THESIS

On

COLOR HARMONY AND DESIGN IN INTERIOR DECORATION

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OREGON AGRICULTURAL COLLEGE

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MASTER OF SCIENCE

In

HOME ECONOMICS

By

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OUTLINE

I. Aim

II. Discussion
   1. Dining room.
      a. Design
      b. Color
   2. Living room.
      a. Design
      b. Color
   3. Wood dyes and wall colors.
      a. Coloring of woods
      b. Suggested color harmonies for walls.

III. Conclusion.
COLOR HARMONY AND DESIGN IN INTERIOR DECORATION.

The aim of this thesis is to originate some color schemes, considering the relationship between light and color, form and proportions, keeping in mind the principles of design, to demonstrate the application of stains upon fir and oak and for each piece suggesting color harmonies for wall surfaces to which they could be applied.

Two color schemes were originated, one for the dining room, the other for a living room. In both instances the principles of design; rhythm, balance and harmony were followed; for their coloring something original and that which was not common place was striven for.

In the dining room, the buffet which is built in and extends back for three feet, occupies the principal place of attraction or is the center of interest. Above the buffet is an arch which tends to make the space appear wider as it takes longer for the eye to travel over a curved surface than a straight one. At both sides of the buffet are panels extending from the floor to the ceiling which divides the wall space into unequal divisions. Equal spaces uniformly placed are uninteresting and have no rhythm. Then to add interest these side spaces were broken by panels which extend about two-thirds the height of the wall. At the top is a moulding above which is a wall area, which is plain. At the juncture, where the wall and ceiling meet, is a cornice, On the opposite
side are French doors opening out of the room into the adjoining room; in one end is a door opening out into the kitchen; in the other are windows which occupy most of the space. The paneling is used the entire distance around the room.

For the color scheme orange was selected as a dominant tone which is preferable in north rooms and cool climates as it suggests warmth and sunshine. For the walls above the paneling the orange was grayed with blue until it appeared as a gray orange. Orange was first applied to the woodwork, then it was grayed with blue until it became a silver gray, still having a subdued tone of orange. The orange for the draperies was used in a stronger tone; the borders of which are blue green accented with black. For the sheer curtains on the windows red orange was used for the principal design and enough blue green its complement to produce an harmonious accent. For this color scheme, a rug with blue predominating and the furniture gray in color would be suggested.

In the living room the fire place was selected as the center of attraction and designed so that it should occupy the entire space from the floor to the ceiling, leaving a space on both sides for windows. Below the windows are panels horizontal to the floor, at the top are moldings to complete the top and which extend from both sides on around the room. In one end of the room are three windows; below them and on either side are bookcases ex-
tending to the picture moulding which divides the wall space into a pleasing division, thus making it much more interesting; in the opposite end is a door opening out of the room on to a porch. On both sides are windows which are narrower in space for the reason that uniformity of size should be avoided.

The color scheme for this room is best suited to a north room but may be used for a south room as well as the woodwork is grayed green. Green is refreshing and cool and is especially pleasing in south rooms where one gets more or less sunshine. As there are both tones of yellow and green, it gives one the feeling of hospitality and repose. In the draperies at the windows, blue is used as a background with a design of orange and green, the blue being subordinate and complementary to the orange. To complete this scheme a rug of brown or gray green is excellent and the furniture stained with mission or fumed oak.

For the purpose of originating color harmonies for the walls both fir and oak were stained with wood dyes and finished according to the manufactures specifications. The dyes penetrate deeply into the wood and when the beauty of the grain has been brought out, the surface of the wood remains unchanged. The wood dyes dry quickly and do not rub off. Johnson's wood dyes were used and are quite satisfactory. Many colors may be obtained by mixing the dyes, two or more; then by using flemish oak
they may be darkened or by using alcohol they become lighter in color. The dyes used show darker on the fir than on the oak, for the soft woods absorb the wood dyes more easily. The wood filler was applied afterwards, than they were waxed and polished. If the wood filler is applied before the stain it is impossible for the stain to penetrate. After the hardwoods were stained and finished it was found that a large percent of the wax and stain could be removed by the application of denatured alcohol, also if the wood is not dark enough in color, a stain diluted with alcohol can be applied over the wax, which will give a darker color. This can be easily removed as it does not penetrate the wood. The nicer colorings were obtained by the combination of two or more dyes. Dyes were used with oil paints but the process was slow and unsatisfactory. When the wood dye that was mixed with the oil paint was applied it was beautiful in coloring but when exposed to the sunlight the colors faded and nothing remained but a dingy white. Other pieces that were stained with the wood dyes were exposed to the sunlight for two days, and the piece stained with light mahogany wood dye that had been diluted with denatured alcohol was found to have faded to a considerable extent while the others which were silver gray and brown remained unchanged.

