

GEMOSCOPIA
A CORPORATION OF

NEW-YORK

APPARATUS
FOR THE
EXAMINATION

OF

PEARLS

&

PRECIOUS

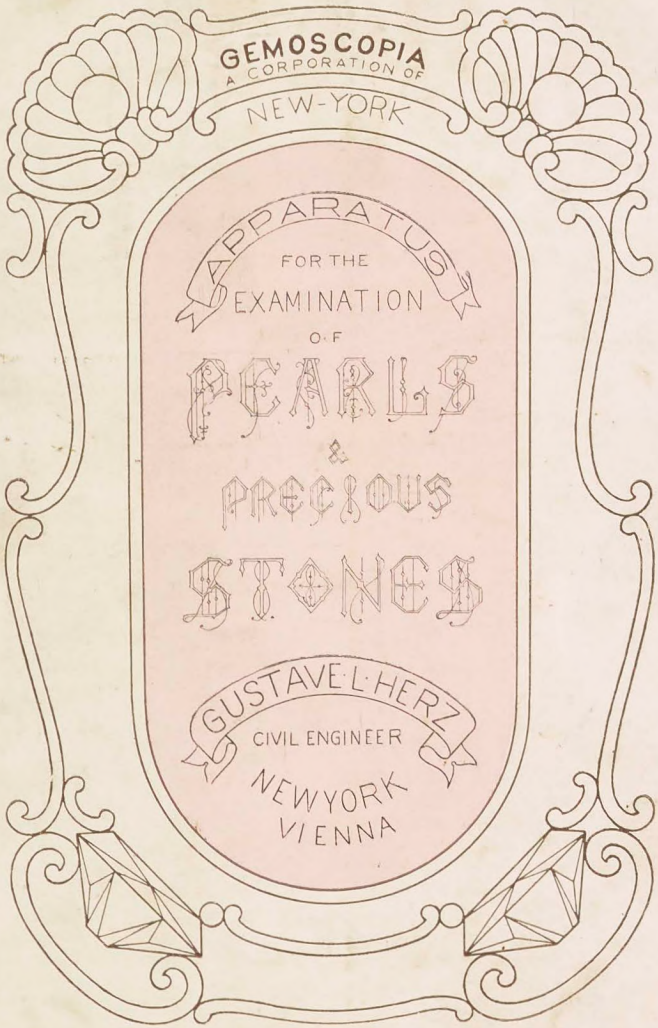
STONES

GUSTAVE L'HERZ

CIVIL ENGINEER

NEW YORK

VIENNA



INGENIEUR GUSTAV L. HERZ, WIEN I., BURGRING 1

APPARATE ZUR UNTERSUCHUNG VON PERLEN UND EDELSTEINEN

nach

DOC. DR. H. MICHEL — PROF. G. RIEDL — ING. G. L. HERZ

QUOTATION an: Shreve Treat & Eacret
San Francisco

DATUM July the 4th 1928

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DETECTOSCOPE Table Tisch	This booklet contains valuable instructions to be kept as a reference book		128.50	
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Preface



AT the end of the XIXth century modern chemistry succeeded in penetrating the thick veil surrounding the internal chemical structure of the precious stones. The knowledge was immediately utilized for the production of imitations, which during the past few months finally brought upon the market Synthetic Jewels of such perfection and such chemical and physical identity with the natural product, that discrimination between the Real Jewel and its Synthetic Duplicate has become entirely impossible without the proper equipment.

During the second decade of the XXIeth century furthermore, the Japanese, in continuation of the researches of Alverdes, a German scientist, succeeded in producing semi artificial, so-called "Cultured Pearls" by introducing a mother-of-pearl ball into the living oyster, leaving it to the animal to cover it with genuine pearl substance.

The Legitimate Trade seemed to be at the mercy of the unscrupulous.

Through long and painstaking scientific methods, two scientists, the Director of the Mineralogical Section of the famous Vienna Hofmuseum, Dr. Hermann Michel and Prof. Gustav Riedl, collaborating with the writer of this booklet and the well-known optical works of C. Reichert, Vienna, succeeded in devising ingenious apparatuses for the classification of jewels and pearls, making it easily possible to anybody possessing the equipment, to discriminate between the Genuine NATURAL STONE and its SYNTHETIC IMITATION no matter how cleverly made and BETWEEN THE GENUINE NATURAL PEARL and the "CULTURED" product.

This booklet gives for the first time the opportunity to the trade to acquire a complete equipment for the classification of PEARLS and JEWELS.

The news of the existence of these perfect imitations is by and by penetrating to the public and it becomes more imperative every day for the jeweler to have an equipment, enabling him to *discriminate between the Genuine and the Imitation* and to prove it to his customer.

Vienna in the fall of A. D. 1927.

GUSTAVE L. HERZ C. E.
VIENNA I. Burgring 1 - NEW YORK

This booklet is handed to established firms of the trade exclusively.

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This booklet contains valuable data and should be kept as a reference book

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Instruments for the Examination of Pearls

Dr. MICHEL'S & Prof. RIEDL'S

Perlometer

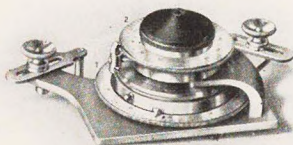
Trade Mark registered

THE appearance of the Japanese Cultured Pearl upon the international pearl market created a panic, which in turn resulted in some people devising "quick methods" for the detection of these falsificates. Most of these methods were heralded with the assurance, that in some miraculous way, cultivated pearls could be immediately spotted. All these methods have been found to be unpracticable and unreliable and have quickly disappeared, but Michel & Riedl's Perlometer has conquered the world and is to-day acknowledged as the only reliable apparatus extant.

The Perlometer readily shows the difference between the *genuine pearl* and the *cultured product* by a *microscopic examination of the interior of the pearl*. The kernel of the cultured pearl shows its different structure, immediately excluding the possibility of a mistake.

Furthermore the *real value* of the genuine pearl can be determined by the examination. The Perlometer shows the *internal structure* of the genuine pearl with its concentric layers and also the *internal defects* of the genuine pearl (cracks, manipulations, patches etc.), a thing considered entirely impossible heretofore. The pearl is put upon the part of the Perlometer, called **CARDIOMETER**, illustrated herewith. In a most ingenious way a very thin needle with its one end

ground and polished to a mirror finish is introduced into the drilled hole of the pearl and the picture reflected from this mirror, greatly magnified and examined with a special microscope. This mirror needle itself is in all the 3 hereafter described types of Perlometer held by the Cardiometer.



THE CARDIOMETER

The Cardiometer is set upon the table of the microscope in a detachable way. It not only holds the needle in an upright position but also makes it possible to move the needle with its mirror up and down by 1/100 of a millimeter. The internal structure of the pearl thus examined lies before the examiner like an open book and shows the minutest details of the internal structure of the pearl and all defects of the same, thereby making an *exact analysis* possible, as basis of a *correct determination of the value*.

MICHEL - RIEDL'S

Perlometer

Trade Mark registered

Patents pending!



BE it a whole necklace or a single pearl, positive results will be obtained by the use of the Perlometer.

The Perlometer is an electrically operated Special Microscope which may be connected to any lamp-socket. It has two lighting systems:

The first one is built directly into the lower part of the apparatus.

To form an opinion concerning a single pearl or a whole necklace it is advisable to commence the examination with placing one pearl after the other into very strongly concentrated light. The pearls are passed without cutting the string, one by one over a round hole in the Perlometer Table, underneath which a condensor throws a concentrated bundle of lightrays through the pearl. The light is so strong that it suffices sometimes to detect the telltale stripes of the cultivated pearl, especially when assisted by colourfilters. (Refracteur).

The second lighting apparatus swings on four ball joints around the microscope proper and is so movable that the light rays, also very strongly condensed, may be concentrated upon the pearl to be examined.

The Perlometer can be used for the examination of fully drilled or half-drilled pearls. In the latter case the mirror needle is made of glass and introduced into the drilled hole of the pearl. The mirror reflects the condition inside the pearl into the microscope, which enlarges the picture hundredfold and reveals to the observer not only any artificially introduced insert but also any kind of a defect in the interior of the pearl, like cracks, discoloration, displacement of layers etc., which would come to light in case the pearl was peeled. The genuine accidental pearl consists of more or less concentric layers of a variety of thicknesses from its sometimes dark nucleus to the outer surface. The cultured pearl owes its existence to the introduction of a ball of mother-of-pearl or another substance into the shell of the living oyster, which builds up concentric layers around the ball. The division line between the two substances is clearly and easily observable.

The Perlometer would be of immense value if it were only usable for the detection of the cultivated pearl, but of equal importance at least is the possibility of classifying pearls not by their surface appearance but according to their internal structure. It is immediately apparent, whether or not a so-called "dead pearl" which has lost its lustre, can be peeled or whether internal discoloration or cracks would make this procedure inadvisable. Manipulations like covering of cracks, lacquering or the pasting of holes are immediately detected.

