

# **HOUSEHOLD CHEMISTRY FOR GIRLS: A LABORATORY GUIDE**

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Household Chemistry for Girls: A Laboratory Guide by Jamie Maud Blanchard

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**JAMIE MAUD BLANCHARD**

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A LABORATORY GUIDE

BY

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## PREFACE.

To outline a strong course in chemistry, especially suited to girls of high school age, is the purpose of this book. Several years' experience in developing this course has strengthened the author's conviction that it is better in every way to give girls special work in chemistry rather than to make their study identical with that for boys. In the Los Angeles High School, where this plan has been followed for some time, it has brought about a gratifying increase in the number of girls studying chemistry.

But it was with no intention of weakening the course or of presenting to girls merely the "pyrotechnics" of chemistry that the differentiation has been made. On the contrary, the same standard of thoroughness has been maintained for both boys and girls, with the result that full credit has been granted by the authorities of the University of California for the year's work in household chemistry.

Though our ultimate aim is the training of intelligent homemakers, this is a manual of chemistry, *not* of domestic science. It is therefore suitable for a purely academic high school, no less than for a polytechnic high school, where a rigorous course in household chemistry forms a necessary foundation for the work in domestic science. The choice of subjects is based in a general way on the following scheme:

What we breathe.

What we drink and use for cleansing.

What we use for fuels and illuminants.

Chemical nature of common substances.

Foods and food values.

Adulterants and simple methods for their detection.

Textiles — care of textiles, removal of stains, etc.

The principles of inorganic chemistry — to which the first half of the book is devoted — are developed from a study of common substances, with special reference to their life interest and practical applications. This offers a scientific treatment of the subject, while making it more useful and attractive to the student.

The second half of the book, beginning with Experiment 28, is devoted to qualitative experiments in organic chemistry, as delicate quantitative experimentation is beyond the ability of high school pupils. Supplementary reading is of course advisable in this connection; with this in view, a full list of library text-books is given, and definite references to these accompany the experiments.

For the convenience of teachers, an alphabetical list of the necessary apparatus and chemicals is included, though the laboratory equipment differs but slightly from that of the regular course for boys. Other features, such as a list of exhibits and charts, suggestions for work at home, references for further reading along lines that are not so essential, but are of allied interest, have also been added.

LOS ANGELES, January, 1912.



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## DIRECTIONS FOR LABORATORY WORK.

**The Table.**—When the work is completed, all apparatus should be removed from the table and the top carefully cleaned. The drawer should be lined with clean paper. Apparatus easily broken, as test-tubes and beaker, should be kept in boxes.

**The Burner.**—To light the Bunsen burner, turn the gas on full, and apply a lighted match about four inches above the burner; then lower the gas to the desired height. If the match is held close to the burner, the flame is liable to "strike back," that is, to burn at the base. In such a case, turn off the gas, let the burner cool, and then relight it. It is dangerous to let the base of the burner become heated, as the connecting rubber tubing melts and allows a large stream of gas to burn. The flame should be a clear blue and deposit no soot.

**The Apparatus.**—(a) The names of the pieces of apparatus should be learned at the outset.

(b) All apparatus should be clean before work is begun. Clogged connecting-tubes will cause an explosion.

(c) In using a ring-stand, place it at your right hand and extend the apparatus to the left.