Both the fir and oak woods for these samples were
kiln dried and air dried for a year. The air dried wood is preferable to the kiln dried as it is not so likely to warp out of shape and the texture is of a very much better quality. The fir wood absorbs the stain more readily than the oak, however, the harder parts of both do not absorb stain to any great extent. In the fir the tone of the color was influenced by the hard grained parts that failed to absorb the stains. The fir that is sawed edge grained takes the stain much more evenly but does not show the variations in tones. It is flat and has more nearly the appearance of oak or other hard woods. The lighter stains on the oak are influenced by the gray coloring in the wood.

In the use of dye, the flat wood finish is not entirely satisfactory on fir as the fir yellows with age. To secure a smooth polished surface the wood should be shellacked and polished from five to fifteen times before it is waxed. These finishes act as a preservative to the wood. The oak for its gray coloring and hardness is preferable to fir but taking into consideration the fact that it costs about twice as much as fir, fir is excellent.

The wall surfaces are represented here with Beaver board and water color paper which are to form the color harmonies with the stained woods.
The following tables give the colors for the stained woods, combinations if two or more wood dyes are used, and suggested harmonious colorings for the walls.

STAINED WOODS.

<table>
<thead>
<tr>
<th>Set</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Light brown</td>
</tr>
<tr>
<td>II.</td>
<td>Medium brown</td>
</tr>
<tr>
<td>III.</td>
<td>Browns</td>
</tr>
<tr>
<td>IV.</td>
<td>Orange to red</td>
</tr>
<tr>
<td>V.</td>
<td>Medium red</td>
</tr>
<tr>
<td>VI.</td>
<td>Dark red</td>
</tr>
<tr>
<td>VII.</td>
<td>Gray</td>
</tr>
<tr>
<td>VIII.</td>
<td>Grayed green</td>
</tr>
<tr>
<td>IX.</td>
<td>Green</td>
</tr>
<tr>
<td>X.</td>
<td>Miscellaneous</td>
</tr>
</tbody>
</table>

WALL COLORS

<table>
<thead>
<tr>
<th>Set</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Red</td>
</tr>
<tr>
<td>II.</td>
<td>Blue</td>
</tr>
<tr>
<td>III.</td>
<td>Green</td>
</tr>
<tr>
<td>IV.</td>
<td>Yellow to orange</td>
</tr>
<tr>
<td>V.</td>
<td>Grays</td>
</tr>
</tbody>
</table>
SET I. WOOD DYES: LIGHT BROWN.

1. Flat wood finish.

   This harmonizes with all the sets, the light colors being preferable.

   Color for walls.

   Wall color.  Set I.  No. 1. delicate pink.
   "   "  Set I.  No. 3. pink and green flowered.
   "   "  Set II.  No. 4. light blue.
   "   "  Set III.  No. 3. grayed yellow green.
   "   "  Set III.  No. 5. grayed green.
   "   "  Set IV.  No. 3. grayed yellow.
   "   "  Set IV.  No. 4. light orange.

2. Wood dye: Fumed oak.

   Wall color.  Set I.  No. 1. delicate pink.
   "   "  Set I.  No. 3. pink and green flowered.
   "   "  Set II.  No. 4. light blue.
   "   "  Set III.  No. 3. grayed yellow green.
   "   "  Set III.  No. 5. grayed green.
   "   "  Set IV.  No. 3. grayed yellow.
   "   "  Set IV.  No. 4. light grayed orange.