Many millions of dollars have already been saved by the use of the Perlometer in all parts of the world.

The Cardiometer is also equipped for the exact measuring of the layers of the pearls up to 100 of a mm, which is of great importance with respect to the registration and identification of pearls (described on pages 15 and 16).

We manufacture three types of Perlometer.

MICHEL-RIEDL'S

Perlometer

Trade Mark registered

Perlometer with Monocular Tube.



Model A

THIS type of Perlometer is equipped with a monocular tube which bears a turret arrangement at the end facing the object, permitting the choice between two different enlargements.

This type is especially suited for sporadic examinations in the laboratory.

It represents the simplest type of Perlometer and comes equipped with steel needles, permitting the exact examination of the interior of the pearls as well as the measurement of the thickness of the layers.

The type is also equipped with an arrangement for the microscopic examination of the pearl surface. The pearl can also be subjected to such a strong light, that when looked upon through colourfilters, the layers of the inside of the cultivated pearl can in some cases be detected. In these cases it is mostly necessary to corroborate a decision so made with the Pearl Compass, described on page 9 or the Densicope described on page 19, in cases of undrilled pearls. Drilled pearls can further be examined with the Microscope of the Perlometer.

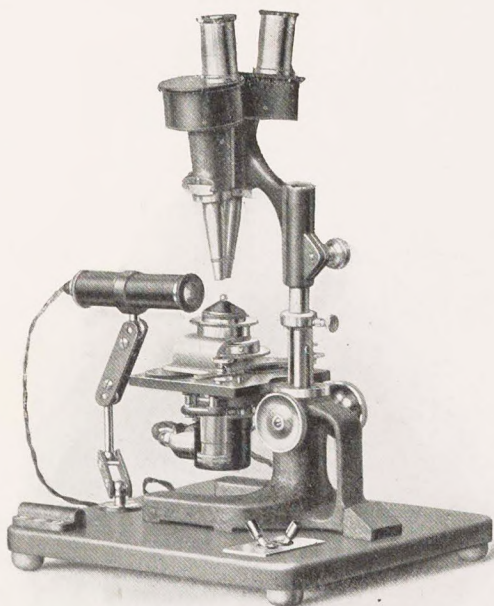
It is also possible to equip the instrument with the accessories for the examination of half drilled pearls in which cases an attachment for the use of the glassprisms is furnished. The pearl is held with the hole upwards and the glassneedle introduced in a downward direction.

MICHEL-RIEDL'S

Perlometer

Trade Mark registered

Perlometer with Binocular Tubus.



Model B

FOR long examinations it is sometimes annoying to use one eye only. The binocular tube is equipped with two ocular lenses and crystal prisms which make constant observations with both eyes possible. The arrangement is similar to the optical equipment of field binoculars.

The enlargement is greater and the picture more plastic than with model A.

Model A may also be equipped with the binocular tube, which type A, B is then equipped for all possible examinations of pearls.

*Address all orders and inquiries to Gustave L. Herz, Vienna I. Burgring 1
Austria*

MICHEL-RIEDL'S

Perlometer

Perlometer with Metal Tray

with Binocular Prismtube and Monocular Tube with Stereo.

Patents pending.



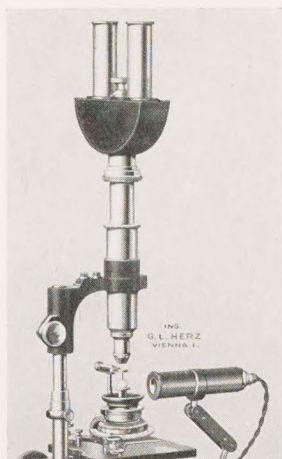
Model C

THIS Model "De luxe" sets in the center of a tray which is covered with velvet on the inside, preventing pearls from rolling off to the floor. Model C represents a complete equipment for the analysis and classification of drilled and half drilled pearls. The equipment in optical as well as in mechanical respect is the very finest and contains all the accessories for the examination of every kind of pearl.

Address all orders or inquiries to Gustave L. Herz, Vienna I, Burgring 1 Austria

Every Perlometer is furnished with a black cloth curtain, held by a system of light, foldable metal tubes.

Perlometers are shipped in elaborate, polished hardwood cases and all accessoires are separately contained in velvetlined boxes and drawers.



For all further informations concerning the newest researches about pearls and all methods for the examination of pearls, refer to:

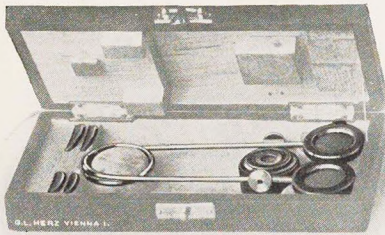
Dr. Michel's Pocket-Book for Jewelers and Lapidaries, Gustave L. Herz, Vienna I., Burgring 1, Editor.

Prices upon application.

Address all orders or inquiries to Gustave L. Herz, Vienna I. Burgring 1
Austria

The Refracteur

THE Refracteur is a small instrument for use in connection with the Perlometer for the superficial examination of doubtful pearls. It consists of a cylindrical metal cup, the bottom of which is formed by a thin sheet of transparent Quarz Glass. This cup is set over the circular opening of the Perlometer table. The cup is filled with pure Benzol. The wooden box in which the Refracteur is furnished, contains several diaphragms, one of which is selected according to the size of the pearl to be examined. This diaphragm is inserted into the metal cup, the pearl placed in the opening of the diaphragm and the light in the bottom of the Perlometer turned on.



When looking at the pearl in this state with the naked eye, the mother-of-pearl covered kernel of a cultivated pearl can be recognized. It can be seen still clearer by looking at the pearl through the colour-filters furnished with the Refracteur.

A purple filter and a red filter are connected with a spring wire. The outlines are still clearer by using both filters together which can easily be done by compressing the spring and bringing the filters into coincidence.

The pearl should be turned with a glass rod into several positions and several observations should be made.

As stated before, this process of examination is not conclusive and will not hold good in court. It can be used to advantage occasionally.

The Refracteur can also be used in conjunction with the Detectoscope (page 17) and the Detecto Microscope (page 20).

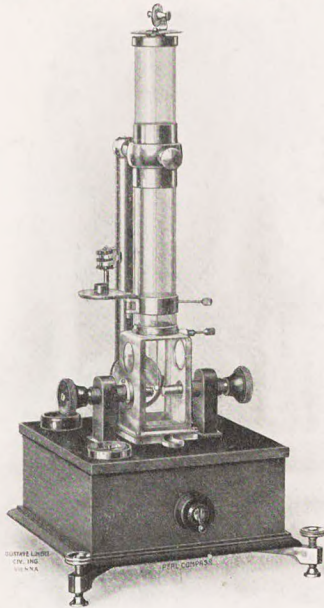
The Pearl Compass

Trade Mark registered

*An apparatus for the examination of undrilled pearls.
Dr. H. Michel and Prof. G. Riedl, Vienna, inventors.
Designed by Gustave L. Herz, Vienna—New-York.*

Patents pending!

D. R. P. - U. S. A. Pat. a. f. - D. R. G. M.

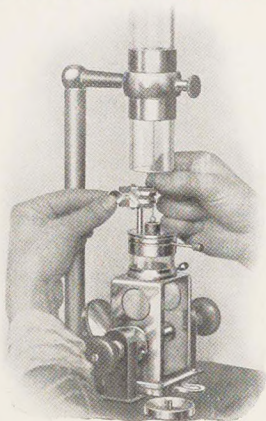


THIS magnetic method for the discrimination between natural pearls and cultivated pearls with a mother-of-pearl insert is based upon the following phenomenon: A crystalline substance will take a certain position, according to its crystallographic structure when brought into a magnetic field. The most commonly used substance for the balls inserted into the pearl-oyster, namely mother-of-pearl, consists of Aragonite and though covered with the natural concentric layers of pearl substance will turn into a certain position when brought between the poles of an electro-magnet.

The pearl to be examined is suspended on a very thin silk-thread between the poles of an Electro-Magnet in such a way that it may be moved up and down as well as around its own axis. The winding of the Electro-Magnet of the Pearl Compass is built into a wooden case, shown in illustration on page 9. Only the pole-ends are protruding. These are perforated and threaded with a fine thread, through which two threaded bolts as pole-ends can be brought as near as desired to the pearl.

The pearl is fastened to a very thin glass cylinder with a special glue. This cylinder bears on its upper end a black bristle, playing over a round scale, showing the degree of rotation the pearl receives when the current is turned on. The manipulation of fastening the pearl to the cylinder is illustrated herewith below.

The problem of attaching the pearl centrally to the thin glassrod is solved in an ingenious way. The thin



The Process of Fastening the Pearl.

Patents pending!

glassrod, after applying a drop of cement is gripped by two little metal fingers, pressed into a groove and slid down against the pearl resting in a coneshaped cup.

