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A Sanitary  
Survey of the School Plants  
OF  
Rural Warren County, Kentucky.



BY

MATTIE LOUISE HATCHER

ASSISTED BY

MRS. EUGENIA ROEMER MILLS

SUPERINTENDENT OF WARREN COUNTY RURAL SCHOOLS

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## CHAPTER I.

### PURPOSE OF THE SURVEY

One is confronted on every side with this question, "Why do our young people in the rural districts leave their old homes and hurry into the already congested cities?" That this state of affairs in imperilling our economic stability and indirectly our body politic, there can be no doubt. Thinkers of all classes, and especially our economists, are urging youth to "stay on the farm." To which youth replies, "There is no money in it." "It is unattractive." "It does not satisfy my love of adventure."

Kentucky, being an agricultural state, has assumed her share of this national industrial problem, and among other agencies for help, created the state normal schools, a large part of whose duty is to satisfy this rural need. They are to train teachers who will in their turn lead the boys and girls of the state to see that the properly administered farm is a paying proposition which will lead them to make their own communities attractive; to inspire them into worthy adventures near home; and thus lead to a development of the great hidden material and spiritual resources of the state.

An investigation of the office records of the Western Kentucky State Normal School at Bowling Green reveals these facts: (1) The great majority of short course students go into the rural schools as teachers; (2) The life-certificate graduates go into graded schools of towns and cities; (a) Ninety per cent of these life-certificate students have come up through the rural schools; (b) Only about eleven per cent of them go back to the rural school. Thus, the children of the country districts are denied contact with those teachers who are most thoroughly equipped to deal with their problems:

Conferences with members of senior classes in the Western Kentucky State Normal reveal these facts: Life-certificate students do not return to rural schools because of (1) small pay, (2) fewer social advantages, (3) unattractive school conditions.

The above brings up the entire question as to the condition of our rural schools. The pay is a matter for state action; social advantages will come as communities are built up educationally and economically; but the third point, unattractiveness of school conditions, is one that each community must look after for itself. There is no use in demanding a first class teacher and then giving her a barn in which to teach. There is no justification in expecting every teacher to be inspired with so high and holy a missionary purpose that she will continually, year after year,

scrub the schoolhouse, paint it, make the fires, and wear herself out in order to provide her school with every needed bit of apparatus. The time for that pioneer work has passed long ago. A suitable building with all needed facilities for its upkeep should be provided by the community, and the teacher should be free to use her energies in constructive lines of endeavor. The community that is not sufficiently far-sighted to do these things is even now bidding for th third-rate teacher, and will soon be bidding for no teacher at all.

The consolidated school is being adopted in many states and in many counties in this state, as a solution to this problem. By pooling their interests, districts can easily provide better buildings and more up-to-date equipment, to say nothing of higher salaried teachers and more highly specialized instruction.

In order to make a beginning toward an understanding of what the country districts in general are doing toward housing teacher and pupils for the school day, a survey has been made of the school plants of rural Warren County, Kentucky.

Warren County may well be selected as representative of the progressive counties of the state. Of the 119 counties it is without doubt in the upper quarter for wealth and non-measurable intelligence. Its county seat, Bowling Green, is the home of the Western Kentucky State Normal School, Bowling Green Business University, Ogden College. Bowling Green is well known throughout the state for its public and parochial schools and for the general culture of its people. The L. & N. R. R. and the Dixie Highway pass through the county; it is not isolated.

Concerning the wealth of the county, the following reports may be cited:

From U. S. Census Report, Vol. I, Wealth, Debt and Taxation, pub. 1912:

Assessed valuation of all properties subject to ad valorem taxes,

Of the one hundred and nineteen counties of the State, Warren ranks eleventh from the top.

From 13th Census Report, 1910, Vol. 10, Agriculture: Warren ranks 26th from top in total farm property. Warren ranks 34th from top in land per acre.

The Twenty-First Biennial Report of the Bureau of Labor and Statistics, 1914-1915: "Population 1900, 29,970; 1910, 30,579; per cent increase 2.2%. Assessed acreage of land 334,098 (U. S. Census 339,200). Total assessed valuation taxable property \$13,121,624; assessed value of land with improvements \$6,053,176. Average assessed value of land per acre \$18.11 (U. S. Census \$25.97). Land rolling to hilly; not much timber; fertile soil; one of the best all-around farming counties in the state; strawberry production greatest of any county in Kentucky; over

one hundred car loads shipped every year. Bowling Green limestone noted the world over as a building stone."

Compared with Jefferson County's \$92.72 per acre and Fayette's \$88.23 per acre, Warren does not show up so well, but she surpasses her sister counties. Allen, \$9.09; Barren, \$11.07; Butler, \$7.51; and Tdmondson, \$9.00. Outside of the Bluegrass region, Warren leads.

Another reason why Warren may be taken as a representative county is, it is one-hundred and twenty-four years old (1796-1920). There are, therefore, found therein school buildings ranging from the oldest structures, Cook Springs and Gridder, to the most modern, Richpond and Plano. Her poorest buildings may be duplicated, but probably not worsted, by any in the state; her newest are typical of the best.

In such a survey there will necessarily be brought to light certain influences which produce uniformity throughout the county; namely, legislation by state authorities compelling the individual drinking cup; special interests of superintendents, such as good stoves throughout the county; or the neglect of certain features, which has led local boards to adopt the cheapest means at its disposal—for example, cheap foundations. These influences, however, operate in every county, and only serve to bring to the front the necessity for standards in public buildings of all descriptions.

It is hoped that this survey will stimulate other counties in the state to undertake similar investigation. By this means we shall see the schools of the state as they really are; those that are commendable will be commended; those that need changes will be given recommendations for change.

If, in order to bring about changed conditions in rural schools, legislation shall be needed, the findings of the proposed surveys will furnish evidence upon which such legislation may be built.

## CHAPTER II.

### THE SCORE CARD: A KEY TO ITS USE.

It was by the rarest good fortune that "A Score Card for Rural Schools" by Holton and Strickland, State Agricultural College, Manhattan, Kansas, fell into the hands of the promoter of this survey. Books had been read, and necessary characteristics of ideal rural school plans selected and catalogued, but at the best it would only have been possible to prepare tables of frequencies and to have rendered a descriptive analysis of the situation.

The Score Card above mentioned not only describes all the essentials for the ideal rural schools, but gives weight and balance to each characteristic. It thus enables one to arrange the schools in their serial order; to show concretely the distinction between schools and to put in plain number terms the entire problem.

The standard score worked out by experts is being used as a test in all of the common school subjects. Its value is no longer a matter of dispute. By it alone can a means be found for comparing individual with individual, school with school, and system with system. Through its use we are able to speak of achievements measured by accepted, universal standards, not by mere private non-demonstrable opinion.

#### THE KEY—PERMANENT PLANT.

Perfect score—1000 points. S—standard.

#### I. SITE

##### A. Location. S-65.

1. Accessibility S-35—good roads and children walk not more than 2 miles, or transported not more than 6 miles.  
25—good roads, but children walk 2 and one-half miles.  
17.5—bad roads, or children walk 3 miles. 10—good or bad roads but children walk over 3 miles. 5—good or bad roads but children walk over 4 miles—no transportation—schools with wide radius.
2. Environment. S-30—no nuisance near, and attractive surroundings.  
15—no nuisance, but unattractive surroundings.  
15—attractive surroundings, but a nuisance near.  
0—unattractive surroundings and a nuisance near.



B. Drainage. S-50.

1. Elevation. S-25—excellent.  
20—good  
12.5—fair  
10—poor  
0—very poor.
2. Nature of soil. S-25—good—entirely satisfactory  
15—fair  
10—poor

C. Size and Form. S-70—minimum 3 acres in ratio of 2 or 3 to 1.

- 60—3 acres not well shaped, or 2 and one-half acres rectangular in good proportions.  
50—2 acres in good proportions  
40—2 acres in poor proportions.  
35—2 and one-half acres in good proportions  
30—1 and one-half acres in poor proportions.  
25—1 acre  
15, 10, 5, 0—less than one acre.

D. Landscape effect. S-25—Nature and art combined.

- 20, 15—newly improved, or too rustic.  
10, 5—fair  
0—bare.

E. Walks—15. Fences—5. Hitchposts—5. Standard sum—25.

II. BUILDING. S-445

A. Location. S-50.

1. Orientation. S-25—light exposure southeast, east, southwest.  
20—west or east-and-west cross lighting.  
15—north and south lighting.  
0—north and west only.
2. Position in site. S-25—corner or middle of end unless looks demand other setting.  
20—very well placed—needs slight change.  
12.5—too near center or too much in rear.  
0—no regard for playgrounds.

B. Gross Structure. S-140.

1. Type. S-15—cottage type or school building type.  
10—square or with attractive porch.  
5—ordinary box cottage.  
0—boxcar.

2. Foundation. S-20—good weathertight, 2 feet.
    - 10—stone pillars with underpinning.
    - 5—stone pillars without underpinning.
    - 0—poor foundation, or none.
  3. Roof and Walls. S-20.
    - 10—good roof.
    - 10—substantial walls.
    - 8—ridge roof in good condition.
    - 5—thin walls.
    - 0—poor, leaky roof.
    - 0—poor walls.
  4. Entrance. S-20—good, with good steps.
    - 15—good entrance, but no steps.
    - 5—small entrance.
    - 0—none.
  5. Balance and Finish. S-40—attractive and even artistic.
    - 30—very good, though not particularly artistic or handsome looking.
    - 20—good
    - 10—fair, but ordinary.
    - 0—very poor.
- C. Internal Structure. S-225.
1. Construction S-100.
    - a. Size S-25—floor space 15 sq. ft. per pupil (15) 200 cubic ft. air space per pupil (10)—25.
      - 10—15 sq. ft. floor space per pupil.
      - 0—below that amount
      - 5—150 to 200 cubic ft. air space per pupil.
      - 0—below that amount.
    - b. Shape of room S-25—ratio of 4 or 5 to 6.
      - 20—narrower or squarer.
      - 15—nearly square, or ratio of 1 to 2.
      - 0—irregular, poorly shaped.
    - c. Floors S-10—excellent.
      - 5—fair
      - 0—poor.
    - d. Walls S-10—hard plaster, in perfect condition.
      - 5—ceiled, or well plastered.
      - 0—old or papered.
    - e. Doors S-10.
      - (Open outward—2; substantial—2; mortise lock—2; automatic spring 2; 2 ft. 6 in. by 6 ft. 10 in.—2)
      - Total 10.



Blackboards, S-10—(slate—4; 4 ft. in width—2; 20 ft. in length—2; chalk tray 26 in. from floor—2)  
Total 10.

0—painted wall or poor material.

g. Color scheme. S-10 (hard finish wall—2; varnished woodwork—2; cream ceiling—2; walls soft green or warm buff—2;) Total 10.

2. Illumination. S-75.

a. Glass Area—35—one-fourth to one-fifth of floor space.

25—one-sixth to one-seventh of floor space.

15—one-eighth to one-ninth of floor space.

10—less space.

b. Windows. S-30 (banked—10; not nearer front than 5 ft—5; narrow mullions—5; three and one-half ft. from floor—5.)

c. Shades S-10—working from top and bottom.

5—from top only.

0—poor shades or none.

3. Extra Rooms. S-30.

a. Cloak rooms. S-20—adequate in size; one for boys and one for girls.

b. Closet and store rooms S-15.

c. Work room S-15.

d. Fuel room S-15.

III. SERVICE AND EQUIPMENT. S.320.

A. Heating. S-50—(good stove or furnace well put in—45; thermometer—5).

B. Ventilation. S-45—good standard system.

C. Artificial Lights. S-30.

10, 5, 0—distribution.

10, 5, 0—adequacy.

10, 5, 0—safety.

D. Seats and Desks. S-50—(single, movable, adjustable—40; large desk and revolving chair for teacher—5; chairs for public gatherings. Total 50.

10—fair according to bacteriologist's test.

30—desks single, non-movable, three sizes.

20—double desks, non-movable, three sizes.

10—desks, old, double, non-movable, three sizes.

- 2.5—large chair and table for teacher.  
 2.5—possibility of using seats comfortably for public gatherings
- E. Fire Extinguisher. S-10.
- F. Water Supply. S-50.
1. Quality of water. S-15—good for drinking, according to tests made by state bacteriologist.  
 10. fair according to bacteriologist's test.  
 0—no water on grounds.  
 5—good pump.  
 0—poor water—unfit for domestic purposes.
  2. Drinking Facilities. S-15—sanitary fountain.  
 10—individual drinking cups.  
 0—none.
  3. Washing Facilities. S-15—(basin—5; towels, individual—5; or paper—10.)
- G Toilets. S-45.
1. Adequacy. S-10—One for each sex.
  2. Seclusion. S-10—Placing—5; Screening—5.
  3. Sanitation. S-15; modern type. 5—old type screened and lime used freely.
  4. Condition. S-10—good.  
 5—fair.  
 0—poor.
- H. Playground Apparatus. S-25—modern and in good condition.  
 20—well supplied.  
 15—fair amount.  
 0—none.
- I. Flagstaff. S-5.
- J. Horse Shed. S-10.

#### TEACHING EQUIPMENT

Perfect score—500 points. Material to be furnished by school,  
 not by teachers.

1. General. S-300.
  - A. Free text books. S-60.
  - B. Maps, globes, charts. S-25 (10, 10, 5) Total 25.
  - C. Bookcases. S-20.

- D. Display facilities. S-20 (cases-10; wire-5; burlap-5).
- E. Library. S-80.
  - 1. Selections. S-20.
  - 3. References. S-20.
    - a. dictionary-5; stand-5.
    - b. encyclopedia-10.
  - 4. Government and State bulletins-15.
  - 5. Current Literature-15.
- F. Music S-40.
  - 1. Instrument S-25.
  - Song books S-15.
- G. Pictures and Decorations. S-25.
  - 12.5—fair.
  - 0. Poor or none.
- H. Industrial exhibits. S-15.
  - 15. Weights and Measures. S-15.
- 2. Special. S-200.
  - A. Primary. S-45.
    - 1. Sand table-20.
    - 2. Blocks, handwork material, sight cards S-25.
  - B. Household Arts. S-65.
    - 1. Cooking. S-25.
      - a. stove-15.
      - b. utensils-10.
    - 2. Warm lunch-15.
      - a. dishes-10.
      - b. table-5.
    - 3. Cupboard. S-10.
    - 4. Sewing facilities. S-15.
  - C. Manual Training. S-40.
    - 1. Tools. S-25.
    - 2. Benches. S-15.
  - D. Nature Study Material. S-25.
  - E. Agriculture. S-25.

GRAND TOTAL SCORE—1500.