   Wall color.  Set I.  No. 6. red flowered paper.
   "   "  Set II.  No. 4. light blue (grayed).
   "   "  Set II.  No. 5. gray blue.
<table>
<thead>
<tr>
<th>Set</th>
<th>No.</th>
<th>Color Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>III.</td>
<td>7.</td>
<td>blue green</td>
</tr>
<tr>
<td>III.</td>
<td>8.</td>
<td>grayed green</td>
</tr>
<tr>
<td>III.</td>
<td>9.</td>
<td>grayed green (leaves)</td>
</tr>
<tr>
<td>IV.</td>
<td>6.</td>
<td>gray orange</td>
</tr>
<tr>
<td>IV.</td>
<td>7.</td>
<td>golden brown</td>
</tr>
<tr>
<td>IV.</td>
<td>8.</td>
<td>green brown</td>
</tr>
<tr>
<td>V.</td>
<td>7.</td>
<td>blue gray</td>
</tr>
<tr>
<td>V.</td>
<td>8.</td>
<td>yellow gray</td>
</tr>
</tbody>
</table>

**fumed oak**

4. Wood dyes combined

- light oak
- brown flemish oak

**Wall color.** Set I. No. 6. red flowered paper.

- Set III. No. 7. blue green
- Set III. No. 8. grayed green
- Set IV. No. 7. golden brown

5. Wood dyes combined

- fumed oak


**Wall color.** Set I. No. 6. red flowered paper.

- Set III. No. 7. blue green
- Set III. No. 8. grayed green
- Set IV. No. 7. golden brown

**SET II. WOOD DYiES: MEDIUM BROWN.**

1. Wood dye: dark oak.
2. Wood dyes combined: fumed and flemish oaks.

3. Wood dyes combined: fumed and weathered oaks.


   WALL COLORS FOR 1, 2, 3, 4.

Wall color. Set IV. No. 8. green brown.
" " Set IV. No. 10. brown.
" " Set IV. No. 12. lavender brown.
" " Set IV. No. 13. dark brown.


Wall color. Set IV. No. 13. dark brown.
" " Set IV. No. 14. brown (flowered).
" " Set IV. No. 15. extra dark brown.


Wall color. Set IV. No. 13. dark brown.
" " Set IV. No. 14. flowered brown.
" " Set IV. No. 15. extra dark brown.

   SET III. WOOD DYES: BROWNS.

1. Wood dyes combined: fumed, flemish and dark oaks; dark mahogany.

Wall color. Set IV. No. 9. green tan.
" " Set IV. No. 10. brown.
" " Set IV. No. 11. grayed brown.
Wall color.  Set IV.  No. 12. lavender brown.

"  

Set IV.  No. 13. dark brown.

"  

Set IV.  No. 14. brown (flowered).

"  

Set IV.  No. 15. extra dark brown.

2. Wood dyes combined:  dark and flemish oaks; dark mahogany.

3. Wood dyes combined:  same as II. only darker.

Wall color.  Set IV.  No. 9. green tan.

"  

Set IV.  No. 10. brown.

"  

Set IV.  No. 11. grayed brown.

"  

Set IV.  No. 12. lavender brown.

"  

Set IV.  No. 13. dark brown.

"  

Set IV.  No. 14. brown (flowered).

"  

Set IV.  No. 15. extra dark brown.


5. Wood dyes combined:  light mahogany, light and weathered oaks.


Wall color.  Set IV.  No. 10. brown.

"  

Set IV.  No. 11. grayed brown.

"  

Set IV.  No. 12, lavender brown.
Wall color. Set IV. No. 13. dark brown.
" " Set IV. No. 14. brown (flowered).
" " Set IV. No. 15. extra dark brown.

SET IV. ORANGE TO RED (MAHOGANY).
1. Wood dye: extra dark mahogany, diluted.

2. Wood dye: light mahogany, diluted.

Color for walls.
Wall color. Set I. No. 4. orange pink.
" " Set II. No. 4. light blue (grayed).
" " Set III. No. 5 to 9, in set of green is harmonious.