It also shows the manipulation to be extremely simple. Once the pearl is suspended on the glass cylinder which in turn hangs on the silk thread, the poles of the Electro-magnet are placed as closely as possible to the pearl by means of screw threads, by turning the insulated knurled knobs on the ends.

This patented new single coil construction has enormous advantages over the formerly used type with two separate windings and gives considerably better results, owing to the elimination of all electrical disturbances from the windings themselves.

The pole-ends can be brought into the closest proximity of the pearl by turning the black rubberknobs of the finely threaded bolts forming the pole-ends.

The pearl with its suspension is carefully protected from draft and the breath of the observer by being incased in a metal housing with a front window.

A reflecting mirror shows the exact position of the pearl and makes observation still easier.

Once the pearl is suspended in its proper position, the current is switched on and the movement of the bristle on the scale observed.

A ball of mother-of-pearl, even when covered with pearl substance, shows a turn when the current is switched on, except if the layers of the ball are already parallel to the lines of force of the magnetic field. It is therefore necessary to examine the pearl in several positions and mark the degrees of rotation which the bristle shows on the scale.

The suspension of the silk thread is such that the thread may be turned with glass cylinder and pearl suspended thereon. A graduated scale on the upper end of the glass tube permits the turning to any desired extent.

It is immediately apparent that inserts of not every substance will show a result when brought into a magnetic field. Even balls of variously pasted together layers of mother-of-pearl will show only inconclusive evidence of the presence of an insert in the pearl.

The magnetic apparatus can only be recommended for Perfectly Round Pearls, Baroque Pearls showing deviations in the field except when symmetrically built and suspended in the axis dividing symmetrical parts.

Each apparatus is furnished with complete instructions for the handling of the instrument and for the examination of pearls, which must be strictly adhered to.

The Pearl Compass is a very valuable accessory in all cases of undrilled pearls.

A cultivated pearl with a mother-of-pearl ball as an insert will give immediate decisive indications of the presence of this ball. A negative result however must not be taken as an indication of genuineness unless verified by the Perloimeter in cases of drilled pearls or by the Densiscope or the Refracteur in cases of undrilled pearls.

The apparatus is furnished with a winding, suitable for 16 Volts storage battery, which may be used in all cases where direct current is not obtainable, alternating current being entirely useless for the purpose.

We also equip the apparatus with a resistance, to be used with direct current of 110 or 220 Volts, whatever there is at disposal.

State voltage used when ordering!

Prices upon application.

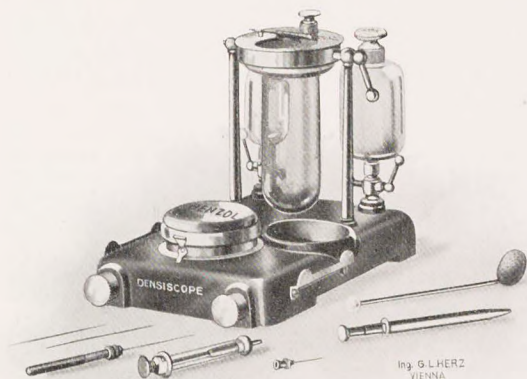
All methods for the examination of pearls are described in Dr. H. Michel's Handbook for Jewelers and Lapidaries, Gustave L. Herz, Vienna I., Burgring 1, Editor.

*Address all orders or inquiries to Gustave L. Herz, Vienna I. Burgring 1
Austria*

The Densiscope

Trade Mark

Patents pending!



THE jeweler is sometimes confronted with the problem of quickly deciding about the general value of a Pearl Lot or a Pearl Necklace, in which cases the above illustrated DENSISCOPE can be used to great advantage.

It consists of a round glass-vessel, approximately 2 in. diameter in its lower part, and about twice the size in its upper part. The upper part bears a circular mounting of pure nickel, which, except for an opening on one side, closes the vessel hermetically. The whole vessel may be lifted out from an annular rim; while being held in the rim it may be swung around a horizontal axis.

Two upright columns hold the above mentioned annular rim to an enamelled base-plate. The base-plate also holds two glass bottles with drop stoppers, enamelled in green, marked "heavy" and in red, marked "light". The larger bottle contains Bromoform ($d = 3$), the smaller bottle Monobromonaphtalin ($d = 1,5$), both liquids together forming the testing liquid of the apparatus.

The base plate also contains two round cups, one for the pearls to be examined, the other for those that are examined. A round, hermetically closed cup in front contains Benzol which is used for the cleaning of the

pearls, especially of the drilled channel, the cleaning being done with a small capillary metal syringe.

All metal parts surrounding the liquid are made of pure nickel, most other metals being affected by the chemicals. A perforated pure-nickel-spoon serves for fishing out pearls from the glass vessel.

Two round capsules are setting in the front of the base-plate, the one holding the above mentioned syringe, the other a set of reamers for the holes with a reamer-holder.

THE PROCEDURE

The central vessel is filled to $\frac{3}{4}$ of its height with the testing liquid, consisting of a mixture of Bromoform and Monobromonaphthalin and some other small ingredients, in the relation of approx. 8 : 100. The exact density of the liquid, which must have the specific weight of the pearl substance between 2,65 and 2,78 is indicated by two differently coloured crystals or a fresh water pearl and a crystal, or by the use of an Areometer. The pearl should swim, the crystal lie on the bottom of the vessel. If the Areometer indicates that the liquid is specifically too light, a few drops from the bottle, marked "heavy" (green label) are added. If the testing liquid is too heavy, the crystal appears on the surface of the liquid and it is necessary to add a few drops from the bottle, marked "light" (red label), until the crystal sinks to the bottom.

A few drops of Bromoform should be added once in a while and the liquid stirred up with the nickel spoon.

The Pearl Lot is then thrown into the liquid. If the majority of the pearls remain on the upper surface, it is to be assumed that the whole necklace consists of genuine pearls. If however all or the majority of the pearls sink to the bottom, the greatest caution has to be observed, because cultivated pearls, being heavy, sink to the bottom of the prepared liquid.

Absolute purity of the Components of the testing liquid is the first prerequisite of successful application.

The Densicope is a small, neat, compact, practical Apparatus which should not be missing from any laboratory table.

A set of small reamers with chuck and handle, and a cleaning syringe, which form part of the equipment of the Densicope, come in very handy in many cases.

The Densicope is regularly sold without liquids, but Bromoform and Monobromonaphthalin may be furnished if desired.

It is shipped, set into a polished hardwood case and can be kept under lock and key.

Prices upon application.

For explicit information as to the density of pearls, see Dr. H. Michel's Pocketbook for Jewelers, Lapidaris and Pearl-Dealers, Gustave L. Herz, Vienna I. Burgring 1, Editor.

*Address all orders or inquiries to Gustave L. Herz, Vienna I. Burgring 1
Austria*

of the identical size and shape, both of which the jeweler remembers perfectly.

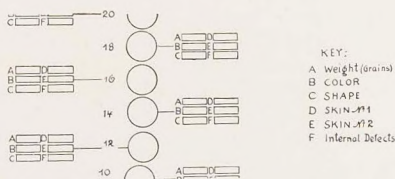
After a long search the jeweler locates a pearl of the identical size and purchases the same for \$ 2800 which price although high, he has the impression will not be too high for his customer, who had declared that "nothing was too dear for him as present to his wife."

That jeweler is still awaiting the return of his customer, but in the meantime it has occurred to him that he might have re-purchased the previously sold pearl at a figure \$ 1000 above his sales price.

The new patented HERZ MATRIX SYSTEM permits the keeping of a perfect and undeniably correct Record and Stock System, being simultaneously a record of absolute identification of any pearl, once recorded.

All pearls are built up of concentric layers of pearl substance. These layers vary in thickness. Some of the finest pearls are built up of very thick layers and some of the crudest pearls are built up of very thin layers and vice versa.

The thickness of the layers is in itself no criterion for the value of the pearl, but *no two pearls are built up in the same way or have two*



consecutive layers of the same thickness. Here are the means for positive identification. The layers are measured in their thickness with the PERLOMETER and then recorded on the sheet of a Post-Binder-Book, one sheet of which is herewith illustrated in Form 000.

For instance a necklace with 57 pearls is analysed and each pearl described with 6 datas:

- a) The weight in Grain or Carat
- b) The colour of the pearl
- c) The shape of the pearl (round, pearshape or baroque)
- d) Skin No 1 (measured with the Perlometer)
- e) Skin No 2
- f) Internal defects (discoloration, cracks of inner layers etc.)

The 6 data absolutely identify each pearl of the necklace.

The Herz-Matrix System is printed on cardboard with holes for the Postbinder. An equipment consists of Postbinder in Curdroy or Leather and 500—1000 printed sheets.



Prices upon application.

Instruments for the Examination of Precious Stones

The Universal Jewel Detectoscope

Trade Mark registered

by Dr. H. MICHEL & Prof. G. RIEDL, Vienna
design GUSTAVE L. HERZ, Vienna

Patents pending!

