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## FORMULAS FOR BOOKBINDERS

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[No. 57a.] *Entire Varnish Filler.* Zinsser's or any other good bookbinders' copal varnish, diluted with alcohol (grain or wood) in proportion of one part of varnish to every three parts of alcohol, makes a fairly good filler, suitable for emergencies. However, it possesses some properties which would render its general use objectionable. Some of these are: Its cost, which is considerable; it is very apt to drag more or less in burnishing; it will leave a plainly visible size line on some papers, and the finished edges do not retain their brilliancy very long.

Edge Gilding  
and Metal Edges.  
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Fillers.

[No. 58.] *Soap and Glue Filler.* Cut two whole pieces of No. 13, put them into a quart china bowl, add one-third of a cupful of hot water (not boiling hot), and dissolve in bath. Heat up one-third of a cupful of No. 21, using an agate-ware dish for this purpose, and add it to the gelatine. Both solutions must be very hot. Next add one cupful of glue stock (see page 72); one and one-half teaspoonfuls of powdered French chalk; two and one-half teaspoonfuls of gilders' whiting. When you have these ingredients mixed well with a folder, add one cupful of cold water.

Soap and Glue  
Filler.

Bottle and shake well before using. In cold weather this filler will of course thicken, and then it must be warmed before it can be used, by placing the bottle in hot water for a few minutes.

This filler, though good, is not nearly so effective as No. 57. It is rather better suited for filling after scraping. It must not be used on surface-coated and writing papers, as its use on these papers would cause the gold to drag in burnishing.

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### HOW TO PREPARE GLUE STOCK

To two ounces of good ground glue (cabinet-makers' glue is preferable) add one teaspoonful of carbolic acid, one teaspoonful of salicylic acid and one quart of boiling water. Dissolve in bath and add two and one-half ounces of white castile soap cut into very small pieces, or, better yet, scraped with a knife. Stir occasionally, and when the soap has been quite dissolved, add one and one-quarter ounces of powdered alum. The addition of the powdered alum will at once turn the solution milky white. This preparation, put into an earthen crock and covered, will keep. Cabinet-makers' glue usually comes in small, broken pieces (flakes). If in this state, it will be better to add the quart of water, let stand over night, add the acids in the morning, dissolve in bath and proceed as above.

Edge Gilding  
and Metal Edges.

Fillers.

Soap and Glue  
Filler.

## PART THREE

### BOOK-EDGE-MARBLING AND COLORED EDGES

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### BOLE (RED CHALK) PREPARATIONS

**E**XPERIENCE has taught us that just before laying on, a little color on the edge to be gilded will heighten the brilliancy of the finished edge. Red Armenian bole (there is a yellow variety, but it is not very suitable for this purpose) was found to be peculiarly adapted to the purpose, because of its brick-red color and talcum-like properties, which makes burnishing easy and aids considerably in producing a good lustre. But there are many grades of this material in the market, ranging in quality from the finest of talcum powder to some which is little better than sand. You can buy it both in powder and in lumps; I prefer the powdered. Take a little of the bole between the ends of the fingers and rub it; if it feels perfectly smooth and leaves the tips of your fingers shiny, the article is good. It is not necessary to place your orders for it with some large out-of-town house, in expectation of getting the best. The best bole I ever used I bought in a retail drug-store in Buffalo. I bought all the man had, about four ounces, and asked him to order some more of the same quality, but so far he has not been able to replace that stock. The article is usually called red chalk, and most gilders know it by that term only.

[No. 59.] *How to prepare it for gilding.* Put three or four teaspoonfuls of bole into a cup and add from five to ten drops of beechwood creosote; mix with hot water to a stiff paste and add a teaspoonful of flour paste. Mix well, working out all lumps and add sufficient hot water to make about three-

Edge Gilding  
and Metal Edges.

Bole  
Preparations.

Bole with Paste.

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quarters of a cupful. Now let stand a few minutes and then carefully pour off into a clean cup, without disturbing the useless bole sediment.