5. Wood dyes combined: light mahogany and fumed oak.


WALL COLORS FOR 3, 4, 5, 6.
Wall color. Set III. No. 11. gray brown.
" " Set III. No. 10. gray brown.
Wall color. Set V. No. 13. dark gray (flowered).

SET V. WOOD DYSES: MEDIUM RED (MAHOGANY).
1. Wood dyes combined: fumed oak, light oak and light mahogany.

2. Wood dyes combined: light oak and light mahogany.

3. Same as No. 2, darker.

4. Same as No. 2. darker than No. 3.

5. Wood dyes: mahogany.


Color for walls.

Wall color. Set I. No. 6. red flowered paper.
" " Set II. lavender flowered.
" " Set IV. No. 14. brown (flowered).
" " Set IV. No. 15. extra dark brown.
" " Set V. No. 13. dark gray (flowered).

SET VI. WOOD DYSES: DARK RED (MAHOGANY).
1. Wood dyes: dark mahogany.

2. Wood dyes: light mahogany.


5. Wood dyes: extra dark mahogany.

The lighter ones were diluted with alcohol.

WALL COLORS FOR 1, 2, 3, 4, 5.

<table>
<thead>
<tr>
<th>Wall color</th>
<th>Set</th>
<th>I.</th>
<th>No. 6. red (flowered).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>I.</td>
<td>No. 7. red</td>
</tr>
<tr>
<td></td>
<td></td>
<td>I.</td>
<td>No. 8. dark red</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II.</td>
<td>lavender</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III.</td>
<td>No. 9. gray green (leaves).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III.</td>
<td>No. 10. olive green</td>
</tr>
<tr>
<td></td>
<td></td>
<td>III.</td>
<td>No. 11. extra dark green.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IV.</td>
<td>No. 11. grayed brown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IV.</td>
<td>No. 12. lavender brown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IV.</td>
<td>No. 13. dark brown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IV.</td>
<td>No. 14. brown (flowered).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IV.</td>
<td>No. 15. dark brown</td>
</tr>
<tr>
<td></td>
<td></td>
<td>V.</td>
<td>No. 13. dark gray (flowered).</td>
</tr>
</tbody>
</table>

SET VII. WOOD DYSES: GRAY.

1. Wood dyes: silver gray, waxed, silver gray applied over the wax.

Wall color. Set II. lavender flowered paper.

" " Set II. No. 4. light blue.
Wall color.  Set II.  No. 5.  gray blue.
"    "  Set IV.  No. 3.  grayed yellow.
"    "  Set IV.  No. 5.  light grayed orange.
"    "  Set IV.  No. 8.  green brown.
"    "  Set V.  No. 3.  green lavender gray.
"    "  Set V.  No. 4.  lavender gray.
"    "  Set V.  No. 6.  blue gray.
"    "  Set V.  No. 7.  blue gray.

2. Wood dyes:  silver gray (darker).

3. Wood dyes combined:  silver gray and flemish oak.

WALL COLORS FOR 2 and 3.

Wall color.  Set II.  lavender and red flowered paper.
"    "  Set II.  No. 4.  light blue.
"    "  Set II.  No. 5.  gray blue.
"    "  Set IV.  No. 3.  grayed yellow.
"    "  Set IV.  No. 5.  light gray orange.
"    "  Set IV.  No. 6.  gray orange.
"    "  Set IV.  No. 7.  golden brown.
"    "  Set V.  No. 4.  lavender gray.
"    "  Set V.  No. 7.  blue gray.
"    "  Set V.  No. 13.  dark gray (flowered).
"    "  Set V.  No. 14.  dark gray.

Wall color. Set I. No. 2. pink striped.

" " Set II. No. 1. blue striped.

" " Set II. No. 2. lavender blue.

" " Set II. No. 4. light blue.

" " Set III. No. 2. light green (grayed).

" " Set IV. No. 3. grayed yellow.

" " Set IV. No. 5. light grayed orange.

" " Set IV. No. 8. green brown.