D. R. P., Oe. P.



The Table-Apparatus.

THIS instrument has been devised upon the urgent call of the trade for some apparatus by which it would be possible to discriminate between stones of the same colour but of different variety and value and between genuine precious stones and their synthetic imitations. It has grown out of Dr. H. Michel's and Prof. G. Riedl's experiences extending over many years and has been used in their laboratories for some time past, before upon numerous requests, the manufacture of the instrument was taken in hand to supply the urgent demand of the trade.

The present instrument is a complete outfit for the every-day's use of the jeweler, practical and easily handled. The use of the instrument is based upon the discovery, made by Messrs. Michel & Riedl, that jewels which appear to have the same colour in day light show a different colour when subjected to light rays, from which certain parts of the spectrum have been filtered out through colour filters.

We manufacture two types of the Detectoscope.

The above illustrated equipment for the laboratory table which may be connected to any lamp-socket and

a smaller pocket-instrument with the same optical equipment as the above, but with dry-cells as source of current.

The table instrument consists of a solid metal housing, bearing a heavy half round table on its upper end, the center of which is equipped with a circular glass window.

The object to be examined is placed on this glassplate, or, if an examination in various positions is desired, it may be fastened to a small movable rod, shown on the left side of the cut. The socket is connected to the next circuit, the switch of the lamp turned on; the object then appears intensely illuminated and is ready for the examination.

Two filterdisks, as illustrated on the left corner of the illustration, slide under the table of the Detectoscope and appear then so fastened that the disks may be rotated underneath the table. Filterdisk A has 5 colour-filters, filterdisk B has from 3—5 colourfilters, giving a variety of coloured rays which may be sent through the jewel.

Filterdisk A is used for Emeralds and Green Stones only. Each apparatus is equipped with an explicit table which makes it possible to distinguish the genuine Emerald at a glance from a variety of other green stones, like Green Garnet, Green Zircon, natural or synthetic Green Corundum etc.

Is it an Emerald or a Green Garnet, or an Emerald or a Green Zircon, are questions arising every day, especially since good Emeralds have become so expensive.

Red jewels are examined over filterdisk B. This examination is not possible with filters alone, but the quality of many red jewels to luminesce is utilized. Rubies for instance (except the dark brown-red Siam Ruby) show distinct luminescence. A small handfilter is furnished with the apparatus which enhances the effect. A special table No II for red stones furnishes all the necessary informations.

The examination of precious stones for Enclosures, Gas bubbles and Zone-structure is made with the Minimicroscope which is furnished with the Detectoscope and sets in a round fixture, permitting easy adjustment to the observer's eye.

A Dichroscope is also furnished with the instrument for the examination of the pleochroitic qualities of the jewels. A special table III gives these qualities of the various jewels in detail. The question: is a stone pleochroitic or not may decide upon the value of the stone. A jewel when observed via the Dichroscope may show both squares in the same or in different colours. When both squares appear in the same colour, the jewel shows no Pleochroism. Pleochroitic stones show different colours in the two squares of the Dichroscope.

As an example:

The following stones show no Pleochroism: Spinel, Garnet, Almandine, Diamond.

The following stones show distinct Pleochroism: Ruby, Sapphire, Emerald, Zircon.

State voltage used when ordering.

Refer to: Dr. H. MICHEL'S POCKET BOOK FOR JEWELERS

GUSTAVE L. HERZ, C. E.

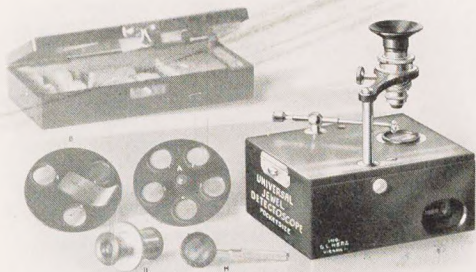
VIENNA I, Burgring 1 • EDITOR

for all methods for the examination of jewels and colour tables of pleochroitic jewels.

The Detectoscope

Trade Mark registered

The pocket instrument.



THERE are many cases where the jeweler is forced to make appraisals or desires to make purchases outside of his office. This has led to the construction of the above illustrated Pocket — Detectoscope.

The source of light is a dry-cell, contained in a neat hardwood box. The filterdisks are the same as mentioned in the Table-type of Detectoscope, so is the whole optical equipment.

The filterdisks are inserted under the lid of the box and switch as well as filterdisks operated through side openings of the wooden box.

The Detectoscope is an apparatus which permits the discrimination between genuine Emeralds and other green stones or doublettes, as well as between genuine and synthetic Rubies, between Sapphires and all other blue stones and also the discrimination between genuine and synthetic Sapphires and Rubies, leaving no doubt whatsoever in the mind of the observer.

This small instrument of the size of a small Kodak camera may easily be carried in any handbag.

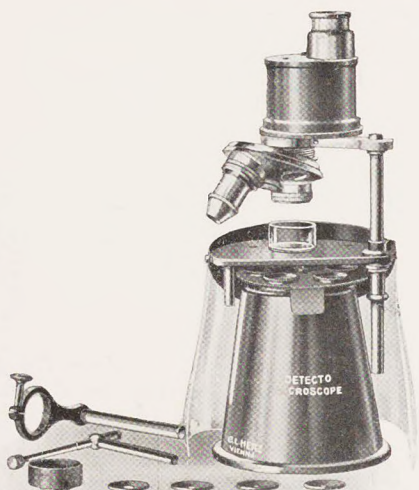
The common practice is to purchase the combined instrument: The complete table instrument with the wooden box and battery of the Pocket-type for combined use.

See table on page 21.

For detailed information see Dr. H. Michel's Pocket-Book for Jewelers and Dealers of Precious Stones and Pearls, with eight colour plates.

The Detecto-Microscope

Michel, Riedl & Herz



Patents pending!

THIS apparatus is a combination of a Detectoscope with a Double-Prism-Microscope. The monocular prism-tube is combined with the here-before described lower part of the Detectoscope. The Minimicroscope is replaced by the Double-Prism-Microscope, which permits a considerable enlargement and has on its lower end a turret with two objective lenses, permitting instantaneous change from the smaller enlargement combined with a larger field of vision to the stronger enlargement with a smaller field of vision.

This instrument is very handy and is recommended in all cases where a more accurate examination of the interior of the precious stone is desired.

The apparatus is furnished complete with two filter-disks, handfilter and Dichroscope and with complete instructions and all necessary tables, in a neat, polished hardwood case with lock and key.

State voltage used when ordering.

The Dichroscope

It suffices in many cases to examine the jewel for its Pleochroism to make definite classification possible. The instrument used for this purpose is the Dichroscope, a small pocket-size tubular instrument with an ocular lens on one end and a square hole on the other. The jewel is held in front of the square hole and looked upon and through it via an ocular lens against a light window or any other source of artificial light.

When used with Detectoscope or Detecto-Microscope, the Dichroscope is slipped into the holder provided for it and the lamp of the Detectoscope or Detecto-Microscope used as source of light under the groundglass of Disk B.

In looking at a pleochroitic stone in this way, the little square at the end of the Dichroscope appears double and the two squares in two different colours.

Here is a short Synopsis of the Pleochroism of a few pleochroitic jewels, giving the different colours in which the two squares of the Dichroscope appear when daylight is used:

JEWEL	NATURAL COLOUR	DICHROSCOPIC COLOURS	
Ruby	red	light red with yellow tinge	dark red
Sapphire	blue	light blue with green tinge	dark blue
Sapphire	green	yellow green with brown tinge	green
Emerald	green	yellow green	blue green
Alexandrite	green	dark green	greenish yellow to raspberry red
Topas	blue	faint to colourless	blue
Zircon	green	light greenish blue	dark greenish yellow
Kunzite	pink	tinge of pink	violetrose
Corundum synthetic	pink	yellowish	pink
Corundum synthetic	dark red	yellowish red	blueish red

The Dichroscope is furnished as regular equipment with both types of the Detectoscope as well as with the Detecto-Microscope. It can also be purchased alone.

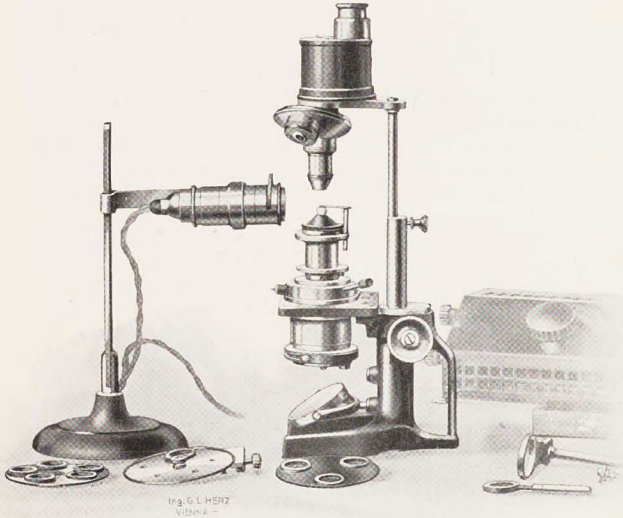
For full information concerning Pleochroism of all existing jewels, refer to Dr. H MICHEL'S BOOK FOR JEWELERS AND LAPIDARIES, GUSTAVE L. HERZ, EDITOR.