The problem of making a survey, however, was difficult, even though so good an instrument as the score card was available. The card gives weight to ideal conditions. The question arises, "What weight shall be given to those conditions that vary in degrees from the ideal?" "How shall the relations be shown?" "Could any item merit zero?" As the card now stands, each in-

investigator must do his own scaling; until the card becomes standardized and we find what per cent of perfection excellent, good, and fair, merit, the school systems measured by it will not be thoroughly comparable.

All fair grading requires two calculations upon the part of the grader—the first places each individual in its class—the second finds distinctions between individuals within the class. In visiting a large system of schools it is impossible for the stranger to find the class for each characteristic within the school, and at the same time keep in mind the distinctions so that grades within a class present great variability. This would be possible within a second or a third visit; but a first visit would hardly reveal many small differences.

Another reason why finer distinctions within classes is not made, is found in the fact that it is difficult for the examiner to submerge the subjective element. When one is fresh and invigorated an item would be considered worthy of its highest possible grade within its class; the next day, the examiner being weary, the same quality of item might be consigned to the lowest grade within its class.

The large-class unit, therefore, is used as more nearly representing actualities, and causing less friction between schools than would the small-class unit. Moreover, in the summations, sufficiently pronounced differences do occur.

That the final findings are satisfactory, is testified to by the county superintendent who states that schools are arranged correctly in their serial order; and by social workers who remarked upon the parallelism between excellence of work done by the Red Cross and those districts that showed school improvements.

It may be well to discuss the difficulties that arose under each heading in making application of the card.

#### PERMANENT PLANT

##### I. Site:

###### A. Location.

1. Accessibility. This was almost a matter of mathematics and therefore easily computed. However, the question of good or bad roads was taken into consideration and the score rated so as to refer somewhat to vehicles as well as to children.
2. Environment. If a school is free from every nuisance in its environs and has a pleasant outlook, only an artist can detect the degree of beauty; therefore, no fine shades of differences in beauty itself are shown in the score card.

A nuisance is easily condemned and scored, but attractiveness is not so measurable.

B. Drainage.

1. Elevation. When a county has very much the same type of drainage throughout, it is very easy to adhere to a certain per cent of rise as being ideal, but when a county, such as Warren, partly rolling and partly high-hilled, is surveyed, the problem is not so simple. Each school should be judged as to its elevation according to its locality. A school perched upon a precipitous knob, in the midst of gentle swells would not have ideal elevation; whereas a school upon a steep hill-side, and surrounded by hills higher and steeper might have perfect elevation; that is, perfect, if one does not wish to penalize the schools in the hills.
2. Nature of Soil. Only the expert could test the school soils; therefore, in this survey since no expert was available, observations were made of trees, grass and other growing things, and the combined practical judgment of county school superintendent, teacher, and surveyor was used in giving a grade.

C. Size and Form.

No difficulty arose here; the grades easily came according to definite units.

D. Landscape Effect.

Warren County has placed many of its schools upon the outskirts of timber land, and these forests primeval add not a little to the charm of grounds—consequently what nature has done has to be counted in, as well as the works of men.

E. Walks, fences, hitching posts.

The sum of these improvements is 25 on the card,—but the values are distributed according to the discretion of the grader. The teachers of Warren County, almost without exception, declared themselves as opposed to the fence. They deem it unnecessary where there are stock laws; it makes one more thing to keep in repair; it detracts from appearance of landscape; it does not protect from marauders.



## II. Building:

### A. Location.

#### 1. Orientation.

No great problem arose in the face of the clear directions of the score card.

#### 2. Position on Site.

A satisfactory scheme was adopted here, although there was some difficulty in taking all factors into consideration.

### B. Gross Structure:

1. The "box car" type is condemned in the score card, and if an item would merit zero, surely the "box car" type would. In reality, however, the ordinary box car type is not always the lowest type. With hip-roofed porch joined to main roof, it is a rather attractive building. The lowest type is the "box car" with vertical planked siding.

#### 2. Foundation.

No special problem of grading arose here.

#### 3. Roof and Walls.

The score card places a premium upon the shingle roof; it is probably cooler and more pleasing in appearance than metal. However, since the metal is fire-proof and more durable, it was given as high a rating as was the shingle.

#### 4. Entrance.

In this climate a good porch is more worth while than the vestibule. It is not only a good weather break, but it affords a fair bad-weather play room. It, therefore, merits a grade higher than the vestibule alone.

#### 5. Balance and Finish.

It was only after all the schools had been visited, that there could be classification at this point. Even the unpracticed eye, however, can soon find the school which departs from mediocrity.

In this group there are always a few that have real architectural merit.

#### 6. Condition.

Not a hard problem to find the class of each school.



## C. Internal Structure.

### 1. Construction.

#### a. Size of Room.

The questions that come up here are, "Should a room ever be graded zero?" "If so, when?" The Key answers the question according to the opinion of the surveyor. Another question that arises is, "How deal with the two or three-room school so as to give one grade on size of room? Taking total floor space and dividing by total number of children of school does not give floor space in any room. It was decided to get the floor space and air space per child in each room separately, and then, in order to reduce to a comparable grade, to get the average floor space and air space from these. The problem, however, offered no practical difficulty, for it so happened that the schools that were crowded in one room were crowded throughout.

#### b. Shape of Rooms.

This is dealt with in manner as given in Key.

#### c. Floors.

Not a difficult item.

#### d. Walls.

This was a troublesome point. The ceiled wall is a great favorite in the county and the ceiled wall is far more satisfactory than cheap plaster, in spite of the fact that the former necessarily has grooves and accumulates dust.

The papered wall also offered a problem, especially in those cases where the zeal of teacher and pupils has brought in sufficient funds to put new paper on old, unsightly walls.

#### e. Doors.

By dividing the total score into the different points mentioned in this item, a satisfactory basis of grading was obtained.

#### f. Blackboards.

The same is true of this item.

#### g. Color Scheme.

The same is true of this item.

## 2. Illumination.

### a. Glass Area.

Should a school ever receive zero on glass area? One successful oculist said, "Yes, as a matter of condemnation and (2) rejection." Another successful oculist said, "No. Glass area should be rated with regard to its degree of perfection." Since the question is mooted even by authorities, it was decided to give values nearly corresponding with the per cents of perfect glass area.

### b. Windows.

These points are rated with reference to perfect total.

### c. Shades.

The perfect shade is adjustable from top and bottom, but the old-time shade, adjustable only from top should receive recognition. It is better than nothing.

## 3. Extra Rooms.

These extra rooms did not cause much trouble; there are so few of them in the ordinary county school. They are rated according to values on the score card.

## III. Service and Equipment.

### A. Heating.

The schools were visited in the summer—but in every case the stove was up and the teacher testified as to its successful operation.

### B. Ventilation.

The high score given to artificial ventilation operates against the school provided with ordinary good school stove, but which has no special means of outlet or inlet of air for the room. Such a room depends best upon the window board to furnish a current of fresh air, yet artificial ventilation is the only one receiving any attention from the card. Practically, this caused no difficulty as will be seen later in the report.

### C. Artificial Lights.

#### 1. Distribution. 2. Adequacy. 3. Safety.

The average county school has either oil lights or no

light. The oil lamp well hung, or placed in substantial scones on the wall, and well shaded, is as satisfactory as is usually found.

D. Seats and Desks.

The values as given are explanatory.

E. Fire Extinguisher.

No difficulty offered in its scoring.

F. Water Supply.

1. Well.

While the artesian wells of Kansas may furnish superior water, this is not necessarily true of wells in cavernous Kentucky. The quality of water was passed upon by the State Board of Health and grades given accordingly, whether from well or from cistern.

2. Drinking facilities.

No special difficulty.

3. Washing facilities.

No special difficulty.

G. Toilets.

1. Adequacy—one for each sex.

2. Seclusion—75 feet from building, screened by shrubbery and lattice.

3. Sanitation—Moderntype, or, old with abundance of lime.

4. Condition—well kept and free from defacements of any kind.

H. Playground Apparatus.

Swings, see-saws, basket-ball and the like.

I. Flag Staff.

On building or separate and taller than building, equipped with rope and pulley.

J. Horse Shed, or place to park autos.

TEACHING EQUIPMENT.

This need not be treated in detail inasmuch as the teaching equipment of Warren County is quite small. Only that equipment furnished by schools is scored. Many teachers were found supplying from their own slender means—commendable, but does not obtain a grade for the school itself.

The county schools in Kentucky run throughout July and August as well as the winter months; hence it was possible to visit them during the ordinary school vacation in summer.

The county school superintendent and the school surveyor visited the eighty-six schools of the county, with the exception of one, Salem. This one was so inaccessible that the trip was given up, and the scoring was done by means of the questionnaire and information gained from a picture of the school. In the next chapter are found the grades of each school in the county, upon each item in the score card.

## CHAPTER III.

### SCORES MADE BY INDIVIDUAL SCHOOLS ON EACH ITEM.

This chapter is devoted to tables of scores made up from the individual grades in each item upon which every school in the county is graded. By reference to the standard (S) noted under each head and sub-head, an easy comparison may be made between the actual and the ideal.

Those individual items are later used for two purposes: (1) They are compiled into composite tables so as to reveal large differences between types of schools, and also so as to show the place of each school in this standard scale; (2) They are grouped so as to show what per cent of each type receives a certain score, thus enabling one to make a fine analysis of the situation.

NOTE—Owing to cost of printing, Chapter III, is omitted. The tables are of local interest only, and do not detract from, nor add to general value of the survey.



## CHAPTER IV.

### INTERPRETATION OF SCORES ON THE SITE.

Let it be stated at the beginning of our discussion that the grades given to individual schools were assigned after consultation with teachers and other school authorities, and that every effort has been made to render an impartial account. There did not seem to be in the mind of the investigator any particular working hypothesis, as to where certain characteristics would be found and where they would be lacking. There was at the beginning of the research, only a sincere hope to find the strength and the weakness; to be able to account for them in part, and to point out the way toward better things.

It was only after the visits had been made, and later tabulated, that there emerged from the mass of facts, a clear line of evidence as to where superiority exists. While ordinary common sense should indicate the consolidated school with transportation, as being the desirable type of school for our rural communities, it has taken this survey to bring to the mind of one observer, at least, absolute proof of its relative position. This thesis, then, may be taken as a plea for the consolidated school, with the two-or-three (called, two-teacher) school following at a safe distance, to take the place of the time-honored one-teacher school.

It is not the purpose of the survey to make any strict comparisons between the one-teacher white schools and the colored schools, all of which are of the one-teacher type; yet for the sake of future references, and for a brief study toward the close of the discussion, the colored schools are given a place to themselves in the composite tables.

### THE PERMANENT PLANT

TABLE I. COMPOSITE SCORE ARRANGED IN SERIAL ORDER:

#### THE SITE S-235

#### CONSOLIDATED SCHOOLS

Smith's Grove .....	230	Woodburn .....	215
Richpond .....	215	Boyce .....	187.5



TWO AND THREE TEACHER SCHOOLS

Quarry Union .....	215	Gott .....	155
Plano .....	197.5	Richardsville .....	150
Browning .....	180	Cedar Grove .....	145
Rocky Springs .....	180	Morton Branch .....	127.5
Green Hill .....	175	Oakland .....	115
Riverside .....	167.5	Greenwood .....	112.5
Alvaton .....	165		

ONE TEACHER SCHOOLS

Ellis .....	185	Clifty .....	142.5
Walnut Grove .....	185	Martinsville .....	140
Mt. Victor .....	180	Steven's Chapel .....	140
Flat Rock .....	180	Ray's Fork .....	137.5
Old Union .....	172.5	Hall's Chapel .....	135
Boiling Springs .....	170	Lockwood .....	135
Penn's Chapel .....	165	Plum Springs .....	135
Highland .....	160	Shady Grove .....	135
Cedar Valley .....	160	Red Pond .....	130
Rolling Springs .....	160	Union Grove .....	130
Mt. Pleasant .....	157.5	Cook Springs .....	130
Bridgeport .....	155	Oak Grove .....	127.5
Roberson .....	155	Jefferson Seminary .....	127.5
Washington .....	155	Mizpah .....	127.5
Greencastle .....	155	Rockfield .....	125
Oakwood Mills .....	155	Delafield .....	122.5
Ray's Branch .....	155	Polkville .....	120
Fairview .....	155	Gilead .....	117.5*
Grider .....	150	Walnut Hill .....	117.5
Hadley .....	145	Three Forks .....	115
Dial .....	145	Pisgah .....	112.5
Glenmore .....	150	White's Chapel .....	112.5
Beech Grove .....	150	Sand Hill .....	110
Collett .....	150	Sulphur Springs .....	107.5
Underwood .....	150	Cherry Chapel .....	102.5
Manning .....	150	Pleasant Hill .....	100
Barren River .....	145	Cave Hill .....	92.5

COLORED SCHOOLS

Colored Schools	Covington .....	132.5	
Blue Level .....	155		
Stony Point .....	135	Loving Union .....	125

Oakland .....	120	Richpond .....	105
Salem .....	120	Smith's Grove .....	97.5
Allen Springs .....	115		
Jonesville .....	115	B. T. Washington .....	97.5
Woodburn .....	110	Rockfield .....	65
Woodland .....	107.5	Delafield .....	32.5

The first and most prominent feature in any schools is its size. The building may be renovated or changed, the equipment may be improved, but the site goes on forever. With so much of weal and of woe depending upon it, there need be small wonder that it should be such a fruitful cause for neighborhood jealousies and feuds.

#### PER CENT OF SCHOOLS RECEIVING

	5	10	17.5	25	35
Consolidated .....	0	0	25	0	75
Two-Teacher .....	0	15	15	39.5	30.5
One-Teacher .....	1	7	7	32.5	52.5
Colored .....	13	14	13	27	33

Table I. 1. Accessibility S-25.

Under site are included: location, its accessibility and environment; drainage, the elevation and nature of the soil; size and form of the ground; landscape effect of the grounds; walks, fences, and hitching posts. In the totality of these respects the schools of Warren County show great variability. Out of a possible 235, the maximum score is 230 and the minimum 32.5. Looking at groups of schools, however, we see that there is found uniformity within these groups. The consolidated schools have a maximum of 230, a median 215, and a minimum 187.5.

The two-and-three teacher school has a maximum of 215, median 165, and minimum 112.5. The one-teacher white school has maximum 185, median 145, and 142.5. The colored schools have maximum 155, median 45, and minimum 32.5.

We may ask, "Why this steady drop?" The consolidated school in the first place is modern and, therefore, conforms to more modern requirements, which necessarily results in a higher score. Moreover, the consolidated schools have more money put into them for other reasons; they draw support from a larger district, and are selected with the idea of permanency.