" " Set V. No. 2. orange gray.

" " Set V. No. 3. green lavender gray.

" " Set V. No. 4. lavender gray.

" " Set V. No. 6. blue gray.

" " Set V. No. 7. blue gray.

" " Set V. No. 11. green gray.

" " Set V. No. 12. green gray.


Wall color. Set I. No. 1. delicate pink.

" " Set I. No. 4. orange.

" " Set I. No. 6. red (flowered).

" " Set II. No. 5. gray blue.

" " Set IV. No. 5. light grayed orange.

" " Set IV. No. 8. green brown.

" " Set IV. No. 9. green tan.

" " Set IV. No. 11. grayed brown.

" " Set IV. No. 12. grayed brown.

" " Set IV. No. 14. flowered brown.
Wall color. Set V. No. 6. blue gray.

" " Set V. No. 7. blue gray.

" " Set V. No. 8. yellow gray.

" " Set V. No. 9. yellow gray.

" " Set V. No. 10. brown gray.

" " Set V. No. 12. green gray.


Wall color. Set IV. No. 6. gray orange.

" " Set IV. No. 8. green brown.

" " Set IV. No. 14. brown (flowered).

" " Set IV. No. 15. extra dark brown.

" " Set V. is harmonious.

SET VIII. WOOD DYES: GRAYED GREEN.

1. Wood dyes combined: light and flemish oak.

Wall color. Set II. No. 4. light blue (grayed).

" " Set III. No. 3. grayed green yellow.

" " Set III. No. 5. grayed green.

" " Set IV. No. 3. grayed yellow.

" " Set IV. No. 5. light grayed orange.

" " Set IV. No. 8. green brown.

" " Set V. No. 2. orange gray.

" " Set V. No. 6. blue gray.

" " Set V. No. 7. blue gray.

" " Set V. No. 8. yellow gray.

" " Set V. No. 9. yellow gray.
Wall color. Set V. No. 11. green gray.
"      " Set V. No. 12. green gray.

2. Wood dyes combined: bog green and fumed oak.
Wall color. Set IV. No. 3. grayed yellow.
"      " Set IV. No. 5. light grayed orange.
"      " Set IV. No. 8. green brown.
"      " Set V. No. 8. yellow gray.
"      " Set V. No. 13. dark gray (flowered).


5. Wood dyes combined: bog oak, fumed and flemish oaks.

WALL COLORS FOR 3, 4, 5.
Wall color. Set III. No. 3. grayed green yellow.
"      " Set III. No. 6. grayed green yellow.
"      " Set III. No. 10. olive green.
"      " Set IV. No. 3. grayed yellow.
"      " Set IV. No. 8. green brown.
"      " Set IV. No. 9. green tan.
"      " Set IV. No. 11. grayed brown.
"      " Set V. No. 13. dark gray (flowered).

Wall color. Set II. No. 4. light blue, grayed.
" " Set III. No. 9. gray green (leaved).
" " Set III. No. 11. extra dark green.
" " Set IV. No. 4. orange yellow.
" " Set IV. No. 5. light grayed orange.
" " Set IV. No. 6. light grayed orange.
" " Set IV. No. 8. green brown.
" " Set IV. No. 14. brown (flowered).
" " Set IV. No. 15. extra dark brown.

SET IX. GREEN.

1. Wood eyes combined: forest green, fumed and flemish oaks.

2. Wood dye: moss green.

3. Wood dye: forest green.

WALL COLORS FOR 1, 2, 3.

Wall color. Set III. No. 6. dark grayed yellow green.
" " Set III. No. 10. olive green.
" " Set IV. No. 8. green brown.


Wall color. Set III. No. 6. dark grayed yellow green.
" " Set III. No. 10. olive green.
" " Set III. No. 11. extra dark green.
" " Set IV. No. 8. green brown.
5. Wood dye: bog oak.

6. Wood dyes combined: moss green and flemish oak.

WALL COLOR FOR 5 and 6.