The Gemoscope

Trade Mark registered

MICHEL, RIEDL & HERZ

Patents pending!



THERE are cases where the expense of equipping a laboratory would not be warranted.

The endeavour to equip the small jeweler with a universal apparatus for the examination of the material he purchases and to find whether the pearls and stones which are offered to him for purchase, are Genuine or Artificial, has brought this small, condensed apparatus to the fore, the Gemoscope.

It is equipped with the accessories necessary for all ordinary examinations occurring during the day and can also be taken along on voyages owing to its small size.

Pearls are examined by introducing a mirror-needle into the drilled hole of the pearl. The holding device is a simplified Cardiometer. The interior of the pearl is examined under enlargement through the microscope, there being the choice between two grades of enlargements.

The illuminating apparatus is ambulant, the rays being either directed straight upon the pearl (as illustrated above) or when examination in the translucent light is desired, the rays are directed upon a mirror and reflected into the interior of the pearl by means of a condensor.

The examination of precious stones is carried on with this apparatus after removal of the needle-holder from the Microscope-table. The Gemoscope may either be furnished with the Dichroscope for the examination of the Pleochroism of the stones or with a Nicol prism which permits carrying the examination further to colourless stones.

An Immersion Cup is furnished with the Gemoscope and the examination of all crystalline substances under immersion in Monobromonaphtalin or Benzol is recommended.

The Gemoscope is a small, completely equipped apparatus for all usual examinations and is recommended for all cases where a larger laboratory would be decidedly out of place. The Gemoscope is furnished with full equipment, complete instructions and all necessary tabulated data, in a fine, polished, hardwood-case with lock and key.

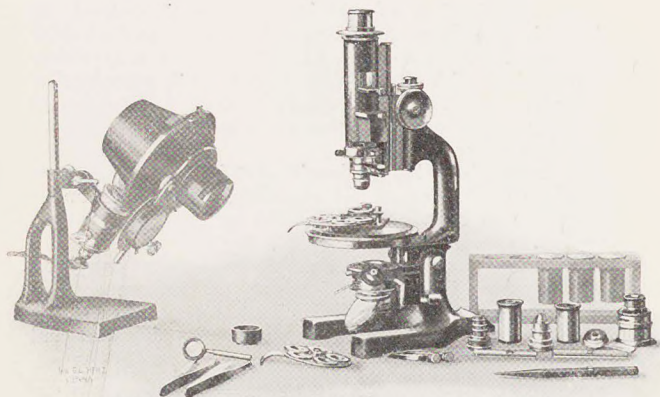
Prices upon application.

See Dr. MICHEL'S Pocketbook for Jewelers.

*Address all orders and inquiries to Gustave L. Herz, Vienna I. Burgring 1
Austria*

The Mineraloscope

A special mineralogical microscope with colourfilters for the exact examination of jewels of all kind.



T jeweler who would purchase a jewel by its weight and outside appearance exclusively would be due for a cruel awakening some day.

Time and again we have been shown jewels, Rubies and Sapphires of exquisite appearance, which were the pride of old grizzled experienced jewelers and which upon proper examination turned out to be fine synthetic "pigeonblood Rubies" etc., worth 1/ 000 of what their owner who had purchased them "directly from the mines" had thought they were worth and what he had paid for them.

The examination with the magnifying glass is *not sufficient*. Modern synthetic stones are made minus the telltale bubbles & blowholes.

It is of the utmost importance to examine the Interior Construction of the gems in order to decide upon their intrinsic value.

Look for "God's fingerprints" in the genuine jewel with the Mineraloscope.

The Mineraloscope is an apparatus built for the special purposes of large stone dealers and lapidaries, suitable for the examination of set and unset stones of all kinds. It is the most complete equipment of this kind ever made.

The exquisite optical equipment comprises the microscope proper with mirror and full lens-equipment (4 Objectives, 2 Haircross oculars) for enlargements from 30—700 times, with Micrometer Adjustment, Polarisator, Turntable and Lampequipment, ready for attachment to any light-socket, a complete filter-equipment with two filter-disks and handfilter and also full complement of immersion cups is furnished with the apparatus.

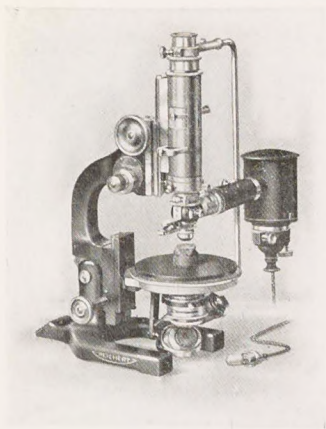
Complete explanation and all necessary tables are part of the equipment.

The Mineraloscope comes in a tightly fitting, finely polished hardwood box, the equipment neatly arranged in drawers, all under lock and key.

Prices upon application.

See Dr. MICHEL'S Pocket-Book for Jewelers.

The Metaloscope



A special microscope for the examination and optical analysis of platinum, gold, silver and all other metals, entering the manufacture of jewelry.

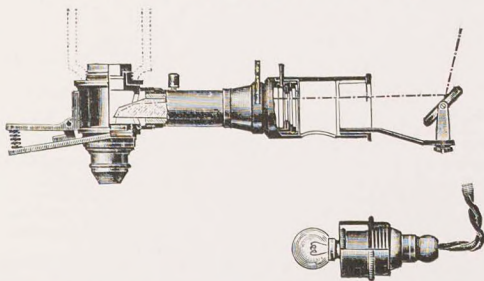
The polished metal surface, after it is especially treated, reveals not only the exact structure of the metal, but also in a clearly visible way the ingredients of the metal mixture.

This optical analysis is superior to the chemical analysis and permits clearer decisions than the former, though extremely simple to perform.

All metals entering the manufacture of jewelry should be examined under the Metaloscope.

Attachments to the: Mineraloscope,
Jewelers Microscope & Metaloscope

The Vertical Illuminator



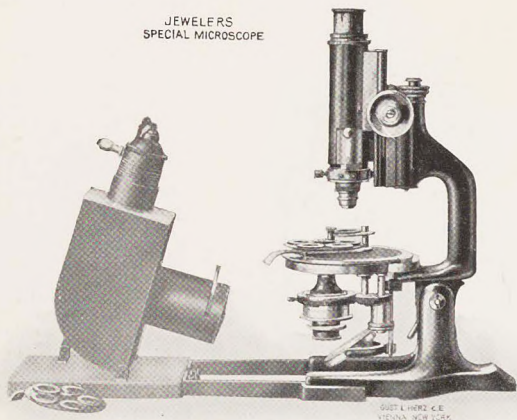
THE Vertical Illuminator is used for the examination of the surface of pearls and gems, when attached to Mineraloscope or Jewelers Microscope.

It is furnished with lamp and resistance and may be connected to any lampsocket or otherwise used in ordinary day-light. The surface of pearls, imitations, doublettes, settings etc. appears so clearly that any defect is immediately recognized.

It may be attached to any microscope.

The Jeweler's Special Microscope

JEWELERS
SPECIAL MICROSCOPE



EVEN the smallest jeweler's shop is confronted with the problem of deciding between genuine and synthetic stones. This has led us to construct the instrument illustrated above, which is simplified as compared to the Mineraloscope, but will serve the purpose admirably in all cases where the equipment of a larger laboratory is out of question.

Unset jewels, as well as jewels already set in rings, brooches, bracelets etc., may be examined with the Jeweler's Special Microscope in ordinary or polarized light-rays.

The source of light is a Lamp, as shown in the illustration. The light rays coming from the Lamp are reflected into the Condensor, collected there and thrown on to the jewel placed on the microscope table.

Rack and Pinion as well as Micrometer permit the adjustment of the tubus to the focus of the lens. The table of the Microscope is revolvable and equipped to receive the Filterdisks. One objective lens, which has been found to be the best suited for the observation of coloured stones is furnished with the apparatus.

The Jeweler's Microscope may be furnished with or without the Filterdisks for the examination of stones in filtered light. It is shipped in a polished hardwood box with lock and key.

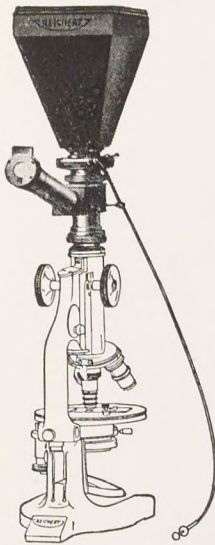
Prices upon application.

Please state voltage at your disposal when ordering.