The same argument in a lessened degree may be used to favor of the two-teacher over the one-teacher school.

An analysis of th different items may reveal the merits and demerits of each type of school.

A. Location :

1. Accessibility.

By examining Table 1 we find that 75% of the consolidated schools are perfectly accessible. One school, Boyce, does not receive a perfect score, because of the lack of needed transportation.

The two-teacher schools do not have so many perfect accessibilities as do the one-teacher white schools, because, size of districts is increased, yet no transportation is provided. The question arises; Would it not be better to make the districts still larger and furnish transportation?

In the matter of accessibility the colored schools furnish the greatest problem; while we find one-third of them perfect, we find one-seventh with a very low score. The explanation is found in the fact that the colored population in the county is sparse, colored scholars is provided, but necessarily at great intervals.

Could not the solution here be found in the suggestion above: To enlarge the districts still further, draw a larger revenue, and provide free transportation?

2. Environment.

PER CENT OF SCHOOLS RECEIVING

	0	15	30
Consolidated .....	0	0	100
Two-Teacher .....	0	25	75
One Teacher .....	0	4	96
Colored .....	7	27	66

2. Environment S-30.

Table 2. I. Site

A. Location S.65.

Of the schools of Warren County, 14 merit a grade practically perfect in environment; 11 half so much, and 1 zero. This is rather a remarkable showing and deserves explanation. The fact is, the county of Warren is diversified and beautiful; therefore if a building be planted free from all nuisances, its environment is apt to be perfect. It is not for science, but for art alone, to determine whether the school in the midst of peaceful farm lands is more beautifully situated than is the one

upon the forested hillside. The latter may be more beautiful, but it hardly seems just to penalize in any degree the school that is less poetically environed. Even those schools marked 15 would be perfect were they free from the one objectionable feature. Greenwood has a signboard and a store shutting off the otherwise fine view; Jonesville is shut off by a church; Mortar Branch is not far from a pond; Oakland has objectionable buildings at rear; Oakland (Col.) a cemetery at the rear; Pleasant Hill, a cemetery at rear; Polkville, a cliff at one side; Rockfield (col.) a swamp at the side; Smith's Grove (col.) buildings at rear; Sulphur Springs, rocky ledge at rear; White's Chapel too shut off by trees and hill; Delafield (col.) has nothing attractive in surroundings, and moreover is shut in by high roads and rickety buildings.

Figure 2 shows that the consolidated school wins with 100% of the required standard.

The two-teacher school does not hold its place over the one-teacher white school, but does keep it over the colored school. The three schools that mar the record are very old schools; in the case of two of them, Greenwood and Oakland, buildings have encroached; the other one, Mortar Branch, has allowed a pond to increase in size until now it is a menace to health. The five colored schools, Jonesville, Oakland, Rockfield, Smith's Grove and Delafield, are in the outskirts of towns and have sacrificed beauty for convenience.

As was stated above, it is possible for every school in this county to score practically perfect in environment.

## B. Drainage.

### PER CENT OF SCHOOLS RECEIVING

	5	12.5	20	25
Consolidated .....	0	0	0	100
Two-Teacher .....	0	7	0	93
One-Teacher .....	2.5	19.5	11.5	66.5
Colored .....	12	20	20	48

Table 3. 1. Elevation S-25.

#### 1. Elevation

The drainage of the school sites could not be graded upon a certain per cent of rise. Cook Springs, in the midst of a rolling country, situated upon an outstanding projection, is no more precipitously placed than is Pisgah upon its steep-slanting hillside. Yet, Cook



Springs does not deserve so good a grade as does Pisgah because the latter is relatively very well situated with regard to its surroundings, and the former is not. The few school grounds receiving zero are so depressed that water stands long after rain. These three schools, Three Forks, Delafield, colored, and Rockfield, colored, should, of course, be properly and promptly ditched.

We see by Table 3 that the consolidated schools are 100% up to standard; the two-teacher follow closely with 93%; two-thirds of the one-teacher white and one-half of the colored schools reach it. Those that are credited with zero have already been noted.

2. Nature of Soil. (Table 4)

The soil was not subjected to analysis, but was adjudged good or bad according to whether it seemed to grow a good, indifferent, or poor crop. The few schools upon poor soil, with the exception of Woodburn colored, are among the old schools of the county.

Every consolidated school is upon soil fully up to standard; nearly two-thirds of the two-teacher schools are so situated; less than half of the one-teacher schools are likewise placed. Only a few one-teacher schools are upon poor soil. (See Table 4.)

PER CENT OF SCHOOLS RECEIVING

	10	15	25
Consolidated .....	0	0	100
Two-Teacher .....	0	35	65
One-Teacher .....	9.5	46.5	44
Colored .....	13	40	47

2. Nature of Soil S-25.

Table 4. I. Site.

There are enough good and fair soils in Warren County, and they are sufficiently extensive, to accommodate every school in the county. Soil below standard can be graded up by expert treatment, and this should be done by rural classes in agriculture.

C. Size and form.

There is great variability in the size and form of site, leading us to infer that probably there was a time when little attention was paid to this matter, but that in recent years the question has been agitated and an improvement made.

PER CENT OF SCHOOLS RECEIVING

	0	5	10	15	20	25	30	35	40	50	60	70
Consolidated .....	0	0	0	0	0	0	0	0	0	0	0	100
Two-Teacher .....	0	0	0	7	7	23	2	0	0	23	0	38
One-Teacher .....	0	3.7	2.9	2.9	18.5	33.3	1.7	7.4	5.5	16.7	4.7	2
Colored .....	13	8.4	33.3	0	25	0	7	13.3	0	0	0	0

Table 5. C. Size and Form S-70.

It may be easily seen from table 5 that the ideal modern consolidated and the two-teacher come nearer the ideal than do the one-teacher schools. The only schools that have no play space, or, so little as to deserve only 5, are, with the exception of Smith's Grove colored, old schools, Rockfield colored, Delafield colored, Polkville, Gilead, and Cave Mill.

Warren County can well afford to invest in play space for its children, and wherever possible, all old schools should be made to conform to ordinary hygienic requirements.

D. Landscape Effect.

A study of Table 6 shows that the landscapes of Warren County schools are practically unimproved. The consolidated schools receive 25, 20, and 15, but the one-teacher schools have 13% in the score of 5. It may be detected by inspection that the schools keep their usual rank, even though the scores be not a matter of particular pride.

PER CENT OF SCHOOLS RECEIVING

	0	5	10	15	20	25
Consolidated .....	0	0	0	25	50	25
Two-Teacher .....	0	14	30.7	30.7	8.6	15
One-Teacher .....	0	11.6	22	63	3.4	0
Colored .....	20	13.3	40	25.7	0	0

Table 6. D. Landscape Effects S-25

I. Site (concluded) S-235.

Until late years, very little attention has been paid to improvement of grounds; the plantings which have been made have hardly had time to mature. One aspect of beauty, however, is even now available, even though sadly neglected, and that is, the trees and shrubbery planted by Nature herself. An intelligent attention to clearing and spacing greenery already at hand would easily put the schools in a high rank in this regard.



### E. Walks, Fences, Hitchposts.

Again do we see the attention to property given by the consolidated schools. Out of a total valuation of 147.5 points, the first group of schools receive 30.6%; the two-teacher schools, 32.2%; the one-teacher schools, 37.2%. These points are made by 75% of the consolidated schools; by 40% of the two-teacher schools; by 12% of the one-teacher schools of which the colored schools do not in this instance form a part. (See Table 7.)

#### PER CENT OF SCHOOLS RECEIVING

	0	5	10	15	20	25
Consolidated .....	25		25	25	0	25
Two-Teacher .....	67	18	7.5		7.5	
One-Teacher .....	83	15	0	0	2	0
Colored .....	0	0	0	0	0	0

Table 7. E. Walks, fences, hitch posts.

Fences and hitchposts may be things of the past, but good usable walks are becoming more and more prime necessities. All schools should have them, not alone for looks, but for cleanliness as well.

#### Summary.

1. In accessibility, environment, elevation and nature of soil, the schools of Warren County take a high rank; in size and form, and landscape effect they are fair; in walks, fences and hitchposts, they are poor.
2. The consolidated schools lead in all points and stand well on the scale with a middle 50% range of 215-215 in total site.
3. The two-teacher schools stand second with middle 50% range of 180-145 in total site.
4. The one-teacher schools stand third with middle 50% range in total site.
5. Colored schools come last with middle 50% range of 125-97.5 in total site.

#### Conclusions.

1. The consolidated schools in the very nature of the case pay more attention to all the factors included under site.
2. The two-teacher schools are limited in accessibility on account of having no transportation.

3. The one-teacher colored are still more limited on account of very large districts.

Recommendations.

It is recommended that consolidation take place wherever it be at all practicable.

## CHAPTER V.

### INTERPRETATION OF SCORES ON THE BUILDING.

When one speaks of the rural school plant, there naturally arises in the center of attention, the school house itself; and we feel that the score card is dealing justly when it assigns to this feature almost one-third of the possible total score.

Let us see by Table II. of composite scores how our schools have fared in this respect.

### THE PERMANENT PLANT

*Table II. Composite Scores Arranged in Serial Order.*

THE BUILDINGS—445

#### *Consolidated Schools*

Richpond ..... 313.5	Boyce ..... 265
Woodburn ..... 307	Smith's Grove ..... 240.5

#### *Two and Three Teacher Schools*

Riverside .....321.5	Oakland .....236.5
Green Hill .....320	Richardsville .....232.5
Quarry Union .....315.5	Gott .....215
Rocky Springs .....312.5	Cedar Grove .....194
Plano .....311	Greenwood .....139
Alvaton .....301.5	Mortar Branch .....132
Browning .....272.5	

### ONE TEACHER WHITE SCHOOLS

Mt. Victor ..... 321	Roberson ..... 197
Walnut Grove .....257	Clifty ..... 192
Penn's Chapel .....235.5	Greencastle ..... 190
White's Chapel ..... 243	Grider ..... 187
Manning ..... 228	Bridgeport ..... 185.5
Barren Rivver ..... 225	Delafield ..... 184.5
Old Union ..... 223	Shady Grove ..... 182
Sulphur Springs ..... 215	Oak Grove ..... 182
Ellis ..... 234	Jefferson Seminary...177
Highland ..... 211.5	Boiling Springs ..... 174.5
Washington ..... 216	Mt. Pleasant ..... 174
Plum Springs .....199.5	Bay's Fork ..... 174

Three Forks .....	172	Lockwood .....	154.5
Dial .....	172	Flat Rock .....	153.5
Oakwood Mills .....	172	Walnut Hill .....	151.5
Martinville .....	172	Cherry Chapel .....	149.5
Underwood .....	172	Rolling Springs .....	149
Steven's Chapel .....	167	Rispah .....	147
Pleasant Hill .....	167	Beech Grove .....	147
Cedar Valley .....	167	Collett .....	144
Sand Hill .....	166.5	Union Grove .....	144
Gilead .....	164.5	Fairview .....	142
Hall's Chapel .....	162	Pisgah .....	140
Rockfield .....	162	Hadley .....	137
Cave Hill .....	160.5	Polkville .....	132
Ray's Branch .....	159.5	Cook Springs .....	117
Red Pond .....	157		

#### ONE TEACHER COLORED SCHOOLS

Smith's Grove .....	229.5	Covington .....	152
Woodburn .....	208	Salem .....	147.5
Allen Springs .....	202	Delafield .....	147
Oakland .....	174.5	Stony Point .....	146
Woodland .....	174	Blue Level .....	130.5
B. T. Washington .....	171.5	Richpond .....	130.5
Loving Union .....	159	Rockfield .....	127.5
Jonesville .....	157		

One is surprised in examining composite scores of Buildings to find the maximum 321.5 and 321 shown by two-teacher and one-teacher schools over the consolidated 313.5. While the consolidated leads in middle 50% range 307-260 against 315-15, and 197-154.5, one naturally wonders in what respect the first group of schools has allowed itself to be worsted.

#### A. Location.

Under Building are considered Location, with Orientations and Position on Site; Gross Structure, including Type, Foundation, Roof and Walls, Entrance, Balance and Finish and Condition; Internal Structure, with the sub-heads Construction, Illumination and Extra Rooms. These will be considered in sequence, that we may show up the weaknesses of the entire situation, and that we may show where there is the nearest approach to a correct solution of the problem. It may be seen by inspection

that building scores of colored schools compare very favorably with those of one-teacher white. The highest grade of the former 229.5, ranks sixth in the series, and the lowest of the former scores, 127.5, ten points higher than the corresponding white school, 117. Therefore, for the sake of brevity and clearness, the comparison between these two groups of schools will not be made explicit until later in the report.

1. Orientation. The matter of Orientation of a building is important, since upon it depends the direction of the light into the schoolroom. Science decrees that this light, in order of preference, is southeast, east, southwest, west, and south; that the light should come from the left only; and that a long battery of windows should let it in through a glass area equal to one-fifth or one-fourth of the floor space. (Table 8.)

PER CENT OF SCHOOLS RECEIVING

	15	20	25
Consolidated .....		75	25
Two-Teacher .....	17	70	13
One-Teacher .....	46	30	24

Table 8. I. Orientation S-25.

The problem is not so complicated in the case of the one-teacher school. An attractive entrance can be effected from the side as well as from the front, and the windows can be so placed as to bring light from any direction desired. The complexity, then, grows with the number of rooms, inasmuch as it is not possible to give the most desirable lighting to each room. The task narrows itself down into the possibility of saving every room from the least desirable light, that from the north. Evidently, the shape of the building has a great deal to do with the solution of the problem.

The more than one-teacher school with long axis from northeast to southwest would have the battery of windows on the southeast and the northwest sides. The short axis school would have batteries on the northeast or southwest sides. The long axis from northwest to southeast would have windows on northeast and southwest. If the axis be short, the windows will be on northwest and southeast. A long axis running from north to south would cause east and west lighting. A short axis would cause either north



or south lighting. A long axis from east to west would place the windows on the north or on the south. A short axis would cause east or west lighting. The axes preferred are the ones that will prevent the straight north lighting for any room, and which will at the same time give some of the east light to a maximum number of rooms.

If we examine the scores we see that 20 schools are perfect; 33 schools grade 20, and 33 grade 15. One may question the high standing in the matter of Orientation, but by analyzing the figures, we shall discover that it is largely accidental. Only 25% of the (Fig. 8) consolidated schools receive perfect; 13% of the two-teacher schools and 24% of the one-teacher schools receive it. The one-teacher schools and some of the two-teacher schools are cross-lighted, which renders it almost impossible not to receive a favorable light at some time of the day. The cross-lighting, while working a great disadvantage to illumination, does not cause a low score on Orientation. We find a number of the two-teacher schools actually making (Table 8) lower scores here, which shows that this matter has not been given sufficient attention in our newest buildings.