Wall color. Set III. No. 9. gray green (leaves).
  " " Set III. No. 10. olive green.
  " " Set III. No. 11. extra dark green.
  " " Set IV. No. 3. grayed yellow.
  " " Set IV. No. 4. orange yellow.
  " " Set IV. No. 5. light grayed orange.
  " " Set IV. No. 6. gray orange.
  " " Set IV. No. 7. golden brown.
  " " Set IV. No. 8. green brown.
  " " Set V. No. 13. dark gray (flowered).

SET X. MISCELLANEOUS.

1. Wood dyes combined: weathered and light oaks.

Wall color. Set I. No. 1. delicate pink.
  " " Set II. No. 1. blue (striped).
  " " Set II. No. 2. lavender blue.
  " " Set III. No. 7. blue green.
  " " Set III. No. 8. grayed green.
  " " Set III. No. 9. gray green (leaves).
  " " Set IV. No. 3. grayed yellow.
  " " Set IV. No. 5. light grayed orange.
  " " Set IV. No. 9. green tan.
Wall color.  Set IV.  No. 11.  grayed brown.
"  "  Set IV.  No. 12.  lavender brown.
"  "  Set V.  No.  6.  blue gray.
"  "  Set V.  No.  7.  blue gray.
"  "  Set V.  No.  8.  yellow gray.
"  "  Set V.  No. 10.  brown gray.
"  "  Set V.  No. 11.  green gray.
"  "  Set V.  No. 12.  green gray.

2. Wood dyes combined:  flemish and bog oaks; waxed, then silver gray over.


4. Wood dyes combined:  flemish and bog oaks.

WALL COLORS FOR 1, 2, 3.
Wall color.  Set IV.  No.  3.  grayed yellow.
"  "  Set V.  No.  1.  light gray.
"  "  Set V.  No.  6.  blue gray.

5. Wood dyes combined:  mission, green weathered and flemish oaks; waxed; silver gray.
Wall color.  Set III.  No.  8.  dark grayed green.
"  "  Set IV.  No.  3.  grayed yellow.
"  "  Set V.  No.  7.  blue gray.
Wall color. Set V. No. 13. dark gray (flowered).

" " Set V. No. 14. dark gray.


Wall color. Set IV. No. 3. grayed yellow.
" " Set IV. No. 5. light grayed orange.
" " Set IV. No. 10. brown.
" " Set IV. No. 13. dark brown.

7. Wood dyes combined: green weathered and flemish oaks.

Wall color. Set I. No. 6. red (flowered).
" " Set III. No. 11. extra dark green.
" " Set IV. No. 1. light yellow.
" " Set IV. No. 2. yellow.
" " Set IV. No. 3. grayed yellow.
" " Set IV. No. 4. orange yellow.
" " Set IV. No. 5. light grayed yellow.
" " Set IV. No. 6. gray orange.
" " Set IV. No. 7. golden brown.
" " Set IV. No. 8. green brown.
" " Set V. No. 1. light gray.
" " Set V. No. 6. blue gray.
" " Set V. No. 7. blue gray.
" " Set V. No. 11. green gray.
" " Set V. No. 12. green gray.

8. Wood dyes combined: extra dark mahogany and flemish
oak.

Wall color. Set II. lavender (flowered).

" " Set IV. No. 11. gray brown.

" " Set IV. No. 12. lavender.

" " Set IV. No. 14. brown (flowered).


Wall color. Set IV. No. 10. brown.

" " Set IV. No. 11. grayed brown.

" " Set V. No. 13. dark gray (flowered).

10. Wood dyes combined: light mahogany, light oak and silver gray.

Wall color. Set III. No. 3. grayed yellow.

" " Set III. No. 10. brown.
In the color combinations given there are others that
are harmonious these being suggested ones; it varies as to
the choice of the individual. Neutral wall colorings are
excellent and the same is true of woodwork as both act as
a background for the contents of a room. Flowered wall
papers if strong in a variety of colors harmonize with
many colors in the stained woods. Analogous harmonies are
preferable in most interiors as the contrast is not so
noticeable. Complementary tones may be successfully
carried out in the furnishings.

To Professor Helen Bryce Brooks I am indebted for en-
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