See Dr. Michel's Pocketbook for Jewelers, Lapidaries and Pearldealers, for exhaustive information concerning all methods of examining jewels with the Jeweler's Microscope.

Direct all inquiries and orders directly to: Gustave L. Herz, C. E., Vienna I., Burgring 1.

The Cerny Micro-Camera



The Camera may be used in connection with either the Mineraloscope, Metaloscope or Jewelers-Microscope and serves a variety of purposes.

Camera for precious Stones: We furnish a special lamp equipment for this purpose (No 785 a) in outside appearance similar to the lamp illustrated on page 24, but equipped with low voltage bulb, condenser and low voltage resistance. It may be connected to any lampsocket.

Camera for Surfaces of pearls and other non transparent substances: This equipment comprises the above Camera in connection with the Vertical Illuminator and a special lampequipment (No 331 a). A special resistance is used for the purpose (No 334 k) which also connects to the next lamp socket.

THE MICRO CAMERA AS A SALESMAN: There is no greater inducement to buy than showing your customer the interior characteristics of a genuine stone or pearl by throwing the picture on the ground glass of the Micro Camera. The lustre of the pearl depends upon thickness and colour of its layers of pearl substance, the interior of the natural stone, "its silk" is the product of the natural enclosures of the God-created piece which the man-made counterfeit can never show.

The focussing of the object in the Camera is done by looking at the object through the side-visor, shown above. A pointer may be used *at the same time* to point at the interesting part of the picture on the ground glass, according to the wishes of the observer.

Important gems will in future hardly be bought and important investments scarcely be made, except when genuineness is apparent from accompanying MICRO PHOTOGRAMS, also recording the identity of the jewel for all times.

Address all orders and inquiries to Gustave L. Herz, Vienna I. Burggring 1 Austria

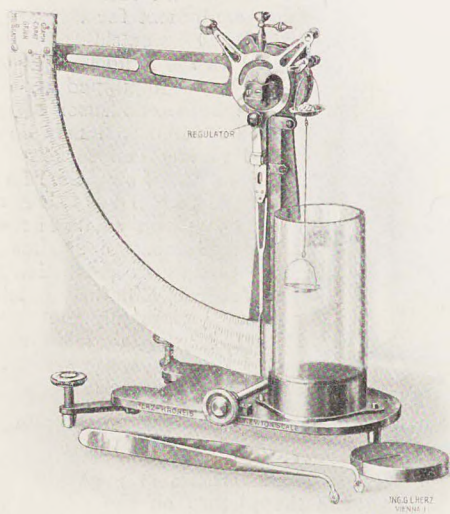
HERZ - KRONEIS

patented

"Newton Scale"

D. R. P. a - Patents pending!

D. R. G. M.



THE problem of a small, accurate Jeweler's Scale without loose weights has long been considered impossible of solution until in compliance to the repeatedly expressed wish of the trade, the famous Viennese balance-maker Kroneis in collaboration with the writer, succeeded in constructing the above illustrated small masterpiece of precision.

The Newton Scale is only $8\frac{1}{2}$ in. in height and is an ornament to the finest shop. It is a small springless lever-scale, designed to give direct readings of *Carat*, *Grain* and *Milligram* and at the same time, with a very quick change, permitting the establishing of the *specific gravity* of a gem by a quick and simple procedure.

The Newton Scale is constructed of bronze in its frame. Two adjusting screws establish the correct position of the balance which is achieved when the small pendulum plays exactly over the needle point beneath it. The vertical balance beam of the scale swings with a hardened and accurately ground steel prism over a hardened and ground plate, giving the highest possible sensitiveness.

The Newton Scale has two small basins. The upper one in free air directly fastened to the short beam of the balance and hanging beneath it on a thin platinum wire, is another small perforated basin which is constantly immersed in distilled water. Both basins together are delicately suspended from the short beam over frictionless hardened steel edges and may easily be detached. The upper basin serves for regular weighing, the lower one for the specific gravity.

The Newton Scale has two settings according to the weight of the article to be weighed. The matter is regulated by a counter-weight which is made operative with a shorter lever for lighter pieces up to 1000 milligrams and with a larger lever for heavier pieces up to 3000 milligrams. The counter weight is snapped into its upper position and appears with a red disk corresponding with the scale in red figures, whereas for larger weights the counter weight is snapped into its lower position, indicated by the disk appearing in black colour, corresponding to the black figures on the scale.

Pearls are weighed with the counter weight in its upper (red) position and the *weight in Grain* red off the red portion of the scale.

Finding the specific gravity of a stone is a very simple procedure with the Newton Scale: First of all the object is weighed by placing the same on the upper basin and reading the actual weight of the object on the scale (A). During this weighing the lower basin serves as damper only. The scale is then arrested and the object placed in the lower basin and the weight of the article in distilled water established (B). A minus B then gives a difference C. The specific weight of the substance is the result of the division of figure A by the loss in weight by immersion in water C.

$$A : C = S \text{ (specific gravity)}$$

The pointer of the balance-beam should point to zero on the scale when the beam is released from its support.

A small adjusting weight in the shape of a knurled handnut makes adjustment of the pointer to zero an easy matter.

The Newton Scale is furnished in a fine hardwood box with lock and key and makes a splendid ornament on any jeweler's table.

The measuring of the specific gravity of a precious stone is not a procedure of purely scientific interest but serves to identify stones of otherwise the same colour and appearance.

Table of the specific gravity of some precious stones by Dr. H. Michel:

OPAL	2.16	— 2.30
LAPIS-LAZULI	2.38	— 2.64
ADULARIA (Moonstone)	2.50	— 2.58
JASPER	2.56	— 2.76
AGATE (Chalcedony)	2.58	— 2.60
TURQUOIS	2.62	— 2.80
SUNSTONE (Feldspar)	2.65	
QUARTZ (Amethyst, Citrine)	2.64	— 2.66
BERYL (Emerald, Aquamarine, Morganite, Heliodor)	2.67	— 2.75
NEPHRITE (Hip Stone)	2.88	— 3.—
TOURMALINE	3.—	— 3.20
HIDDENITE (Lithion Emerald)	3.15	— 3.19
KUNZITE	3.15	— 3.19
ANDALUSITE	3.17	— 3.20
JADE	3.32	— 3.35
CHRYSOLITE (Olivine, Peridot)	3.33	— 3.39
EPIDOTE	3.35	— 3.49
LABRADORITE (Labrador Feldspar)	2.62	— 2.74
DIAMOND	3.50	— 3.52
TOPAS	3.50	— 3.52
SPINEL (Red Spinel, Spinel Ruby)	3.60	— 3.63
KYANITE	3.60	— 3.68
HESSONITE	3.60	— 3.63
MALACHITE	3.70	— 4.10
CHRYSOBERYL (Alexandrite, Cymophane)	3.68	— 3.78
PYROPE (Bohemian Garnet)	3.69	— 3.78
DEMANTOID (Green Garnet)	3.83	— 3.85
AZURITE	3.80	
CAPE GARNET (Cape Ruby)	3.86	
CORUNDUM (Ruby & Sapphire)	3.90	— 4.10
ZIRCON	4.00	— 4.75
ALMANDINE	4.11	— 4.23
HAEMATITE	4.70	

The complete equipment consists of: Hardwood cabinet, Scale with footboard, and Herz' Patent Tweezer.

STANDARDS of the International Jewelers Association:

1 GRAMME = 5 Carat = 100 Grain

1 Carat = 20 Grain = 0.2 Gramme

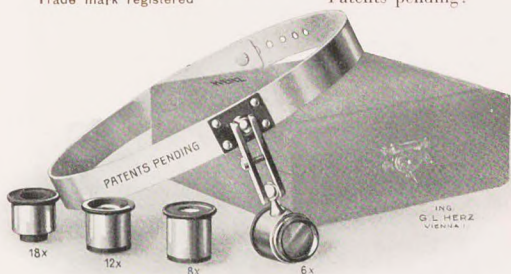
Address all orders and inquiries to Gustave L. Herz, Vienna 1. Burggring 1. Austria

Herz's Patent
Forehead Lenses "Polyphem"

(CYCLOP)

Trade mark registered

Patents pending!



AN excellent method for the Preliminary Examination of Pearls and Jewels is the one with Herz' Forehead-Lens "Polyphem". The ordinary magnifying glass which is usually pressed into the orbit cannot be made with greater magnifying than 4—6 \times , on account of its weight becoming too great to hold.

The inventor has succeeded in combining even lens-sets with an enlargement up to 18 \times with an elastic head strap, so that the lenses can be brought into the best possible position in front of the eye. The lenses can be readily and quickly exchanged, even though the strap remains in its place.

BOTH THE OBSERVERS HANDS ARE FREE to hold and to turn the object into the best position for the observation.

The forehead band is adjustable to any size of forehead by pressing a button in or out of several holes. The strap is made of white opaque Gallalith and is once and for all adjusted to the head-size of the user. In large workshops or offices several forehead straps may be used in connection with one lens-set.