2. Position on Site. Here we find the first two groups (Table 9) of schools assume their old places. Their grounds are larger which renders it possible to place the building attractively, and yet leave abundant space for play grounds. All the buildings are for the most part well placed, due no doubt to the sense of balance that guides one in placing a house upon a site.

#### PER CENT OF SCHOOLS RECEIVING

	10	15	20	25
Consolidated .....				100
Two-Teacher .....				100
One-Teacher .....	1.5	24	1.5	73

2. Position on Site S-25.  
Table 9. II. Building  
A. Location

#### Summary.

1. In the totals of Location the schools follow their usual order—consolidated, two-teacher, one-teacher, due to the care that usually accompanies the erection of the former schools.
2. The one-teacher schools are not so well placed on site,

on account of the impossibility of conserving space and preserving beauty on a small plot of ground.

Conclusions

1. The new schools have paid little attention to Orientation.
2. Many of the old schools have secured good results accidentally.
3. Schools are very well placed on grounds.
4. The total scores are high.
5. The low scores on Building are not due in any great measure to this factor.

Recommendations

Proper Orientation should be taken account of.

B. Gross Structure.

First impressions are most lasting, is a general truth that is as applicable to the appearance of a rural school as to other objects. The school should be attractive to the stranger, but especially should it appear so to the child. This is good business, as well as educational sense. A good-looking school house enhances the value of all properties in the district; it causes community pride and solidarity; it holds the young people; it is worth the price.

PER CENT OF SCHOOLS RECEIVING

	0	5	10	15
Consolidated .....			50	50
Two-Teacher .....		31	15	54
One-Teacher .....	5.9	83.6	9	1.5

Table 10. I. Type S-15.

Under Gross Structure are included type, Foundation, Roof, Walls, Entrance, Balance, Finish and Condition. By examining the table of the entire set of scores undifferentiated as to groups of schools, we see in Fig. 10, (1) Type, a preponderance of the mediocre. This is explained by the fact that a majority of the one-teacher schools are of the box cottage variety. The variants are found in the consolidated, the two-teacher and a few one-teacher schools. The per cents on types makes this point clear. (Table 10.) Of course, with the disappearance of the one-teacher structure, there automatically comes an improvement here.

2. Of Foundations, the same may be said, only in a more pronounced degree. (Table 11.) All consolidated schools are on good, well-made foundations of stone or concrete; about two-thirds of the two-teacher schools are so placed; while the one-teacher schools have only 4.5% well supported. This leaves 95.5% of the last named with a big, single stone pillar at each corner, and the entire under-structure exposed to the winds and the cold. The new buildings will surely not be deficient here, but those that are already in use should make some inexpensive improvement. The Delafield School has the pillars, but is solidly planked-in also, which helps in temperature and in looks.

PER CENT OF SCHOOLS RECEIVING

	5	10	15	17.5	20
Consolidated .....					100
Two-Teacher .....	31.3			7.7	62
One-Teacher .....	95.5	1.5			3

Table 11. II. Foundation S-20.

3. Practically all roofs are in good condition, but as appears in the tables (Table 12), there is little variation from the two-gabled roof in the one-teacher school. The inexpensive box cottage accounts for this, but it is possible to introduce a pleasing variation in the shape of the porch with hip-roof growing out of main roof. A number of old structures have been improved thereby. Among the most attractive we find Ellis and Manning.

PER CENT OF SCHOOLS RECEIVING

	0	5	6.7	8	9	10
Consolidated .....				25		75
Two-Teacher .....	7			15	39	39
One-Teacher .....	3	1.5		78	1.5	16

Table 12. III. Roof S-10.

3. With the exception of two consolidated schools, Woodburn and Richpond, we find that all Walls are too thin, consisting only of weather boarding, lathing and plastering, or ceiling. Of course, economy explains this situation, but the new schools should be built with permanence in view. Good walls economize fuel, even though the original cost be somewhat high. (Table 13.)

PER CENT OF SCHOOLS RECEIVING

	0	5	10
Consolidated .....		50	50
Two-Teacher .....		100	
One-Teacher .....		100	

Table 13. Walls S-10.

II. BUILDING. B. Gross Structure.

4. The major portion of the schools have no Entrance other than the door. (Table 14.) Those that have them belong to the first two groups, or to the newly made-over one-teacher group. An adequate entrance, if it be a porch, not only adds to appearance, but is economical in many ways. It protects the main rooms from dirt, damp and cold, and affords a very good play room in bad weather.

PER CENT OF SCHOOLS RECEIVING

	0	10	15	20
Consolidated .....	1			100
Two-Teacher .....	32	7	7	54
One-Teacher .....	72	10	6	13

Table 14. IV. Entrance S-20.

5. We find Balance and Finish also declining toward mediocrity, and should we examine the tables (Table 15) we could discover that only the new schools grade up well. Even the consolidated are outdone by the showing made by Green Hill, Plano, Riverside and Rocky Springs, and the one-teacher school, Mount Victor. While not expensive in style, these buildings are very pleasing to the eye, and but demonstrate how a little thought given to design and finish is thought well given.

	0	5	10	15	20	25	30	35	40
Consolidated .....					25		25	50	
Two-Teacher .....		15.3	23		7.7			23	31
One-Teacher .....	3	35.5	40		20				1.5

Table 15. V. Balance and Finish.

6. Again the consolidated schools come to the foreground under condition, with 75% perfect (Table 16), 25% fair, while 15% of the last group of schools are so dilapidated as to deserve zero.



PER CENT OF SCHOOLS RECEIVING

	0	5	10	15	20	25
Consolidated .....				25		75
Two-Teacher .....		16.3	7.7	15	7	54
One-Teacher .....	15	12	3	38	15	17

Table 16. VI. Condition S-25.  
 .... IIBUILDING. B. Gross Structure.

When we consider the fact that 75% of the consolidated schools are new; that 61.5% of the two-teacher schools are new that only 24.2% of the one-teacher schools are new, and that the first two groups include 46% of all the new schools, although equaling in number only about 20% of total schools, we can easily see why these groups still lead in Gross structure. The tables indicate clearly the situation. (Tables 10, 11, 12, 13, 14, 15, 16.)

Summary.

1. The consolidated schools lead in every point, save one, under Gross Structure.
2. The exception occurs in the case of two-teacher schools being ahead in balance and finish.

Conclusions.

1. The gross structure of the one-teacher school of Warren County is usually of the cheap, ordinary variety in type, foundation, roof, walls, entrance, balance, finish and condition.
2. The consolidated schools have a possibility of improvement in type, walls, balance and finish.
3. The new two-teacher schools rank well with the best in the country in balance and finish.

Recommendations.

1. The one-teacher school should be eliminated as soon as it is practicable to do it.
2. Past experience should aid in the future erection of the consolidated and two-teacher school. Attention should be given to every detail of gross structure.

C. Internal Structure.

The third division under Building; namely, internal structure, is itself divided into the sub-headings, construction, illumination and extra rooms. Under construction come size of rooms, shape, floors, walls, doors, blackboards and



color scheme, which will be analyzed as to their excellence in the county.

If the exterior of a building attracts the interest of the visitor, it is the interior that holds the interest of the regular occupant. It is the home of childhood for the major part of the working day, and childhood should be surrounded not only with the utilitarian and the comfortable, but with the sanitary and beautiful as well.

### 1. Construction.

Upon inspecting the scores at this stage of the study, we might be led to infer that the only factors entering herein are youth and old age, since the highest total score, 82, is given to a new consolidated school; the next highest, 79, to a new two-teacher and to a new colored school; the lowest, 41, to an old colored school; 44 to an old two-room and 45 to a consolidated in an old building.

#### PER CENT OF SCHOOLS RECEIVING

	A Cloak Room	B Closet and Storeroom	C Library Room	D Work Room	E Fuel Room
Consolidated .....		0	25	0	75
Two-Teacher .....	70	0		0	85
One-Teacher .....	2	0	2	0	39
	S-20	S-15	S-15	S-15	S-15

Table 17. A Table Showing the Standing of Old and New Buildings in Relation to Standard Scores Under Construction.

A study of the table (17) shows clearly the advantage going to new schools in all points; but when we remember the statement of the previous chapter that the first two groups of schools, while embracing only 20% of all the schools, do actually represent 46% of all new schools, we shall expect them to keep their relative positions.

#### PER CENT OF SCHOOLS RECEIVING

	5	7.5	10	12.5	15	17.5	22.5	25
Consolidated ..			25			25	25	25
Two-Teacher ..					7.6		7.7	84.7
One-Teacher ....		2	4		16	18	13	47

Table 18. a. Size S-25.

a. In Size (Table 18) we find that the first group of schools does not quite rank up with the others. Why? In the first place, Smith Grove is very much over-crowded and is sadly in need of a new building. Richpond and Boyce, although new, were not constructed of sufficient size to

accommodate the unexpected attendance. Woodburn, alone, measures up to a correct standard as to size of school rooms. In the second place, the one-teacher school is drawing upon an ever-thinning district, but is still being constructed according to previous demands. We, therefore, find the one-teacher schools coming nearer to the requirements than do the other groups.

PER CENT OF SCHOOLS RECEIVING

	15	20	25
Consolidated .....	50		50
Two-Teacher .....	40	20	40
One-Teacher .....	15	30	55

Table 19. b. Shape S-25.

b. Again take the matter of Shape. (Table 19.) The one-teacher school is built according to a long tried-out plan of ratio of 4 or 5 to 6, while the others are made to fit into the proportions of the building, regardless of how the individual room is sacrificed.

PER CENT OF SCHOOLS RECEIVING

	0	5	10
Consolidated .....		50	50
Two-Teacher .....	15	46	39
One-Teacher .....	43.3	35	21.7

Table 20. c. Floors S-10.

c. New Floors in new buildings, and new floors in old buildings, account for the satisfactory showing made by this item. The floors are in the main well kept and oiled. (Table 20.)

PER CENT OF SCHOOLS RECEIVING

	0	5	10
Consolidated .....	25	25	50
Two-Teacher .....	14	86	
One-Teacher .....		100	

Table 21. d. Walls S-10

II. Building. C. Internal Structure, 1. Construction.

d. Only two schools in the county (Table 21)), Woodburn

and Richpond, have hard plastered Walls and plain casing. Smith Grove's walls are covered with old paper. Boyce is ceiled. The popular inner wall finish throughout the county is ceiling. This has its advantages. It is much more durable than ordinary plaster, can be hard finished, and in pre-war days was more economical in the long run. Its great disadvantages are the difficulty of getting it in color tones light enough for the school room, and in having grooves in which dust may gather. The prohibitive price of lumber will probably cause its use no longer to be problematic. Paper is, of course, not at all suitable for the school room, although the efforts of those teachers who laboriously secured funds in order to make a temporary covering for unsightly walls is very much to be commended. Good plaster, with a hard finish, is the most satisfactory inner covering for walls of the school room, but its presence is all too rare.

PER CENT OF SCHOOLS RECEIVING

				25	50		25
Consolidated .....				25	50		25
Two-Teacher .....		39			61		
One-Teacher .....	1.5	88.5	3		7		

Table 22. e. Doors-S 10

e. Only two schools in the county, Woodburn and Smiths Grove, have doors opening outward. In the matter of doors, we see the superior structure of the first two classes of schools. (Table 22.)

	3	4	5	6	7	8
Consolidated .....		25	25	25		25
Two-Teacher .....		69	31			
One-Teacher .....	4.5	76.5	13	4.5		1.5

Table 23. f. Blackboard S-10.

II. BUILDING C. Internal Structure

7. Construction (Concluded).

f. In considering the matter of Blackboards, we note that with a possibility of receiving 10, only two schools receive as high as 8. (Table 23.) These two schools, Woodburn and Flat Rock, have slate boards. Other schools rank low in this particular, because of poor material, and because of lack of attention to height of chalk rail. Only one school

in the county, Delafield colored, seems to have taken this last item into consideration.

PER CENT OF SCHOOLS RECEIVING

	0	2	4	6
Consolidated .....			50	50
Two-Teacher .....		29	54	17
One-Teacher .....	7	70	16	7
	0	2	4	6

Table 24. g. Color Scheme S-10

g. In (Table 24) reviewing Color, we come to one of the most serious defects in our rural schools. So important is color in its effect upon the health and the mind that it may be questioned whether the score card has not erred in assigning to it a standard value of 10 only. Low as the standard is, no school attains more than 6. Almost all of the schools are either painted, ceiled and varnished, or plastered, thus satisfying the requirement for a hard finish; but when it comes to ceiling and the color of side walls, unsatisfactory results occur. The actual color of a room should be determined by its lighting; a dark room should be in warm buff, and a light room should be in a soft gray or green-gray. The ceiling should be dull white or cream. In our county schools the ceilings are usually darker instead of lighter than the side walls, and not infrequently of the non-reflecting blue. The walls are often brown or blue. Even Richpond, which has soft gray walls, has a very much darker ceiling, which absolutely refuses to be a reflector of any kind. One of the most satisfactory colors is found at Loving Union. There was found a greenish-gray wall, but which unfortunately was paper and had to be graded off on hard finish. The ceiled walls are occasionally satisfactory in natural color, but more often are not. The dark wood so often found would be most pleasing in a summer camp, but should not be the choice for school rooms. Occasionally, however, there is found the well-selected light pine which gives adequate lighting. Such selections are found at Plano and at Allen Springs.

Summary.

1. In total scores the schools follow their usual custom in rank—consolidated, two-teacher, one-teacher.
2. The first schools lead in floors, walls, doors, blackboards and color.
3. The two-teacher leads in size of rooms.



4. The one-teacher leads in shape of rooms.

Conclusions.

1. The size and shape of rooms in our new buildings are not thoroughly satisfactory.
2. The inner walls are not generally well finished.
3. The doors are usually not of the best.
4. Blackboards are generally unsatisfactory.
5. Color scheme has been given little attention.

Recommendations.

1. The size and shape of rooms in future buildings should be made objects of study.
2. The papered and poorly plastered walls should be well plastered.
3. All doors should open outward. A change should be made immediately.
4. No more cheaply constructed doors should be used.
5. More slate boards should be introduced.
6. The chalk rail for smaller children should not be more than 26 inches from floor.
7. Ceilings should be cream-tinted.
8. Side walls should be soft buff or gray.