Edge Gilding  
and Metal Edges.

Bole  
Preparations.

Bole and  
Plumbago  
combined.

[No. 60.] *Bole, Plumbago (Black Lead) and Gelatine.* Plumbago (black lead) possesses burnishing properties in high degree, but its color, being black, causes edges to assume a rather silvery hue, when it is used exclusively. But why not mix a small portion of it with the bole? Unfortunately, black lead is insoluble in water; it will simply collect on the surface; however, I have overcome that difficulty, making it possible to combine them perfectly, thus giving a preparation possessing all the good qualities of both and so well bound that the bole will neither rub nor drag in burnishing. Cut into small pieces two whole tablets of gelatine (see No. 13), place in a half-pint cup and fill with cold water to within about a half inch of top. Let stand over night, preferably two days, then dissolve thoroughly in bath. While the gelatine is heating, put into another half-pint cup three heaping teaspoonfuls of powdered bole, and one generous even teaspoonful of plumbago, mix well with a folder and add to it of the now hot gelatine solution only sufficient to form a very stiff paste. Stir this paste until it is perfectly smooth, but do it as quickly as possible, and add to it from three to four teaspoonfuls of pure grain-alcohol. Stir again. The mixture should now be of the consistency of thin paste. Add what remains of the gelatine solution, stir well, let stand a couple of minutes and then carefully pour off into a clean cup, without disturbing the useless bole sediment. The preparation is now ready, but it is

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undesirable blue tint, and care must be taken to avoid this.

[No. 67.] *Eosine, Oil of Spike and Alcohol.* Eosine dissolved in oil of spike and alcohol with the addition of a little boiling water will give better results on some other grades of papers. The presence of the oil of spike in the color will not interfere in the subsequent gilding, and will brighten the color.

[No. 68.] *Eosine dissolved in the No. 57.* In most cases, a little of the dye added to this filler will be all that is necessary.

Red-under-Gold  
Edges.

In some instances it will be best to apply the color solution warm. It is needless to say that any other color besides red can be used for this purpose, yet the selection must be confined to dye-stuffs. Use a soft bristle brush for applying the color; in some instances a large, flat camel's-hair brush is better. Finally, a little judgment and practice will soon enable you to know which one of the preparations enumerated is best suited for any particular grade of paper. The No. 68, however, is the most practicable. In all red-under-gold work, bole may be safely used in connection with the gilding, preferably the No. 60a. If for any reason the application of bole is to be omitted, it will be advisable to rub down with either No. 57, 58 or 64. This will have the good effect of fixing the red color somewhat.

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not advisable to apply it while still hot. In cold weather it thickens somewhat and has to be dissolved in bath before using; still, it can be applied, even if not entirely fluid, in which state it is about the consistency of starch paste. When using, it is well to stir the preparation occasionally, a small stick of wood or a folder may be kept in the cup for this purpose. In hot weather this bole preparation will turn sour within a few days, and it should not be used when decomposition is well advanced. I have tried the addition of preservatives, but find that their presence has an unfavorable influence on the gilding. The preparation of the bole requires so little time and is so simple, that any attempt to stay decomposition, at the risk of probably turning out inferior work, seems unwarranted. When used on writing or surface-coated paper, this preparation is apt to drag a little in burnishing. To prevent it, use a little less plumbago than specified, or use the No. 59.

[No. 60a.] *Bole and Carbolic Acid.* To one-quarter cupful of powdered bole add about two teaspoonfuls of common flour paste and from fifteen to twenty-five drops of commercial carbolic acid. Mix somewhat with a folder and reduce with hot water to the consistency of cream. Do not use it too thin. ¶ Though very simple, this formula gives positive results.

Edge Gilding  
and Metal Edges.

Bole  
Preparations.

Bole and  
Plumbago  
combined.

Bole with  
Carbolic Acid.