Any of the four lens-systems may be slid into the holder sleeve which is movable in two ball joints, so that any desired position may be taken before the eye, or the sleeve pushed upward when not in use.

The lens-systems are made of carefully selected rock-crystal, furnishing achromatic pictures free of coloured borders.

The lens-systems are selected to magnify 6 \times , 8 \times , 12 \times or 18 \times at the option of the user.



The forehead lens-set "Polyphem" (Cyclop) is furnished in a fine velvet lined case, holding strap and lenses dustproof and should not be missing from any jeweler's salesroom or workshop.

It is also used to great advantage by watchmakers, gold and silver smiths, engravers, draftsmen, etc.

We furnish the following combinations:

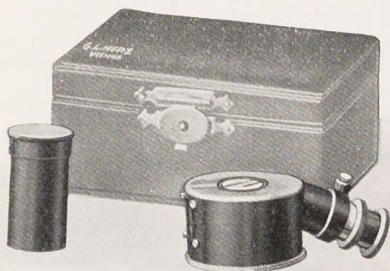
Polyphem with 4 lenssets: 6 \times , 8 \times , 12 \times and 18 \times .
Polyphem with 3 lenssets: 6 \times , 8 \times , 12 \times .
Polyphem with 2 lenssets: 6 \times , 12 \times .
Polyphem with 1 lenssets: 8 \times .

You may have your own choice of enlargements.

We also furnish extra-straps to a set of more than one lens.

Address all orders and inquiries to Gustave L. Herz, Vienna I Burgring 1 Austria

Dr. MICHEL'S
Pocket Refractometer



THIS handy little pocket instrument is an accessory of great value to the jeweler. Two jewels may be exactly alike in appearance, colour, lustre, etc., and still be two jewels, *widely apart in value*. Although alike to the human eye, they will show different refraction when examined with the Refractometer.

Description: The Pocket-Refractometer consists of two cylinders connected under an angle of 30 degrees. The smaller cylinder holds an ocular lens with a crystal prism. The larger cylinder bears in its center a semi-globular crystal lens, made of highly refractory glass, with the flat side of the globe on the outside. The semi-globular lens can be turned around a vertical axis.

The light rays enter through a window in the wider cylinder.

The index of refraction is measured with this instrument, which also shows whether the examined jewel is of single or of double refraction.

The Procedure:

The jewel is first examined with Herz's Forehead Lens for the selection of its evenest and smoothest surface. This surface is carefully cleaned with Benzol and placed on top of the highly polished outside surface of the globular Refractometer Lens.

Before placing the jewel on top of the Refractometer, a drop of Monobromonaphtalin or Barium Mercury Iodine solution out of the small bottle furnished with

the instrument, is put on that surface and the jewel placed into it.

By turning the opening in the cylinder against the light, one can immediately read off the Index on the green scale inside the instrument.

The Index is found over the line, separating the lighter part of the scala from the darker part.

Jewels with double refraction show two separate lines.

It is well to revolve the center lens into the best position.

Explicit explanations and directions are furnished with the instrument.

A list of the Indexes of some often used jewels:

JEWELS WITH SINGLE REFRACTION:

FLUORSPAR	1,44
OPAL	1,46
SPINEL	1,72
HESSONITE	1,76
PYROPE	1,75
ALMANDINE	1,77
DEMANTOID (Green Garnet)	1,90
DIAMOND	2,43

JEWELS WITH DOUBLE REFRACTION:

ROCK CRYSTAL	1,56, 1,55
BERYLLIUM (Emerald)	1,56, 1,55
TOPAS	1,63, 1,62
TOURMALINE	1,64, 1,62
CHRYSOLE	1,70, 1,66
CHRYSOBRYL	1,76, 1,75
CORUNDUM (Ruby, Sapphire)	1,77, 1,76
ZIRCON	1,97, 1,92

The Refractometer can also be furnished with a Stand for the use in the laboratory.

The Refractometer is furnished in a fine velvet-lined box, containing the instrument and a crystal bottle with dropper and all tables and instructions.

See also Dr. Michel's Pocketbook for Jewelers, Gustave L. Herz, editor, Vienna I., Burgring 1.

*Address all orders or inquiries to Gustave L. Herz, Vienna I. Burgring 1
Austria*

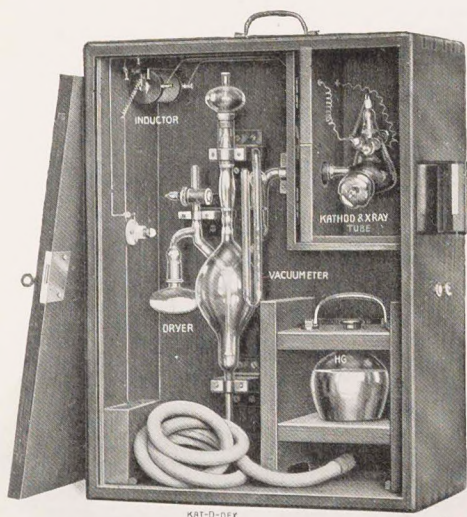
RIEDL, MICHEL & HERZ
The Vacuum Rayonneur

D. R. C. M.

Registered Trademark

Patents pending!

*An apparatus for the examination of jewels under
 Cathode and X-rays.*



KAT-D-DEX

JNG HERZ WIEN
 BURGRING 1



QUICK decisions are sometimes to be made between stones of the same colour and appearance, but of strongly different value if correctly identified.

As an example:

Between a Siam-Ruby and a Fire-Opal

or: Between a Zircon and a real Diamond

or: Between a Kunzite and a rose Tonrimaline, or you desire to enhance the appearance of a diamond to be sold to a customer. By subjecting that Diamond to the Cathode-rays, they will make that jewel emit rays of such incredible splendour and beauty, as if too brilliant for the unprotected, naked eye.

The Vacuum-Rayonneur represents the solution of a problem, long thought impossible of realisation. Here it is as a small compact apparatus for every-day use, making the examination of any substance under Cathode-rays or X-rays an easy matter. It is an accessory of tremendous importance to the Jeweler and Jewel-Buyer, Lapidary or Dealer, all contained in a polished hardwood box of 8×15×19½ in., ready to be used any instant *without electrical connections of any kind.*

Description:

The Vacuum Rayonneur consists of:

The Mercury Air Pump, The combined Cathode and X-Ray Tube, The Inductor, The Air Dryer, The Vacuummeter, The Battery and

The Level-Vessel containing the Mercury and a rubber hose connecting the vessel to the air pump,
The hardwood box with 1 detachable, 1 fixed and 1 inside door and curtain.

The Mercury Air Pump is a master-piece of the glass-blower's art. It has two superimposed valves of carefully fitted glass cones, providing a perfect seal to the vacuum once established.

The main air reservoir is in the center of the cabinet and fastened to the back thereof. It tapers downward, ending into the connection with the flexible armoured rubber-hose which again leads to the Level-Bottle.

The Level-Bottle in which the Mercury collects, is held upright in a wooden cage with a handle.

The Air Dryer is on the left. It is a detachable glass-vessel filled with Phosphorpenoxyde (P_2O_5) and joined to the main air reservoir with a perfectly ground and fitted glass-cone.

Equally detachable is the Vacuummeter on the right side. A small incandescent bulb lights up the interior of the cabinet and facilitates the reading of the Vacuummeter.

The Cathode Tube or the Combined Cathode and X-ray Tube is enclosed in a cabinet by itself, having a hinged door on one side and a small side-opening with flaps which hold off the outside light rays from the observers eye. The Tube is a pearshaped bulb with an extension terminating in a hollow ground glass stopper which also serves as a holder for the perforated aluminum table on which the stones and gems are placed for the examination.

The tube once evacuated by lifting and descending the Level Bottle, the front door is closed and by pressing the red push button on the outside of the case, the desired rays are generated.

Extraordinary phenomena take place, when various precious stones or minerals are subjected to the rays.

The quality to appear more or less brilliant, seemingly emitting light and heat when subjected to Cathode or X-rays is called Luminescence, especially when it continues even after the agitating rays have ceased to influence the mineral.

Here are a few cases showing the effect of Cathode rays on a few precious stones:

DIAMONDS *and their imitations:*

The DIAMOND when subjected to Cathode rays begins to glow in a sparkling blue light of its own, of a brilliancy which makes it too strong for the unprotected eye. It appears as if it were white-hot and bursting into flames. *Imitations remain dead and unaffected.*

The Diamond can be classified as to its origin by the different appearance of stones from different mines under Cathode rays.