2. Illumination. One needs only to pass the old, old home, be it in town or in country, to realize that the matter of illumination has only recently emerged as a science. Windows are openings in the walls for the sake of securing a modicum of light, or for satisfying one's curiosity as to the passerby, but not for light—light comes from heaven alone. So must have argued our old architects, and there should be no occasion for surprise when we find that school houses were constructed according to that principle. The amount of

a. Glass Area required by oculists now-a-days is one-fifth to one-fourth of floor space. We find that of the nine schools perfect in this respect, only one, Oakland, is an old school. Of the grade 25, only Smith's Grove, Red Pond and Mt. Pleasant are old; the others reflect a recent administration. The remaining schools cluster around 15, and the fact that Woodburn, Boyce, and a number of our new one-teacher schools receive that score, shows that not yet do our people fully realize the requirements of good schoolroom lighting. (Table 25.)

PER CENT OF SCHOOLS RECEIVING

	5	7.5	10	12.5	15	17.5	20	22.5	25	27.5	30	32.5	35	37.5	40	42.5
Consolidated								25	25	25	25				25	
Two-Teacher					25			15.3	31		23					7.7
One-Teacher			7		63.5		13	4.5					10			

Table 25. Illumination.



b. There are but twelve schools that have windows banked so as to receive light from only one side or rear, or both. These are consolidated and two-teacher schools. Two consolidated schools, Richpond and Woodburn, receive it from the left and rear. No school has windows closely banked or receiving light from left alone. All one-teacher and a few of our two-teacher schools are cross-lighted, a lighting that is very sharply condemned by our experts. Only three schools, and these are of the two-teacher group, Alvaton, Browning, and Quarry Union, have the five-foot space from front desk to front wall, thus preserving children's eyes from a glare.

Only thirteen schools, two consolidated, two two-teacher and nine one-teacher schools have shades to the windows. Woodburn, alone has shades adjustable from top as well as from bottom.

Taking these facts into consideration, we see that while the tables show the school groups in their usual order in total lighting, no school in the county is perfect in illumination.

#### Summary:

1. Illumination was formerly given little attention.
2. It does not yet receive enough attention.
3. The schools in order of totals are consolidated, two-teacher and one-teacher.

#### Conclusions:

1. Perfection in illuminations depends upon mechanical construction which is possible to attain.

#### Recommendations:

1. Windows should be added or enlarged where the glass area does not come up to standard.
  2. The windows nearer front than five feet should be heavily shaded.
  3. All schools should have shades adjustable from top and from bottom.
  4. The seating in some schools can be changed in order that lighting may come from left and rear.
  5. The future buildings should be constructed with attention to these details of windows; glass area, banking on left of pupils; windows not too near front of room; narrow mullions between; near ceiling, three and one-half feet from floor.
3. Extra Rooms. (Table 26.)

The one-teacher school is usually the one-room school. Of the sixty-nine schools of this type in the county, only twenty-three have extra rooms of any kind; of these, twenty-one are fuel rooms; one has a cloak room, but no fuel room. This leaves Mt. Victor, the only one-teacher school in the county with any extra rooms to speak of. There we find two cloak rooms, a small library and a fuel room.

PER CENT OF SCHOOLS HAVING

	Cloak Room	Store Room	Library	Work Room	Fuel Room
Consolidated .....		0	25	0	75
Two-Teacher .....	70	0		0	85
One-Teacher .....	2	0	2	0	39

S120 S-15 S-15 S-15 S-15

Consolidated schools have auditoriums.

Seven of the two-teacher schools have sliding partitions

Table 26. 3. Extra Rooms S-80.

II. BUILDING. C. Internal Structure

The two-teacher schools fare somewhat better. Seven of them have each two large cloak rooms; one has one cloak room. Six of these, and four others, have fuel rooms.

In the matter of cloak rooms, the consolidated school is at a discount. In every case the hall is the place for hats and wraps, and no separate lockers are provided. These schools, however, have fuel rooms, and one, Smith's Grove, has a library room. (Fig. 16) Not a school in the county has closet space for supplies, nor is there a special work room to be found. One would expect a better showing in these respects from the first two groups.

There is one particular, however, wherein the consolidated schools have the advantage; namely, in an auditorium. No value for such a room is given in the score card, which is to be used mainly in the one-teacher school, and, therefore, no value in numerical terms is given in the survey. This room, however, is of inestimable importance in helping to build up the school and community spirit, and is fully noted in this report.

The new two-teacher schools, Alvaton, Browning, Green Hill, Plano, Quarry Union, Riverside and Rocky Springs are built with sliding partition between rooms, which makes it possible to have a fine auditorium for special meetings. This fact is duly noted in the report, even though no extra rating be given for it.

Summary:

1. The extra rooms for the entire school situation are entirely inadequate.

2. The consolidated rank first in this respect, and the one-teacher last .

Conclusions:

1. Too little attention has been paid to the important matter of conveniences.

2. The schools are unpardonably negligent in the matter of fuel rooms.

Recommendations:

1. That our new schools be so merged that they can afford to have ample cloak rooms for boys and for girls; good fuel rooms; a good work room; a library; a room or deep closet for supplies.
2. That the new two-teacher schools follow the example set by these schools that have sliding partitions.
- 3.. That no new consolidated school neglect its assembly room.

CONCLUSIONS ON TOTAL OF BUILDING.

By our studies, we find the answer to our inquiry made at the beginning of this topic: Why are the consolidated schools superseded in several instances by the second group, and in one by the third group? The reasons are:

1. Both of the other groups have examples of balance and finish which excel that of any consolidated school.
2. The two-teacher schools lead in size of rooms.
3. The one-teacher schools lead in shape of rooms.

C. INTERNAL STRUCTURES

1. Construction:

A. Size S-25.

a. Floor Space S-15:

80% of new buildings receive 15.

70% of old buildings receive 15.

b. Air Space S-10:

70% of new buildings receive 10.

53% of old buildings receive 10.

B. Shape S-25:

56% of new buildings receive 25.

63% of old buildings receive 25.

C. Floors S-10:

64% of new buildings receive 10.

11% of old buildings receive 10.

D. Walls S-10:

9% of new buildings receive 10.

0% of old buildings receive 10.

E. Doors S-10:

0% of new buildings receive 10.

0% of old buildings receive 10.

F. Blackboards S-10:

0% of new buildings receive 10.

0% of old buildings receive 10.

G. Color Scheme S-10:

0% of new buildings receive 10.

0% of old buildings receive 10.

## CHAPTER VI.

### INTERPRETATION OF SCORES ON SERVICES AND EQUIPMENT.

In addition to all the desirable features of Site and Building, the Permanent Plant cannot be complete without its necessary quota of Service and Equipment; namely, Heating, Ventilation, Artificial Lights, Seats, Fire Extinguisher, Water Supply, Toilets, Playground Apparatus, Flagstaff, Horse Shed, or Parking Place for Autos.

The following tables show the total scores made by our schools on these items:

#### THE PERMANENT PLANT.

TABLE III—COMPOSITE SCORES ARRANGED IN SERIAL ORDER.

Service and Equipments-320.

##### CONSOLIDATED SCHOOLS.

Richpond .....	250	Smith's Grove .....	192.5
Woodburn .....	242.5	Boyce .....	140

##### TWO AND THREE-TEACHER SCHOOLS.

Oakland .....	142.5	Cedar Grove .....	120
Riverside .....	140	Browning .....	117.5
Gott .....	135	Plano .....	117.5
Quarry Union .....	135	Greenwood .....	107.5
Richardsville .....	127.5	Alvaton .....	105
Rocky Springs .....	125	Mortar Branch .....	97.5
Green Hill .....	122.5		



ONE-TEACHER WHITE SCHOOLS.

Flat Rock .....	157.5	Walnut Hill .....	100
Mt. Victor .....	140	Beech Grove .....	100
Roberson .....	135	Cook Springs .....	97.5
Washington .....	135	Hall's Chapel .....	97.5
Old Union .....	130	Jefferson Seminary.....	97.5
White's Chapel .....	122.5	Bridgeport .....	97.5
Boiling Springs .....	122.5	Polkville .....	97.5
Sulphur Springs .....	122.5	Sand Hill .....	95
Steven's Chapel .....	120	Oak Grove .....	95
Clifty .....	117.5	Walnut Grove .....	95
Penn's Chapel .....	117.5	Hadley .....	92.5
Manning .....	115	Martinsville .....	92.5
Delafield .....	115	Oakwood Mills .....	92.5
Shady Grove .....	110	Cave Hill .....	87.5
Barren River .....	107.5	Dial .....	87.5
Ray's Branch .....	105	Highland .....	87.5
Three Forks .....	105	Glenmore .....	87.5
Plum Springs .....	105	Rockfield .....	87.5
Pleasant Hill .....	102.5	Union Grove .....	87.5
Cedar Valley .....	102.5	Underwood .....	85
Lockwood .....	102.5	Mt. Pleasant .....	85
Ellis .....	102.5	Fairview .....	82.5
Red Pond .....	102.5	Mizpah .....	82.5
Rolling Springs .....	102.5	Grider .....	80
Bay's Fork .....	102.5	Gilead .....	77.5
Pisgah .....	100	Collett .....	67.5
Greencastle .....	100	Cherry Chapel .....	57.5

COLORED SCHOOLS

Smith's Grove .....	122.5	Covington .....	87.5
Loving Union .....	112.5	B. T. Washington.....	87.5
Woodburn .....	112.5	Oakland .....	82.5
Jonesville .....	107.5	Delafield .....	77.5
Richpond .....	107.5	Rockfield .....	67.5
Stony Point .....	105	Salem .....	67.5
Woodlawn .....	105	Allen Springs .....	67.5
Blue Level .....	97.5		

With a possible score of 320, we see the consolidated schools leading with maximum 250, middle 50%, 242.5-192.5, minimum 140; the two-teacher schools have maximum 142.5, middle 50%,



135-117.5, minimum 97.5; the one-teacher white schools take second rank in maximum 157.5, third in middle 50% of 110-87.5, and last in minimum 57.5; the colored schools show maximum 122.5, middle 50%, 107.5-82.5, minimum 67.5.

Let us study th items in detail.

PER CENT OF SCHOOLS RECEIVING

	0	35	45
Consolidated .....		50	50
Two-Teacher .....		100	
One-Teacher .....		97	3

Table 27. A. Heating S-50

A. Heating. A furnace (Table 27) or the jacketed stove properly installed are the standard heaters for school, yet only four schools in the county conform to standards; two of the first group of schools have furnaces; two of third group have jacketed stoves. The jacketed stove is not a favorite in the county, although it has been given a number of trials. The trouble may have been with the installation, but a majority of the teachers agreed that the good school heater is the safest proposition. However, the highest scores are given to good furnaces and satisfactory jacketed stoves. All other stoves in the county are, according to appearance and testimony, very good.

A thermometer should be in every school room, not for the sake of keeping an absolutely even temperature, but for the sake of preventing extremes. No thermometer was found in any school in the county.

PER CENT OF SCHOOLS RECEIVING

	0	45
Consolidated .....	50	50
Two-Teacher .....	100	0
One-Teacher .....	98.5	1.5

Table 28. B. Ventilation S-45

B. Ventilation. (Table 28.) Too little attention is paid to ventilation in the average school. Scientists tell us that the change of air is not needed so much for the fresh supply of oxygen, as for keeping up circulation of air, and for sweeping away odors. The schools were visited in the summer, and records made upon festimony, rather than upon observation. There seems to be no effort to keep the needed utensils of water upon the stove in winter; no window board in the lower part of the window that will allow the influx of air without draft.

The only schools that have any means of artificial ventilation are the two consolidated ones that have furnaces, and one of the one-teacher schools with a jacketed stove.. All others seem to depend upon the window occasionally thrown open.

PER CENT OF SCHOOLS RECEIVING

	Less	17.5	22.5	30
Consolidated .....	25	25		50
Two-Teacher .....	92.3	7.7		
One-Teacher .....	97	1.5	1.5	

Table 29. C. Artificial Lights S-30

C. Artificial Lights. (Table 29.) The artificial light is an index as to how much a building is used as a community center. The districts that assemble for evening programs will necessarily become growing districts, and a good, substantially hung light is a necessity. With the exception of Smith's Grove, which has the best of artificial lights, electricity, and Woodburn, which has gas, all other schools that have lights at all depend upon oil. Oil lamps placed in sconces along the side walls, or well hung in chandeliers, are satisfactory. The hand lamp, placed upon a shelf, is not safe and should not be relied upon. That the consolidated school engenders more community spirit may be inferred from the fact that three-fourths of the consolidated schools have artificial lights. About one-third of the two-teacher schools, and only one-fourth of the one-teacher schools have them.

PER CENT OF SCHOOLS RECEIVING

	Less	35	37.5
Consolidated .....		25	75
Two-Teacher .....	77	23	
One Teacher .....	98.5	1.5	

Table 30. D. Seats and Desks S-50

III. SERVICE AND EQUIPMENT.

D. Seats and Desks. (Table 30.) Absolutely movable furniture is perhaps prohibitive in price to many of our schools at this time. It is an ideal in seating to which we may aspire for all school children in the future; but this ideal should be realized at once in our primary grades. The smaller children should have chairs, tables and book shelves. The older children can satisfy themselves, for a while at least, with adjustable desks.

The schools of Warren County have not yet put in the movable desks; nor have they any of the adjustable kind. They have, however, without a single exception, the three sizes of desks in one-teacher and even more sizes in other schools. Single desks are coming in, and it is recommended that new furniture be of the more approved kind.

The teacher's desk is an item worth considering. It should be one large enough for books and records, and it should be fitted with locks. There should be, also, a comfortable, substantial chair. Only one school in the county, White's Chapel, has supplied the teacher with these standard necessities. All other schools are satisfied with a large table with drawers and a fairly well-made chair.

The chairs for special functions are in all the consolidated schools, and in those two-teacher schools that can be converted into assembly rooms. No other school has made any special arrangement for seating audiences.

The seating of the county is very good, although not fully up to the most approved requirements.

#### NONE IN THIS COUNTY'S SCHOOLS


Table 31. E. Fire Extinguisher S-10.

E. Fire Extinguisher. It is a matter of regret that there are no fire extinguishers in the rural schools of the county (Table 31). While the one-teacher schools may not be much of a fire trap for life, the property itself is worth saving and a conveniently placed, well working fire extinguisher is more handy and more safe than the bucket brigade. It is especially recommended that the two or more teacher school be fortified in this way against fires.

F. Water. (Tables 32-36.) In considering the different factors of water supply, such as drinking facilities, pump and washing facilities, we agree that there is one aspect in which every school should tolerate nothing short of perfection, and that is the quality of the water. Many of our county schools begin their work each fall without the condition of the water being investigated. It is not sufficient that a good well or cistern be provided, that there is a good pump, good covering and drainage, but the well or cistern should be cleaned every year and the water tested. Neither of these things is done consistently,

and in some cases the cistern supply has been neglected until at the last moment it is filled from a creek nearby. Creeks running through farm lands are not models of sanitation and one would hardly expect their waters to stand high in a bacteriological test.