LAYING-ON SIZES (GLAIR)

**F**OR laying on, nothing is perhaps more suitable than albumen size. Whether that made of fresh eggs is preferable to the kind made of dry albumen, or vice versa, is, I think, largely a matter of opinion. Although I prefer the latter, I will give directions for the preparation of both.

[No. 61.] *White of Egg Size (Glair)*. To the white of a fair-sized egg add a scant pint of water—use soft water if it is to be had. As a matter of fact, soft, or, better still, distilled water is preferable to spring or hard water for any chemical preparation. Clean snow melted, rain-water or condensed steam (the latter is always to be had wherever steam is used) are equal to commercial distilled water. Put the mixture into a one- or two-quart bowl and beat up well with an egg-beater. It should now be left to stand for three or four days, in warm weather, or about six days, in cold weather. At the end of that time, remove scum, if any, stir up and add enough muriatic acid to give the size a slightly sour taste. About ten drops will do it if the acid is strong. You may now strain the size through two or three thicknesses of super, or “crash,” as some call it, into an earthen bowl. Add a couple pieces of gum camphor, each about the size of a large walnut, cover the bowl with a piece of pasteboard into which a few small holes should be punched, and your size will keep a long time. Never return used size to the bowl.

[No. 62.] *Egg Albumen Size*. Put one-eighth pint (half a cupful) of good commercial egg albumen into a clean three-quart

RED-UNDER-GOLD EDGES

**T**HIS is a novelty which should never be employed in good bindings, except in limp bible work, where it relieves somewhat an otherwise monotonous effect. The plainly visible red border following the three edges of every leaf of the book, which is necessarily produced in the process of coloring, is by no means attractive.

[No. 66.] *Eosine*. This color, used largely in ruling, is an aniline dye. It is only necessary to combine it with some liquid which is highly penetrating. The point is: The edges, which are colored after trimming, before the books are placed in the gilding press, must absorb enough color to leave them still red after the scraping has been done. Of course this action is also largely influenced by the quality of the paper used in the book, and the color must be prepared to suit these varying conditions. Rice paper will absorb this dye (even if dissolved only in water with the addition of a little alcohol and aqua ammonia) in such a way that the red borders of the leaves present nice, clean, sharp edges. In other papers these edges would be more or less ragged. This explains that this red-under-gold process is merely used in limp bible work—editions for Sunday-school teachers—printed on rice paper exclusively. To repeat: If red-under-gold is to be applied to rice paper, it is only necessary to dissolve the eosine (it comes in powder form) in a little alcohol; then add a few drops of aqua ammonia and sufficient water to produce the desired shade of red. Too much aqua ammonia will impart to the color an

Edge Gilding  
and Metal Edges.

Laying-on Sizes.

White of Egg  
Size.

Red-under-Gold  
Edges.

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blood albumen add two-thirds of a cupful of water, let stand over night, then remove scum, stir the size well and strain through a piece of super. It is now ready for use, but it will decompose soon. For this reason, it is not advisable to prepare much of it at a time.

Metal Edges.

Whichever size is used, apply it liberally. For conveying the metal leaf from the cushion to the edge, a greased chamois tip, as is used in finishing, will do good service. The crepe tip can also be used if sufficient grease is applied to it, but it will be useless thereafter for gilt-edging. Like in edge-gilding, the metal should be rubbed down before the edge is entirely dry. After this has been done, allow plenty of time before you commence burnishing. The bloodstone cannot be used, but after waxing, go over the edge once or twice with the polished agate. This completes the burnishing, or rather, the smoothing down of the metal, for bringing up lustre is out of the question. To wind up, the edge is sometimes given a light coat of bookbinders' varnish reduced with considerable alcohol, or a coat of banana varnish. The latter is a comparatively new article, and is used by plumbers as a binding medium for bronze powders in decorating iron work. This completes the operation. If these directions are carefully followed, you will meet with more than average success.

Blood Albumen  
for laying on.