COLOURED STONES:

Red Stones

JEWEL	NATURAL COLOUR	UNDER CATHODE RAYS
Beryllium	rose	glows light red, different from Ruby, strong luminescence
Kunzite	rose	glows very strongly orange, strong luminescence
Ruby, genuine	all red shades	glows vivaciously red

Blue Stones

Sapphire, Montana	light blue	glows wine red
Sapphire, Australia	greenish blue	weak blue luminescence weak
Sapphire, Birma	dark blue	glows dark wine red or greenish blue
Sapphire, Ceylon	light blue	glows vivaciously red
Sapphire synthetic	dark or light blue	glows light blue with a tinge of violet, sometimes light reddish.
Zircon, from Siam	blue	in high vacuum blue, in low vacuum yellowish blue, in both cases very intense luminescence

Green Stones

Emerald	green	glows dark red
Corundum, genuine	green	not affected
Corundum, synthetic	green	glows dark orange

The Laboratory

of the Jeweler and Lapidary



THE good old times, when the jeweler could purchase his materials on the open market without taking the trouble of carefully examining the same, are passed once and for all. It would be utter self-destruction for the man in the trade to go and purchase materials on the say-so of the seller and cover his own sales to his costumer with his guaranty. There is no jeweler in the world to-day who can afford to be without a laboratory, be it ever so simple.

We furnish complete laboratories:

A Complete Laboratory for the Pearl-Merchant consists of:

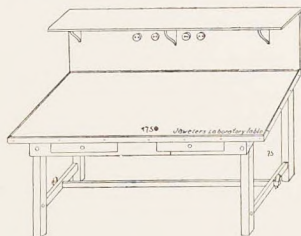
- | | |
|------------------|-----------------------|
| a) Perlometer | e) Polyphem |
| b) Pearl Compass | f) Newton Scale |
| c) Refracteur | g) Herz-Matrix-System |
| d) Densiscoper | h) A Tweezer-Set |

A Complete Laboratory for the Jeweler and Lapidary consists of:

- | | |
|------------------|-------------------|
| a) Mineraloscope | e) Polyphem |
| b) Metaloscope | f) Micro Camera |
| c) Detectoscope | g) Refractometer |
| d) Newton Scale | h) Brillantoscope |

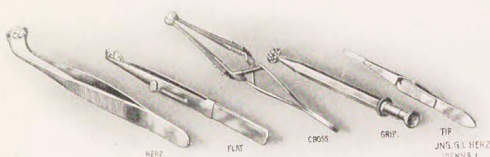
I furnish complete laboratories as well as simplified sets as per agreement.

THE LABORATORY TABLE



The above illustrated table has been especially designed for this purpose and has found the trades endorsement. It consists of Larch-wood the top is hardened and polished Linoleum. The table is entirely detachable and takes up very small room in knocked-down position for transport.

Accessories for Jewelers



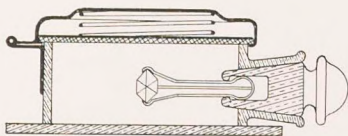
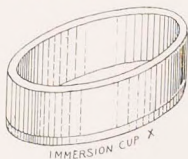
The Tweezer-Set consists of:

- a) a normal straight tweezer (steel) with corrugated flats (Normal)
- b) the Jewel-Tweezer (Herz' Patent)
- c) a straight tweezer with corrugated ends with lock (Flat)
- d) a Pearl-Tweezer with crossed steel spring with horn ends (Cross)
- e) a patent gripper for stones (Grip)
- f) a flat tweezer für metal and steel needles (Tip)

IMMERSION CUPS

We have 3 types of immersion cups:

- I. Immersion cup as illustrated, round, without base-plate
- II. Immersion cup round base-plate
- III. Immersion cup Riedl & Herz



IMMERSIONS NAPF nach RIEDL u. HERZ

Prices upon application.

Address all orders and inquiries to:

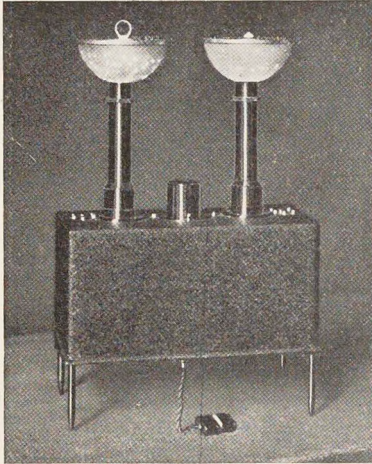
GUSTAVE L. HERZ, C. E.
VIENNA (AUSTRIA) I. Burgring_1

The Brillantoscope

Prof. Johnsen, University of Berlin, Inventor

D. R. P.

Patents pending!



The value of a stone depends almost entirely upon its brilliancy and colourdispersment, which in turn depend to a great extent upon the correctness of the cut and the kind of cut applied to the jewel.

The jewel, be it a Diamond or any other kind of colourless or coloured gem will not divulge at a glance mistakes that have been made in the cutting. This instrument shows them greatly magnified.

THE CONSTRUCTION:

The Brillantoscope is an electrical apparatus which may be connected to the next lampsocket. It is very easily handled.

The Brillantoscope consists of a metalhousing on 4 legs, with two vertical extensions rising from the top of the housing and bearing on their upper ends globular cups of ground milkglass with a ground glass covering unto which the jewel is placed. Incandescent lamps in the interior send their lightrays through a system of achromatic lenses and prisms into the upper milkglass halfglobes and through them into the jewels which again reflect these rays to the surface of the glassglobes.

These appear more or less lightspotted and colored, according to the faculty of the jewel to disperse the light properly.

The illustration shows the effect of a ring set with a Diamond (left side) of 1 Carat as against the effect of a Sapphire of 4 Carat (right side) cut as a diamond. The difference is immediately apparent.

The apparatus measures approx: 12×17 and 22 in height.

Two or more Diamonds can be compared with each other, white Topas, Zircon, White Sapphire readily separated from Diamonds and

*the Quality of Diamonds judged and classified
as to their quality of light dispersion as well
as the quality of their cutting.*

Another exceedingly valuable use of the Brillantoscope is the *enhancement of the beauty of a jewel*, be it a ring, bracelet, brooch or stickpin, *TO A COSTUMER* by placing it on the Brillantoscope. *It is the best jewelry Salesman imaginable.*

The Brillantoscope is furnished with complete instructions.

State Voltage used when ordering.

Direct all orders and inquiries to: GUSTAVE L. HERZ, C. E.
VIENNA I. Burgring 1

The Illustrated Pocketbook
for
Jewelers, Pearl- and Gem-Dealers
by D. Hermann Michel

Director of the Imperial Hofmuseum of Vienna.



IN the days of Harun al Raschid, the gem-dealer sitting in the market place of Bagdad had and needed no other equipment for his calling other than his naked eye and possibly a crude balance.

Times have changed. The gem-dealer of to-day must take precautions for his own protection and that of his customers, lest he be cruelly taken advantage of by the unscrupulous. This is becoming increasingly apparent every day and it is essential that Jewelers, Gem- and Pearl-Dealers know the exact value and quality of their stock and their purchases.

Dr. Hermann Michel, the famous mineralogist of Vienna, whose name has become known all over the globe by his fundamental researches in the field of pearls and precious stones and whose publications have appeared in all languages, is the author of this book. *The Pocketbook for Jewelers and Pearl- and Gem-Dealers is an indispensable manual for the table and pocket of every man in the trade. It gives positive explanations in all questions arising in the practice of the jeweler.*

All methods for the examination, classification and valuation of pearls and stones are explicitly described, tabulated and last but not least, profusely illustrated in colours (colourplates printed in 8 colour shades).

About 50 Micro-Photographs of the interior construction of pearls, genuine and cultivated and innumerable Micro-Photographs of the interior characteristics of all existing coloured precious stones are contained in this book.

The book is bound in a Loose Leaf Ring-Binder with semi flexible cover. It contains all informations in *tabloid form* and so easily comprehensible that it is an extremely valuable handbook to the scientist in his laboratory as well as to the dealer in every-day's commerce.

The Ringbook-form has been chosen, because it is proposed to keep in constant touch with the purchaser and to furnish him all additional informations which researches add to the present stock from time to time. While of tremendous scientific value it is of *inestimable value* to the trade, only inadequately to be expressed in pounds and dollars.

Millions of dollars have been saved already during the short time since its publication.

Dr. Michel's Pocketbook for Jewelers and Gem- and Pearl-Dealers holds a unique place in every respect.

The book is epochmaking if ever this expression was justified.

The Incubus of Incertitude so long oppressing the trade has been destroyed, the veil lifted, a period of absolute clarity inaugurated.

The questions:

How am I to detect a Cultivated Pearl?

How am I to determine the value of a Real Pearl?

How am I to select the Genuine Gem from the multitude of synthetic stones offered in the market? :

How am I to determinè the value of a cultured pearl?

are once and for all answered without possibility of a shadow a doubt in the mind of the interested party, once he is able to look up the questions in Dr. Michel's pocketbook. The cost of this book is saved many times during a single day.

It is indispensable to you.

There is a limited number only to be had.

Subscribe now: Gustave L. Herz, editor, Vienna I., Burgring I., Austria.