red color paint chip and asked to pick a match from a group of chips, they would probably do so. If given a selection of more closely-related paint chips to choose from, choices might vary slightly--but all would be within the "norm."

Anomalous trichromats, however, have one weak sensor or color sensitivity area. So they must rely on other sensors and color sensitivity areas. This means they must mix in more of one color than is normal to create the color they see. If given a color matching test, the color match would differ from those made by normal people. The color-deficient person might identify the right color family, but the color chip chosen might be different in overall color composition than those picked by people with normal color vision.

Depending on the seriousness of the color vision impairment, it is conceivable--as Beesley's color- screening tests suggest--that a gemologist who is an anomalous trichromat could fail to distinguish the difference between, say a valuable orangy-pinkish ruby and a

run-of-the- mill brownish-purplish one. According to Zeltzer, those with red deficiencies tend to see duller, muddier colors when looking at reds.

The possibility of such misjudgments hasn't yet triggered any alarms in the industry. To the contrary, it doesn't seem to bother anyone. According to Bill Boyajian, head of GIA's Santa Monica resident training programs, "Highly color blind people have done remarkably well with GIA courses." But since GIA graduates are expected to be proficient in gem identification not gem quality assessment, remarkable performance by color blind students is hardly startling.

Will these same students fare as well in GIA's new appraisal course? Can they become proficient with the group's new Color Master-based colored stone grading system? These may require a degree of color discrimination GIA--or the entire jewelry industry, for that matter--has never before asked of its gemologists and appraisers.

The big questions facing the industry regarding even the mildly color blind is this: Can they make the grade as color graders?

And if that question must be asked of mildly color-deficient gemologists, think how serious it becomes in the case of far more serious color blindness.

When one color is missing

Anomalous trichromats can match colors that contain red, green and blue. When tested, however, they sometimes mix in more red or green to match a yellow than people with normal color vision. That's how doctors know whether they are red- or green-deficient.

Past a certain point, color deficiency becomes color insensitivity or absence. A very small percentage of color blind people have only two out of three working color sensors. They are referred to as dichromats. Here, too, most problems involve red and green sensitivity. A dichromat with a defective sense of red might be unable to distinguish a strawberry from its surrounding foliage. Out in a strawberry field, his blindness to red could render the berry invisible--that is, indistinguishable from its leaves. Zeltzer has invented what he calls an X-chrom red-filter contact lens which when placed on one eye (usually the weaker one) will supposedly help with such foreground/background confusions. But researchers aren't sure if it is the answer to color discrimination problems related to gem grading.

Essentially, the dichromat lives in a blue-yellow world where red and green are only visible if objects and vision-fields are large enough.

It is assumed that such a severely color blind person can't last long in gemology--even if they make it through a training course on the subject. But GIA's Boyajian claims that many color handicapped people, working closely with their instructors, have learned to compensate for color defects and get a diploma. So the jewelry industry is dotted with color blind gemologists.

How many? No one knows.

"The job is to devise a test that will not only diagnose color blindness but pinpoint its severity," says Beesley. "If we can see where in the spectrum someone is affected, and to what extent, the gemologist can probably learn to compensate or, at least know which jobs he can't perform.

Zeltzer agrees with Beesley.

"The idea is not to go on a witch hunt for color blind gemologists, but to see what tasks they can and cannot perform," he says, "That not only requires sophisticated testing but sophisticated testers. Jewelers must know how to interpret the results of tests they give."

Fortunately, there are sophisticated tests which can tell the jeweler how serious the problem is and in what area of the color spectrum it lies.

Testing for color blindness

Basically, there are two types of tests marketed today to detect color blindness: 1) pseudo-isochromatic and 2) color order tests.

The most commonly used, and least expensive, are the pseudo-isochromatic tests. These tests present observers with color plates containing either

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numbers, letter or shapes printed in color-dot form against progressively hard-to-distinguish color dot backgrounds. For example, a pink number may be set against a bluish-pink background. The color blind person may have difficulty making out the foreground figure. Using dots of color is meant to flush out common color confusions--greens and reds, grays and greens--that plague color blind people.

At present the Ishihara Test is the most popular pseudo-isochromatic test available. It comes in three sets, one with 18 plates selling for $48, 24 plates for $65 and 38 plates for $80, available from most ophthalmic supply houses. If you have trouble finding such a store in your area, call Charles D. Bell Inc., Westville, N.J., at (800) 257-7701 for information.

Bear in mind that the Ishihara Test is only a preliminary screening tool. Michael Breton considers it good mostly for weeding out severe color disorders. Further, it is not much good for classification of the problems that it does pick up. "The jeweler is primarily concerned with color discrimination, something the Ishihara Test is not really suited to analyze," he says.

To get color discrimination information, Breton recommends the Farnsworth-Munsell 100 Hue Test, available for $340 from Munsell Color, 2441 N. Calvert Street, Baltimore, MD 21218, Phone number (301) 243-2171.

Not only a diagnostic tool, the Munsell 100 Hue test is a color aptitude exam. The observer must arrange four rows of color caps, about the size of bottle tops, in sequence from one color to the next. Each row has 21 or 22 caps. When all the caps are arranged in proper order, they form an entire hue range (or circle) of the spectrum. A perfect score is zero, but most people are expected to place a few caps out of sequence. Such mistakes are called transpositions. However, when many caps are arranged helter-skelter, this indicates color deficiency. The beauty of the 100 Hue test is that one can identify the precise area of deficiency.