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china bowl and add two quarts of cold water. In summer, let stand three or four days; in cold weather, it should stand from one to two weeks, and instead of using cold water, use it lukewarm. Soft water is always preferable, especially so in cold weather. It is always procurable, either by boiling hard water or by using rain-water, condensed steam or melted snow. When the solution is good and mellow, which you can readily detect by its smell (but do not wait until decomposition has set in and the solution has assumed a greenish hue), stir it up with a folder and add enough muriatic acid to give it a slightly sour taste. It may require thirty to fifty drops, according to the strength of the acid, and it will leave the solution as clear as crystal. Now strain, add gum camphor and cover, all exactly as in No. 61. The size will keep indefinitely and improve with age. Some prefer to use nitro-muriatic acid, but this is optional. I prefer the muriatic. But, remember, the acid and camphor must not be added until the size is good and mellow. On this, and the amount of acid added, depends success in gilding. Neither must the acid be added in quantities sufficient to impart a burning sensation to your tongue.

Whenever you are compelled to use size on the following or second day after preparing it, stir it up well and take out a sufficient quantity for immediate wants only, say half a cupful, and add acid to it, leaving the remainder of it in the bowl unmolested till it has reached the point mentioned above, when the acid and camphor may be added as directed.

[No. 63.] *Egg Albumen and Oxalic Acid for laying on.*  
Put into a clean three-quart china bowl one-eighth pint (half

Edge Gilding  
and Metal Edges.

Laying-on Sizes.

Egg Albumen  
Size.

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a cupful) of pure commercial egg albumen. Put into another dish one even teaspoonful of oxalic acid, add half a pint of boiling water and a pint and a half of cold water, and pour it into the bowl containing the egg albumen. Add one quart of cold water, stir well with a folder and let stand over night. In the morning, remove scum, stir size again, strain through several thicknesses of super into an earthen crock and add about ten drops of formaldehyde. Keep crock covered. It can be used immediately, produces very good results, and best of all, it does not decompose.

[No. 63a.] *White of Egg, Vinegar and Brandy.* To the white of an egg add three times as much water, ten drops of vinegar and six drops of French brandy; beat up and let stand over night. Used in connection with the No. 60a and filler No. 57, a perfectly solid edge is always assured, and although it is a somewhat strong size, it is capable of fetching considerable lustre.

Edge Gilding  
and Metal Edges.

Laying-on Sizes.

Egg Albumen  
Size with  
Oxalic Acid.

White of Egg,  
Vinegar and  
Brandy.

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## FORMULAS FOR BOOKBINDERS

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### METAL EDGES

**C**OVERING book edges with metal leaf is always, even under the most favorable conditions, attended by uncertain results. There is very little gratification in this work. Still, we are sometimes called upon to do it, especially if a silver edge is desired. In this case, it is always advisable to substitute aluminum-leaf for silver, because the latter soon tarnishes. In all metal edging use only the best grade of leaf. The hand-beaten aluminum, for silver, and aluminum-gold, for gold, sold by some dealers in bookbinders' supplies, are superior articles of this class.

Concerning the mode of application: Very close observations and practice have led me to the conclusion that to be reasonably successful, the edge must be waterproofed before the metal is laid on.

[No. 64.] *Liquid Casein Glue.* An admirable article for waterproofing, I find, is liquid casein glue of the consistency of thin molasses. The Casein Company of America, Bellows Falls, Vt., furnishes this article in a dry, crushed form. They also give directions for dissolving it. This article is sold by that firm under the name of "Bookbinders' Albumenoid Glue." It can be used for a great many purposes in the bindery.

Proceed as follows: Fill the edge with No. 57, put in press, scrape and rub down well with No. 64 till the edge presents a glossy surface. Apply the bole and lay on with either No. 57 or blood albumen size. The latter prepare as follows:

[No. 65.] *Blood Albumen.* To one-third of a cupful of good

Metal Edges.

Liquid Casein  
Glue for rubbing  
down.