Occasionally a school is found that has no water of any description on the grounds. In this case the water is brought in buckets from a neighboring farm yard. This means that the water cannot be in the best condition upon arrival, neither will the most generous use be made of it.

#### PER CENT OF SCHOOLS RECEIVING

	None	0	5	15
Consolidated .....			25	75
Two-Teacher .....	7.5	7.5	54	31
One-Teacher .....	27	11	30	32

Table 32. 1a. Quality of Water S-15  
F. Water Supply.

1. We find that three-fourths of the consolidated schools have water that tests perfectly by the State Board of Health, and one-fourth tests fair. (Table 32.) The table shows that one-thirteenth of the two-teacher and over one-fourth of the one-teacher schools have no water at all on the grounds; one-thirteenth and over one-tenth of these same schools have water unfit for human consumption. The two-teacher school equals and outranks the one-teacher in the per cent of perfect and fair water.

#### PER CENT OF SCHOOLS RECEIVING

	None	None	0	5
Consolidated .....				100
Two-Teacher .....				100
One-Teacher .....			13	87

Table 33. 1b. Pumps S-5

#### PER CENT OF SCHOOLS RECEIVING

		Individu- al Cups	Fount'ins
	0	10	15
Consolidated .....		25	75
Two-Teacher .....		100	
One-Teacher .....		85.5	1.5

Table 34. 2. Drinking Facilities S-15.



PER CENT OF SCHOOLS RECEIVING

	0	10
Consolidated .....	100	
Two-Teacher .....	100	
One-Teacher .....	98	1.5

Table 25. 3. Washing Facilities S-15.

2. All consolidated schools have Pumps or Hydrants. (Table 33.) All two-teacher schools have pumps. Only seven-eighths of the one-teacher schools are so provided.

Every school in the county has the Individual Drinking Cup or Fountain; (Table 34) the consolidated excel in the last.

3. Only one school has any washing facilities. (Table 35.) This is a one-teacher school.

PER CENT OF SCHOOLS RECEIVING

	Less	20	22.5	25	27.5	30	32.5	35
Consolidated .....				25		25		50
Two-Teacher .....	38	31				31		
One-Teacher .....	47	23		4.5		24	1.5	

Table 36. Total of Water S-50

III. SERVICE AND EQUIPMENT (Continued)

G. Toilet S-45.

Even the highest scores in the county are not perfect on Water Supply, due to the absence of Washing Facilities. (Table 36.)

It is hoped that every school will have a good, clean, frequently tested water supply; that all pumps will be put in perfect condition, basins, soap and paper towels be provided.

PER CENT OF SCHOOLS RECEIVING

	0	5	10
Consolidated .....			100
Two-Teacher .....		15	85
One-Teacher .....	8	17	75

Table 37. 1. Adequacy S-10.

G. Toilets. (Tables 37-41.) The average toilet of the average country school is an eye-sore and a menace to health. There should be two toilets in every school; these should be seventy-five feet from the water supply—drain away from it;



preferably on opposite sides of the grounds; they should be secluded by shrubbery and by screens; they should be screened against insects; they should be given frequent attention and should be in perfect physical condition.

1. All consolidated schools are adequately supplied with toilets; the two-teacher schools are fairly supplied, but the one-teacher school has 8% schools without any; 17% with only half enough; the other 75% have enough. (Table 37.) All of the consolidated schools have given attention to seclusion; the other schools have about three-fourths of their toilets well hidden. (Table 38.)

PER CENT OF SCHOOLS RECEIVING

	0	5	10
Consolidated .....			100
Two-Teacher .....		20	80
One-Teacher .....	80	20	

Table 38. 2. Seclusion S-10.

2. While lime is 100% in use throughout the county, yet no toilet is absolutely sanitary. The most perfect, most practical and cheapest one in existence is the kind fully described in bulletins of the State Board of Health, Louisville, Ky. Every rural school should install one of these excellent toilets. (Table 39.)

PER CENT OF SCHOOLS RECEIVING

	from lime	from construction
Consolidated .....	100	
Two-Teacher .....	100	
One-Teacher .....	100	

Table 39. 3 Sanitation S-15.

3. The condition of toilets in general is far from satisfactory. It will be seen from the figures under condition, that only the occasional school pays the necessary attention thereto. The inspection was made at the beginning of the school term, and then, if ever, one might expect all equipment to be in its best state. (Tables 40-41.)

PER CENT OF SCHOOLS RECEIVING

	0	5	10
Consolidated .....		75	25
Two-Teacher .....		85	15
One-Teacher .....	23.5	75	1.5

Table 40. 4. Condition S-10.

PER CENT OF SCHOOLS RECEIVING

	Less	20	22.5	25	27.5	30	32.5	35	37.5	40
Consolidated .....				25		50				25
Two-Teacher .....	23			23		31				23
One-Teacher .....	8	39		20	16	10		7		

PER CENT OF SCHOOLS RECEIVING

	0	12.5
Consolidated .....	25	75
Two-Teacher .....	100	75
One-Teacher .....	100	75

Table 42. H. Playground Apparatus S-25.

H. Playground Apparatus. (Table 42.) The playground apparatus of the schools of Warren is conspicuous by its absence. Only four schools, Richpond, Woodburn, Smith's Grove, which compose 75% of the consolidated schools, and Richpond, colored, have any apparatus whatsoever. It should be entirely feasible to have baseball diamonds in the country school. Swings, see-saws and basketball material are also as effective and as economical as any other apparatus one could hope to find. It is recommended that schools make provisions for supplies that will tempt the children to exercise their limbs and to expand their spirits.

PER CENT OF SCHOOLS RECEIVING

	0	5
Consolidated .....	25	75
Two-Teacher .....	39	61
One-Teacher .....	85.5	14.5

Table 43. I. Flagstaff S-5.

I. The Flagstaff. (Table 43.) The flagstaff is the hand that holds the emblem of our patriotism, but it extends itself at the entrance of all too few of our schools. If our public school system justifies its expenditures on the strength of its aim being to make good citizens for this great republic, then the schools should not fail to hold up the symbol of our faith and hope. Three-fourths of the consolidated schools recognize this imperative; two-thirds of the two-teacher, and only one-seventh of the one-teacher schools do so.

PER CENT OF SCHOOLS RECEIVING

	0	5	10
Consolidated .....	50		50
Two-Teacher .....	92.3		7.7
One-Teacher .....	100		

Table 44. J. Horse Sheds S-10.

III. SERVICE AND EQUIPMENT (Concluded).

J. Horse Sheds. (Table 44.) The score card calls for horse sheds in the well appointed schools, but in this day the automobile has become so nearly universal that the old family horse is almost supplanted. Fifty per cent of the consolidated schools have horse sheds, and also good places for parking automobiles; one-thirteenth of the two-teacher schools have this same advantage. No other school in the county has any provision, other than the roadside, or the front yard. A good driveway and large, smooth, somewhat shady space at the side rear for taking care of all vehicles, although there be no horse shed, would be a convenience, and would contribute to hospitality. As the consolidated schools become more numerous, it is to be hoped that attractive, protective sheds will be added.

Summary:

1. Under every division of service and equipment and under every sub-head of the divisions, the consolidated school is displaced, but in two instances, and these two instances are due to single classes. One is the teacher's chair, out-scored by White's Chapel, a one-teacher school; and washing facilities, out-scored by Delafield, a one-room school. In these two items the consolidated school had reached the deadline of the remainder of the county, whereas, it should have been leading here as it does elsewhere.

2. The two or three-teacher school holds its place in all but the two above instances and two more; one, where the two one-room schools outscore with jacketed stoves; and one where Smiths Grove, colored, is ahead with playground apparatus.

3. That the schools hold their positions upon total service and equipment may be seen from (Tables 27-44).

Conclusions:

1. The schools do not pay sufficient attention to ventilation.

2. More use could be made of the schools as community centers.

3. The seating in the county is very good, although not the most modern.

4. The water supply does not receive much attention.

5. Toilets are not treated in the most satisfactory way.

6. A pole for the country's flag is not in many schools.

Recommendations:

1. All schools should use the window board for ventilation in winter.

2. The schools that are not well provided with artificial lights should become so.

3. Single adjustable desks should be provided for each new school.

4. Teachers should be furnished more commodious desks, and more substantial, comfortable chairs.

5. The possibility of throwing two rooms into one, by sliding partitions is recommended for new two-room schools.

6. Water should be tested at the beginning of each school year.

7. All water should be excellent in quality, if used for drinking purposes.

8. Wells and cisterns should be cleaned yearly.

9. Pumps should be put in good condition.

10. Buckets and ropes should be discarded.

11. More washing facilities should be provided in each school and children encouraged to wash hands at intervals.

12. Every school should have two toilets.

13. These toilets should be well secluded and screened.

14. The septic tank outlined and described in bulletins of the State Board of eHealth of Kentucky should be adopted.

15. Toilets should be put in perfect condition at the beginning of the school year and kept in good condition.

16. Every school should be provided with some playground apparatus.

17. Every school should have flagstaff with pulley.

18. Every school should have horse shed and place for parking automobiles.

19. A permanently placed fire extinguisher should be handy to every stove.

## CHAPTER VII.

### TOTALS OF PERMANENT PLANTS.

This chapter completes our study of the Permanent Plant, and Table IV shows the standing of each school with its addends of Site, Building and Services and Equipment in its relation to this perfect score, 1000.

TABLE IV. COMPOSITE TABLES ARRANGING TOTALS OF PERMANENT PLANTS IN SERIAL ORDER—S-1000.

#### CONSOLIDATED SCHOOLS.

Richpond .....	778.5	Smith's Grove .....	653
Woodburn .....	764.5	Boeye .....	692.5

#### ITEMS OF CONSOLIDATED SCHOOLS NOT SCORED.

Auditorium .....
Hallway .....
Stairway .....

#### TWO AND THREE-TEACHER SCHOOLS.

Quarry Union .....	665.5	Richardsville .....	510
Riverside .....	639	Gott .....	505
Plano .....	626	Oakland .....	494
Green Hill .....	617.5	Cedar Grove .....	459
Rocky Springs .....	612.5	Greenwood .....	359
Alvaton .....	571.5	Mortar Branch .....	357
Browning .....	570		



ONE-TEACHER WHITE SCHOOLS.

Mt. Victor .....	641	Rolling Springs .....	411.5
Walnut Grove .....	537	Martinsville .....	404.5
Old Union .....	525.5	Dial .....	404.5
Ellis .....	521.5	Oak Grove .....	404.5
Penn's Chapel .....	518	Jefferson Seminary.....	402
Boiling Springs .....	502.5	Underwood .....	402
Washington .....	496	Beech Grove .....	397
Manning .....	493	Hall's Chapel .....	594.5
Flat Rock .....	491	Lockwood .....	592
Robeson .....	487	Three Forks .....	392
White's Chapel .....	478	Red Pond .....	389.5
Barren River .....	477.5	Fairview .....	379.5
Highland .....	458.5	Hadley .....	374.5
		Rockfield .....	374.5
Clifty .....	452		
Greencastle .....	445	Sand Hill .....	371.5
Sulphur Springs .....	445	Pleasant Hill .....	369.5
Plum Springs .....	439.5	Walnut Hill .....	369
Cedar Valley .....	429.5	Union Grove .....	361.5
Shady Grove .....	427	Gilead .....	359.5
Steven's Chapel.....	427	Mizpah .....	357
Oakwood Mills .....	419.5	Pisgah .....	352.5
Delafield .....	419.5	Collett .....	361.5
Ray's Branch .....	419.5	Polkville .....	349.5
Grider .....	417	Cook Springs .....	344.5
Mt. Pleasant .....	417	Cave Mill .....	340.5
Bay's Fork .....	414	Bridgeport .....	338
Glenmore .....	412	Cherry Chapel .....	309.5

ONE-TEACHER COLORED SCHOOLS.

Smith's Grove .....	449.5	Oakland .....	377
Woodburn .....	430.5	Covington .....	372
Blue Livel .....	403	B. T. Washington.....	346.5
Loving Union .....	396.5	Richpond .....	343
Woodland .....	386.5	Salem .....	335
Stony Point .....	386	Rockfield .....	260
Allen Springs .....	384.5	Delafield .....	257
Jonesville .....	379.5		

THE PERMANENT PLANT.

It has been demonstrated that in the total of Site and all subdivisions save one, the schools take this order: Consoli-

dated, two-teacher and one-teacher. In the one exception, the two-teacher give sway to the one-teacher in accessibility.

Under Building, Location, the schools take the same order in totals, although under Orientation the one-teacher is ahead of the two-teacher. In Gross Structure, the total shows the same sequence in spite of the fact that the two-teacher is superior in Type, Balance and Finish. In Internal Structure the totals are of the same order, but the two-teacher and one-teacher are ahead in size of rooms; in shape, the one-teacher leads.

The totals of Service and Equipment show no exceptions to the rule of the older order, but the one-teacher supplants the two-teacher in ventilation, water supply and playground apparatus.

Teaching Equipment and Efficiency in totals and in details cause no displacement of groups of schools in their rank.

As for the showing which the schools of Warren County make when compared with the standard score on Permanent Plant, one is impressed with the fact that the highest are not so high as they should be, and the lowest are entirely too low. Richpond, the leader of the consolidated, is only a little above three-fourths up to an ideal standard; Quarry Union, the leader of the two-teacher schools, is less than three-fourths; Mt. Victor, the ranking one-teacher white school, has about 65% of an ideal plant; Smiths Grove, colored, has less than 50%.

As for the lowest scores by each group, Boyce reaches about 59%; Mortar Branch, only 36%; Cherry Chapel slightly over 30%; Delafield somewhat over 25%.

We are not satisfied with these scores upon the Permanent Plants of the rural schools of Warren County. If we compare these with the markings that ordinarily obtain elsewhere in ratings of other subjects, we should be justified in expecting a range from at least 95% to not less than 50% or 60%.

This must be said, however, in favor of the consolidated schools. In order to make the schools comparable, they have been measured by the common score card for the one-teacher rural school. The card necessarily does not give ratings to auditorium, hallway and stair cases. There was at the time of the survey no specially designed card for the many-room rural school, and had the card for city schools been used, there would have been an unjust standard on account of the impossibility of having the water, lights and accessibility of a city; and of not counting the advantages of large playgrounds and gardens of the country site. In the absence of a special card it was not deemed best to assume value for extra characteristics, and thus compare a positive 1000 standard with a possible 1100, but a comparison is made of the actual measurable items. That is, the highest consolidated school is 77% up to standard in those

things that are counted in all the schools. It has other points in its favor, and it is probable that there would be a higher score when compared with a consolidated standard. At any rate, we feel that Warren County should put more thought, as well as more money, upon its schools and make the plant a permanent one indeed.