A word of caution here: No matter which test you give, make sure it is done in a proper lighting environment. Color researchers recommend using a light source that most nearly duplicates north daylight.

Ideally, the best lighting environment is that provided by the Munsell Light Booth when set to its daylight setting. But since this booth costs $2,400, it is highly unlikely that jewelers will use it--unless, perhaps, coupled with gemological work.

A far more affordable alternative is to have testing done under a lamp or light source using a fluorescent bulb with a very high color rendering index. This index goes from 0 to 100, with 100 equal to north daylight--the ideal lighting situation. No lamp is yet rated 100, but several have ratings over 90 and up to 96 and these would be acceptable (see chart). Tungsten and incandescent lights are definitely no-no's--unless used with very expensive filters--since their high red content is not suited for the test.

In any case, color researchers urge jewelers, gem labs and gemology schools to give routine and rigorous color vision and aptitude tests. As Breton puts it:

"The jewelry industry seems to be undergoing a color revolution, creating greater demands for good color discrimination. That means testing for color deficiency could become essential."

The Bye-bye Blues

As if congenital color blindness in men was not enough to worry about, jewelers are also stalked by a certain kind of acquired color blindness that affects men and women equally.

It's much subtler form of color deficiency, one that is trickier to characterize. Unlike congenital color blindness which almost always strikes the red-green (medium and longwave spectrum) areas of color sensitivity, this one hits at sensitivity in the blue spectral bandwidth area.

And because it has to do with aging instead of heredity, a far greater percentage of the population is susceptible to it.

In general, jewelers over 50 are subject to progressive yellowing of the lens of the eye. (It is the lens which

focuses the light that is received and processed by the retina.) As the lens yellows, it begins to absorb more and more blue rather than transmit it to the retina. The end result: dulled sensitivity to blue. This means that diamonds--even strongly fluorescent ones--may appear yellower, less white, and that blue stones like sapphire may appear less vibrant.

"It's almost like wearing a pair of permanent yellow sunglasses," says Prof. Fred Billmeyer, famed color researcher at Renssalaer Polytechnic Institute, Rochester, N.Y.

This color vision problem is irreversible and can be severe by the time a jeweler is 65. However, it occasionally affects younger people, too.

To be sure your sensitivity to blue is normal, color vision experts recommend taking a good color aptitude test, in particular, the Farnsworth- Munsell 100 Hue Test.

Seeing the Light of Day

Two pieces of different material that seem the same color in one lighting environment will appear totally dissimilar colors when you switch to another light source.

This phenomenon is called metamerism and it is extremely important that jewelers know about it, warns Prof. Fred Billmeyer, famed color researcher at Renssalaer Polytechnic Institute, Rochester, N.Y.

According to Billmeyer, metamerism becomes a problem as soon as you begin making color judgments based on the comparison of two different kinds of materials. Since the jewelry industry seems close to adopting a color grading system by which jewelers match gem colors to gem color simulants like paint chips and color films, metamerism is bound to creep in and throw off grades. The only way to minimize this problem, he ways, is to use standardized light sources.

Michael Breton, a Ph.D. who specializes in color vision research at Philadelphia's Wills Eye Hospital, suggests use of certain fluorescent light fixtures made by, among others, General Electric and Verilux and available from any lighting supply house. "The idea," he says, "is to use lighting which approximates the standard for color observation work--namely, north daylight. Generally, that's fluorescent light."

As guide to finding lighting which comes closest to duplicating north daylight, look for illuminants with what scientists call a high color rendering index. This index goes from 0 to 100, with 100 equal to north daylight. Although no illuminant made yet scores 100, some come as close as 96. For the most part, these are fluorescent lights. However, some tungsten lights fitted with very expensive blue filters might be suitable. Breton says to stick with fluorescent fixtures.

"Fluorescent lighting is far cheaper and you don't need to play around with expensive blue filters," he explains. "A word of caution, though. You just can't run out and buy any ordinary fluorescent fixture marked 'daylight' and think it will do the job. Some have very poor spectrum distribution curves with far too much red in them. Stick with those that have high color rendering ratings.

(See chart of available fluorescent tubes on page 20)

MEMBERSHIP UPDATE

RENEWAL OF MEMBERSHIP

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Some commercially available Fluorescent Illuminants

NAME AND/OR DESCRIPTION	SUPPLIER	COLOR RENDERING INDEX
Fluorescent tube Color 57, TL 57	Philips, Netherlands	96
Fluorescent tube Color 55, TL 55	Philips, Netherlands	96
Fluorescent combination three Color 55 and one Color 57	Philips, Netherlands	93
440 Luminaire (fluorescent) NL 6500	Macbeth, U.S.	91
Fluorescent Macbeth NL6500-F40 T12	Macbeth, U.S.	90
Chroma 75 F15 T8C75	General Electric, U.S.	94
Criticolor F15 T8/CC	Verd-A-Ray, U.S.	91
Verilux Daylight F15 T8 VLX	Verilux, U.S.	94
Fluorescent FL-205	Shibaura Electric, Japan	91

Source: Congenital and Acquired Color Vision Defects by Pokomy, Smith, Verriest, and Pinckers, New York, N.Y., 1979.

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