## CHAPTER VIII.

### INTERPRETATION OF THE SCORE ON TEACHING EQUIPMENT.

While the treatment of this Permanent Plant completes the major portions of the purposes of this survey, it was deemed advisable to go still further and investigate the items that come under Teaching Equipment and Efficiency. The card deals with this subject under the headings, Teaching Equipment, Special Activities, Efficiency Plans and Provisions. The two latter are so largely activities that belong to a wide-awake community that it was thought best to leave them for some future special investigations. The former, however, is more allied to the plant itself and should be furnished by the community along with other tangible belongings.

TABLE V. COMPOSITE SCORES ARRANGED IN SERIAL ORDER,  
TEACHING EQUIPMENT AND EFFICIENCY—S-500.

#### CONSOLIDATED SCHOOLS.

Smith's Grove .....	240	Richpond .....	157.5
Woodburn .....	162.5	Boyce .....	25

#### TWO AND THREE-TEACHER SCHOOLS.

Quarry Union .....	77.5	Gott .....	55
Oakland .....	75	Browning .....	47.5
Green Hill .....	75	Mortar Branch .....	40
Riverside .....	65	Cedar Grove .....	40
Rocky Springs .....	65	Plano .....	30
Greenwood .....	65	Alvaton .....	20
Richardsville .....	57.5		

ONE-TEACHER WHITE SCHOOLS.

Sulphur Springs .....	95	Washington .....	15
Oakwood Mills .....	75	Bridgeport .....	10
Greencastle .....	70	Cave Mill .....	10
Delafield .....	62.5	Cedar Valley .....	10
Highland .....	50	Fairview .....	10
Shady Grove .....	40	Manning .....	10
Rolling Springs .....	35	Penn's Chapel .....	10
Dial .....	35	Pisgah .....	10
Hall's Chapel .....	35	Ray's Branch .....	10
Ellis .....	30	Roberson .....	10
Hadley .....	30	Three Forks .....	10
Mt. Pleasant .....	30	Walnut Hill .....	10
Barren River .....	30	White's Chapel .....	5
Bay's Fork .....	30	Red Pond .....	5
Walnut Grove .....	25	Polkville .....	5
Old Union .....	25	Oak Grove .....	5
Mt. Victor .....	25	Martinsville .....	5
Sand Hill .....	25	Jefferson Seminary.....	5
Steven's Chapel .....	20	Grider .....	5
Plum Springs .....	20	Cook Springs .....	5
Beech Grove .....	20	Mizpah .....	5
Boiling Springs .....	15	Gilead .....	5
Clifty .....	15	Flat Rock .....	5
Collett .....	15	Cherry Chapel .....	5
Glenmore .....	15	Rockfield .....	5
Pleasant Hill .....	15	Underwood .....	5
Union Grove .....	15	Lockwood .....	5

COLORED SCHOOLS.

B. T. Washington .....	52.5	Allen Springs .....	5
Jonesville .....	35	Covington .....	5
Loving Union .....	30	Blue Level .....	5
Woodburn .....	15	Woodland .....	5
Salem .....	10	Oakland .....	0
Smith's Grove .....	10	Richpond .....	0
Stony Point .....	10	Rockfield .....	0
Delafield .....	5		



Table 45. A. Text Books Free S-60.

## NONE IN THE COUNTY

### TEACHING EQUIPMENT AND EFFICIENCY

With a possibility of 300 general and 200 special points on Teaching Equipment, we find the Warren County maximum 240, and minimum 0, very low in the scale.

The most cursory glance at the composite table makes one realize that the people do not put enough money into equipment. It is generally supposed that after the plant is established and especially if it be a good one, that the teachers and the children can do the rest; but it is no more fair for the rural teacher to tax herself in getting up extra moneys for extra things than it is the part of the town teacher to do so.

One would naturally suppose that here is where the consolidated school will be especially fortunate in leadership, and by looking at the tables and graphs, there is no disappointment of expectations. (Table 20,21.) Three-fourths of these schools have many more points than any others in the county. The lowest, Boyce, falls somewhat above the lowest of the two-teacher schools, and with the highest of the middle 50% of the one-teacher schools.

The second group of schools loses in individual leadership over one-room schools, which goes to Sulphur Springs, but wins in each quartile range.

We shall next consider the factors of equipment and efficiency.

#### 1. General.

A. Free text books. There are none in the county, and un-

less there should be a state law compelling, there are no prospects of the kind very soon. Table 45.)

PER CENT OF SCHOOLS RECEIVING

	0	5	10
Consolidated .....		50	50
Two-Teacher .....		100	
One-Teacher .....	22	78	

Table 46. Ba. Maps S-10.

B. Maps, globe, charts. (Tables 45, 46, 47.) One-half of the consolidated schools are as well supplied as the good city schools. The other half, all of the two-teacher, and about three-fourths of the one-teacher are fairly and uniformly furnished with wall roller maps of the world, continents, United States, but none of states and county. One colored school, Delafield, has reading charts.

PER CENT OF SCHOOLS RECEIVING

	0	5	10
Consolidated .....	50		50
Two-Teacher .....	100		
One-Teacher .....	100		

Table 47. b. Globes S-10.

C. Three-fourths of the consolidated schools have book cases, about one-half of the two-teacher and one-sixth of the one-teacher have them. (Table 48.)

PER CENT OF SCHOOLS RECEIVING

	0	5
Consolidated .....	50	50
Two-Teacher .....	100	
One-Teacher .....	98.5	1.5

Table 48. c. Charts S-5.

D. Display facilities. Only two schools have them, and they are of the one-teacher type. (Table 49.)

PER CENT OF SCHOOLS RECEIVING

	0	5	10	15	20
Consolidated .....	25				75
Two-Teacher .....	54			15	31
One-Teacher .....	84.2		8.7		7.1

Table 49. C. Bookcases S-20.

E. Library. Of all the teaching equipment, the library is the most important. There is scarcely a school in the county which has not had some kind of a library, many of them very good, but not every library is in good condition. With the changing teachers, books become scattered or dilapidated. Each school should have books of different kinds, literary, historical, scientific, to suit different children and different ages. There should be a large revised dictionary in each room, a set of pupil's encyclopedia, government and state bulletins from United States Bureau of Agriculture, Weather Bureau, Bureau of Labor, Children's Bureau, Geological Surveys, Statistical Abstract of Census; periodicals, such as daily paper, weekly magazine, farm journal, children's papers.

PER CENT OF SCHOOLS RECEIVING

	0	5	10	15	20
Consolidated .....	100				
Two-Teacher .....	100				
One-Teacher .....	97				3

Table 50. D. Display Facilities S-20.

In the value of the library the tables show in their old established order, with one-fourth of the consolidated schools excellent, one good and one fair. All other schools in the county are less than fair in this respect.

F. Music. It is with a sense of rejoicing that one notes the development of this divine art in our county schools. Music is universal in its appeal, and this rural community with singing bees and church concerts offers no exception to its charm. The advent of the musical instrument, be it banjo or jew's harp, denotes a premeditated effort to cultivate this love. Three-fourths of the consolidated schools, Woodburn, Richpond and Smith's Grove, have pianos. About one-third of the two-teacher schools have instruments; Quarry Union a Victrola, Riverside a piano, Rocky Springs and Mortar Branch organs, four one-teacher schools have instruments, Mt. Pleasant an organ, Hall's Chapel a Victrola, Loving Union and Booker T. Washington organs. The last two are colored, which speaks well for their love of music, when we consider the fact that the colored schools are only about one-fifth of the total number of one-teacher schools. (Table 51.)

PER CENT OF SCHOOLS RECEIVING

	20	25	30	35	40	45	50	55	60	65	70	75	80
Consolidated . . . .	25									25	25		25
Two-Teacher . . . .	54.4	15	7.6		23								
One-Teacher . . . .	88	4.5	1.6	1.5	1.5	3							

Table 51. E. Library S-80.

PER CENT OF SCHOOLS RECEIVING

	0	15	20	25	30	35	40
Consolidated .....	25						75
Two-Teacher .....	69	8					23
One-Teacher .....	87	7					6

Table 52. F. Music S-40. Teaching Equipment

G. The pictures (Table 52) on the school rooms of Warren are not very much in evidence, which is more commendable than the use of the tawdry and the inartistic. Nevertheless, our walls need not be bare. Excellent prints of famous paintings may be obtained at little expense from such companies as the Perry Picture Company, the Elson and others. Even the crude attempts at art made by the children have their decorative value, and when properly motivated are satisfactory. The burlap for display purposes previously mentioned, could not only have children's handwork, but could be used as place for showing good pictures from current magazines. The pictures actually found on the school room walls are Perry pictures and likenesses of great men, of whom Lincoln and Booker T. Washington are particular favorites in the colored schools.

I. GENERAL S-300.

PER CENT OF SCHOOLS HAVING THEM

Consolidated .....			75
Two-Teacher- .....		40	
One-Teacher .....	16		

Table 53. G. Pictures and Decorations S-25.

H. Industrial exhibits. (Table 53.) A few schools in the county have received the exhibits of manufactured products processes sent out free by the manufacturers, but no school has kept them.

Table 54. H. Industrial Exhibits S-15.

NONE IN THE COUNTY

I. Weights and measures. (Table 54.) Smith's Grove consolidated is the only school in the county supplied.

II. Special.

The special equipment in our rural schools can be disposed of in very short order. Many teachers are spending their own hard earned salaries to buy these supplies, but such cases cannot be credited to the school itself.



A. Primary.

1. Sand Tables. One school, Smith's Grove, has a good one. No other of any kind in the county. (Table 55.)

PER CENT OF SCHOOLS HAVING THEM

Consolidated .....		25
Two-Teacher .....	0	
One-Teacher .....	0	

Table 55. I. Weights and Measures S-15.

I. GENERAL (Concluded).

2. Richpond has blocks.

B. Household arts. Smith's Grove has a stove and a cupboard, but in no other place was there found any provision whatever for the demands of home economics, or for the warm school lunch. (Table 56.)

PER CENT OF SCHOOLS RECEIVING

	0	20	40
Consolidated .....	75		25
Two-Teacher .....	100		
One-Teacher .....	100		

Table 56. A. Primary S-45.

C. Manual training. (Table 57.) None in the county.

D. Nature study material. (Table 58.) None being used in the school rooms. The teachers probably take the children on field trips, but that line of activity was not being investigated.

PER CENT OF SCHOOLS RECEIVING

	0	25	50
Consolidated .....	75		25
Two-Teacher .....	100		
One-Teacher .....	100		

Table 57. B. Household Arts S.65.

Table 58. C. Manual Training S-40.

NONE IN THE COUNTY

E. Agriculture. (Table 59.) The state law requires the teaching of agriculture, but no way of making it practical was observed.

Table 59. D. Nature Study Material S-25.

NONE IN THE COUNTY



Summary :

1. The consolidated schools are far ahead on equipment. The one-teacher schools are almost hopelessly behind.

2. No school approaches the standard.

Conclusions:

1. Equipment has been a negligible consideration for many years.

2. The first two groups of schools are the only ones that seem to be able to meet the growing demands in any degree.

3. The new schools with good Permanent Plants seem to have exhausted their resources before reaching Teaching Equipment.

Table 60. E. Agriculture S-25.

NONE IN THE COUNTY

Recommendations :

1. The schools are not well enough supplied with pictures. Very attractive prints can be supplied by Perry Picture Co., at small cost; and if no money is available, appropriate illustrations from current magazines may be put up weekly.

2. Every school could have a yard square of burlap on the wall, upon which could be displayed from time to time the children's work, notices and pictures.

3. The schools should be on the mailing list for government and state bulletins, and should keep them conveniently placed for the children.

4. Every school should have a sand table. This is important for upper grade work in geography, history and nature, as well as for primary work.

5. The deficiency in primary material is deplorable. Teachers too often supply from their small salaries. Handwork is important.

6. No manual arts whatsoever, yet boys at school could easily make window boards, window boxes, etc.; therefore, there is need for work rooms.

8. Agriculture without material for it, equals "bricks without straw." There should be material, such as Babcock tester with bottles, pipettes, seed testers for corn and other seeds, tubing and fixtures for capillary experiments, litmus paper for soil tests.

9. Every school should have maps not only of hemispheres and continents, but of sections of the United States, of state and of county as well.

10. Schools should have one large globe and a number of smaller globes for individual study.

11. A good substantial book case with glass doors is a necessity.

12. The books throughout the schools of the county should be better protected. Every school has had its opportunity to collect a good library. The books have been neglected and scattered.

13. Revised dictionaries and modern students' encyclopedias should be in all schools.

14. If the piano or organ is beyond the financial ability of any school, there is the Victrola which any community can afford. It would mean a great deal to our art life.

## CHAPTER IX.

### A STUDY OF TOTALS.

As we review the school field in Warren County we are encouraged to find that the good work of school improvement has begun, but we are disappointed to see that it has not kept pace with the automobiles, silos and other modern conveniences of the farm.

We find that Table VI, grand totals, gives the following scores:

#### PERMANENT PLANT AND EQUIPMENT.

TABLE VI. COMPOSITE SCORES ARRANGED IN SERIAL ORDER,  
GRAND TOTALS—S-1500.

##### CONSOLIDATED SCHOOLS.

Richpond .....	936	Smith's Grove .....	903
Woodburn .....	927	Boyce .....	617.5

##### TWO AND THREE-TEACHER SCHOOLS.

Quarry Union .....	743	Oakland .....	591.5
Riverside .....	704	Richardsville .....	567.5
Green Hill .....	692.5	Gott .....	560
Rocky Springs .....	677.5	Cedar Grove .....	499
Plano .....	656	Greenwood .....	424
Browning .....	617.5	Mortar Branch .....	397
Alvation .....	617.5		

ONE-TEACHER SCHOOLS.

Mt. Victor .....	666	Ray's Branch .....	429.5
Walnut Grove .....	562	Glenmore .....	427
Ellis .....	551.5	Gridler .....	422
Old Union .....	550.5	Beech Grove .....	417.5
Sulphur Springs .....	540	Martinsville .....	409.5
Penn's Chapel .....	528	Oak Grove .....	409.5
Boilin's Springs .....	527.5	Jefferson Seminary .....	407
Greencastle .....	515	Hadley .....	404.5
Washington .....	511	Three Forks .....	402
Highland .....	508.5	Underwood .....	402
Barren River .....	507.5	Sand Hill .....	396.5
Manning .....	503	Red Pond .....	394.5
Robinson .....	497	Lockwood .....	392
Flat Rock .....	496	Fairview .....	389.5
Oakwood Mills .....	494.5	Pleasant Hill .....	384.5
Delafield .....	484.5	Rockfield .....	379.5
White's Chapel .....	483	Walnut Hill .....	379
Shady Grove .....	467	Union Grove .....	376.5
Clifty .....	467	Collett .....	376.5
Plum Springs .....	459.5	Gilead .....	364.5
Steven's Chapel .....	447	Pisgah .....	362.5
Mt. Pleasant .....	447	Mizpah .....	362
Rolling Springs .....	446.5	Polkville .....	354.5
Bay's Fork .....	444	Cave Mill .....	350.5
Dial .....	439.5	Cook Springs .....	349.5
Cedar Valley .....	439.5	Bridgeport .....	349
Hall's Chapel .....	429.5	Cherry Chapel .....	314.5

COLORED SCHOOLS.

Smith's Grove .....	459	Blue Level .....	388
Woodburn .....	455.5	Oakland .....	377
Loving Union .....	426.5	Covington .....	371
Jonesville .....	414.5	Salem .....	345
B. T. Washington .....	399	Richpond .....	345
Stony Point .....	396	Delafield .....	262
Woodland .....	391.5	Rockfield .....	260
Allen Springs .....	389.5		

If any further illustrations be needed to show the relative

positions of the group of schools, the following tables may furnish it:

TABLE IV. PERMANENT PLANT, S-1000.

	Highest.	Middle 50%	Lowest.
Consolidated .....	778.5	764.5—653	592.5
Two-Teacher .....	665.6	617.5—494	357
One-teacher White .....	641	452 —374.5	309.5
Colored .....	449.5	386.5—346.5	257

TABLE V. TEACHING EQUIPMENT AND EFFICIENCY, S-500.

	Highest.	Middle 50%	Lowest.
Consolidated .....	240	162.5—157.5	25
Two-Teacher .....	77.5	65 — 40	20
One-Teacher White .....	95	30 — 5	0
Colored .....	52.5	10 — 5	0

TABLE VI. GRAND TOTALS, S-500.

	Highest.	Middle 50%	Lowest.
Consolidated .....	936	927 —903 .	617.5
Two-Teacher .....	743	677.5—560	397
One-Teacher White .....	666	496 —389.5	314.5
Colored .....	459	399 —371 .	260

We note the steady drop in the series in every place save one, and that is in Table V, where a single one-teacher school out-scores in teaching equipment and efficiency. The first quartile range of these schools, however, puts the second group ahead with 77.5-75 with a median of 75, as opposed to 95-30 with a median of 35 .

It was noted in a previous chapter that the schools of the county when compared with the totals of Permanent Plant do not get so high a per cent as they should. Let us see if they are improved in other tables of totals.

TABLE IV. PERMANENT PLANT, S-1000.

SCHOOLS IN PER CENT OF THE STANDARD.

	Highest.	Lowest
Consolidated .....	77.8%	59%
Two-Teacher .....	66.5%	35%
One-Teacher White .....	64 %	30%
Colored .....	50 %	26%



TABLE V. TEACHING EQUIPMENT AND EFFICIENCY.

	Highest.	Lowest
Consolidated .....	48 %	5%
Two-Teacher .....	15 %	4%
One-Teacher .....	19 %	0%
Colored .....	10.5%	0%

TABLE VI. GRAND TOTALS, S-1500.

	Highest.	Lowest.
Consolidated .....	62.4%	41.6%
Two-Teacher .....	43.8%	26.5%
One-Teacher White .....	44.4%	20.9%
Colored .....	36 %	17.3%

A comparison of V and VI reveals a lower per cent in the latter. This is to say, the Equipment and Efficiency scores are not so good as those on Permanent Plant and result in lowering the grand totals.

It has been pointed out in Chapter IV that it is because of some of the factors coming under Site that colored schools are reduced to lower rank under Permanent Plant. In Building and Service they compare favorably with one-room white schools. (See Chapter V, VI.)

As little attention as we are paying to our Permanent Plants, we are paying still less to Teaching Equipment and Efficiency. When we consider the fact that the consolidated school is the only one that receives anything in the neighborhood of 50% of the standard and that all others fall below 20% we see another illustration of its superiority.

What more need be said to show that the first group of schools has everything in its favor of being ahead of other schools in all the things that go into site, building and equipment? That they are more nearly up to standard and that they are practicable?

As to other consideration of school keeping, original cost, cost of maintenance, value of instruction, influence upon the community, special investigation would have to be made in order to answer the many questions arising therefrom.

Upon the first thought one would realize that the total original cost and maintenance of the consolidated would be greater than that of other schools. It would probably not be greater per child, per school hour (see Schwartz Consolidated Rural Schools in Ohio), but even were it so, the money cost would be more than offset by the enriched instruction from specially trained teachers and by the tie of interest that would bind larger districts together. The rural community has not been noted

for a large class consciousness. The independence of the life, that can almost be sustained in complete family isolation, has tended to make the farmer highly individualistic. He needs a common interest—not so much with his neighbor across the way, as with his neighbor three miles beyond the big woods. He needs to co-operate for the common good; he needs to give and to receive; he needs the large vision. A good school can easily become the centre of interest, of hope, and of inspiration.

#### A LAST WORD.

It is not urged that the school plant is the one thing that will solve our problem, but the contention is made that it is a large factor in the solution. The attractive plant brings the good teacher, and the good teacher holds the girls and boys. This is more than an economic problem, as distressing as that may be; it strikes deeper than that. We not only need daily sustenance of the body, but we as a nation need the stabilizing influence of an industry inherently tied to its own homestead.

How can we be politically steady without a powerful agricultural background? How can agriculture be powerful unless it draw upon the reserve forces of its own young life? How can this young life flourish without springs from which to quench its spiritual thirst?

#### IMPROVEMENTS MADE IN SCHOOLS SINCE THE SCORES WERE OBTAINED.

1. Woodburn by adding rooms for special activities and equipment to meet the requirements of the Smith-Hughes bill has without doubt become the leading school plant in the county.
2. Richpond is improving its auditorium.
3. Mt. Victor has put in a new ceiling and has added a room.
4. Steven's Chapel has been rebuilt in modern style.
5. Hadley has been repainted throughout and has a new hip-roof porch.
6. Cook Springs has put up a new two-room building.
7. Smith's Grove, colored, has been repainted throughout.
8. Walnut Hill has consolidated with Woodburn.
9. Rockfield, Pleasant Hill, Union Grove have consolidated and erected a modern building at Rockfield.
10. A new building erected in new district—New Stallard Springs.

11. Bay's Fork has erected a modern two-room building.

12. Collett, Red Pond, Grider, Oakland and Mizpah have consolidated and are waiting upon the builders for the erection of their new school home. These consolidations eliminate more than half of the schools in the lowest quarta of the one-teacher white schools. There are indications that the next few months will be even more fruitful in good results.

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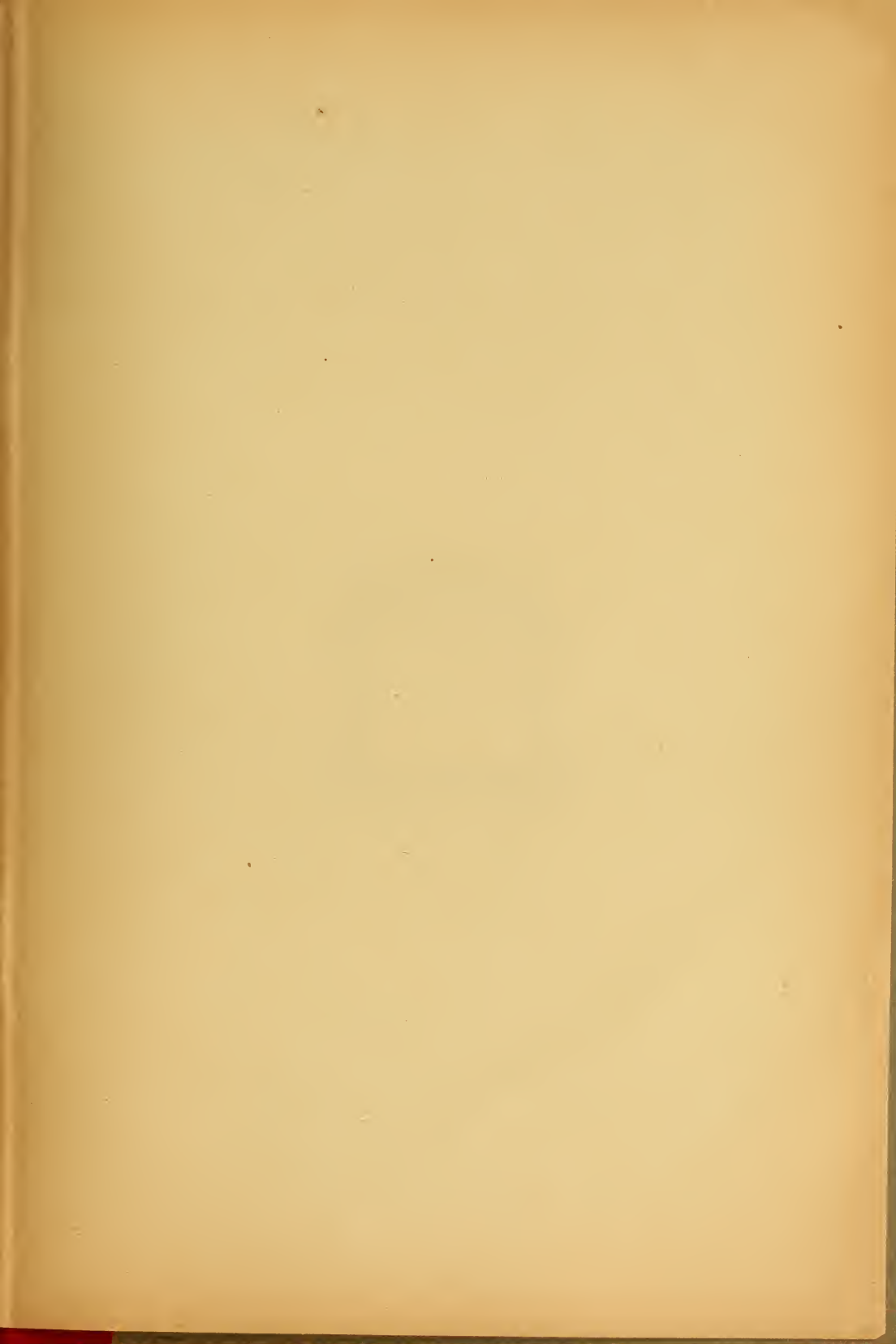
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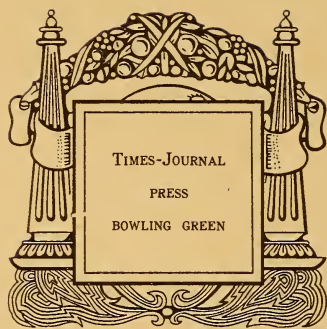
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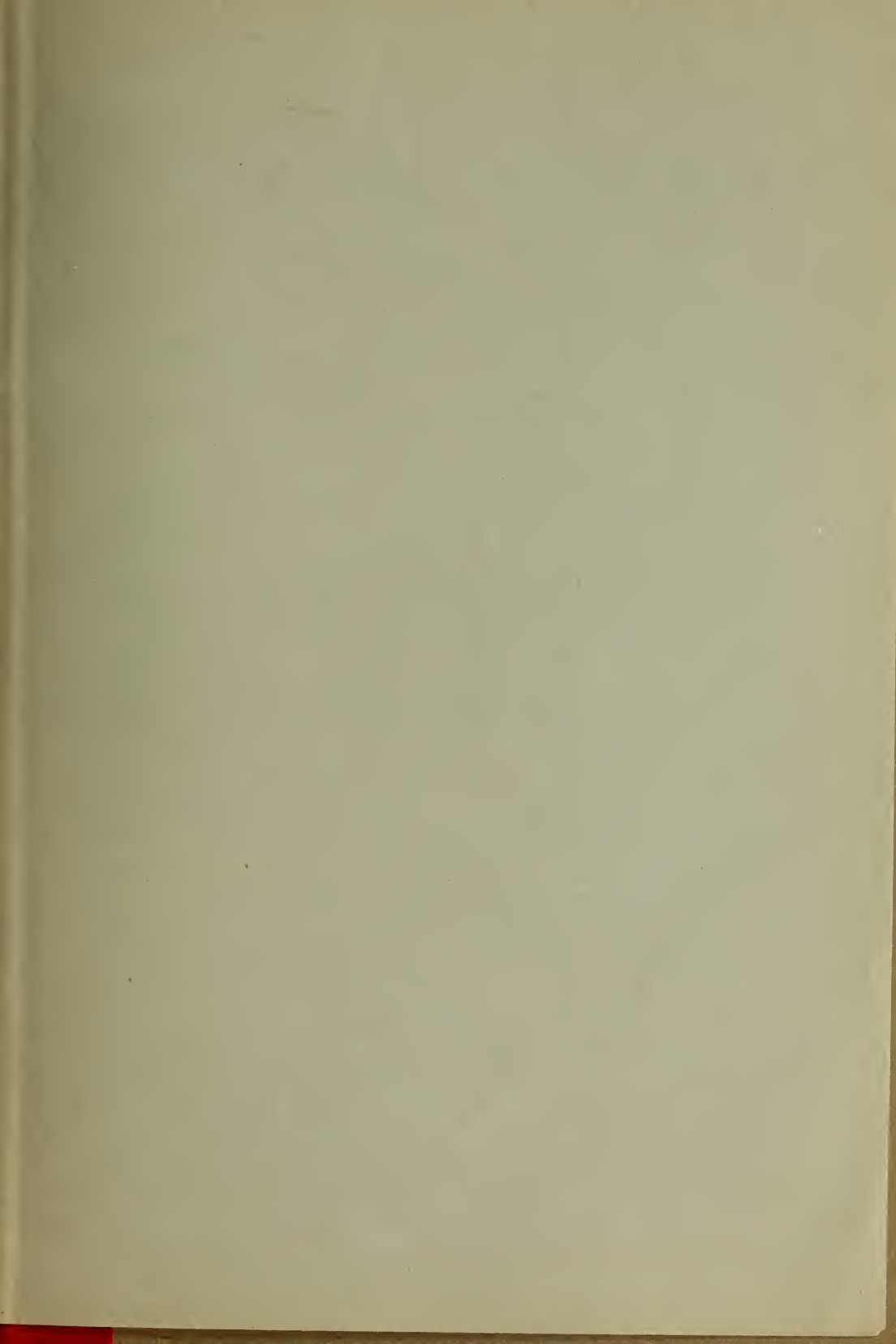
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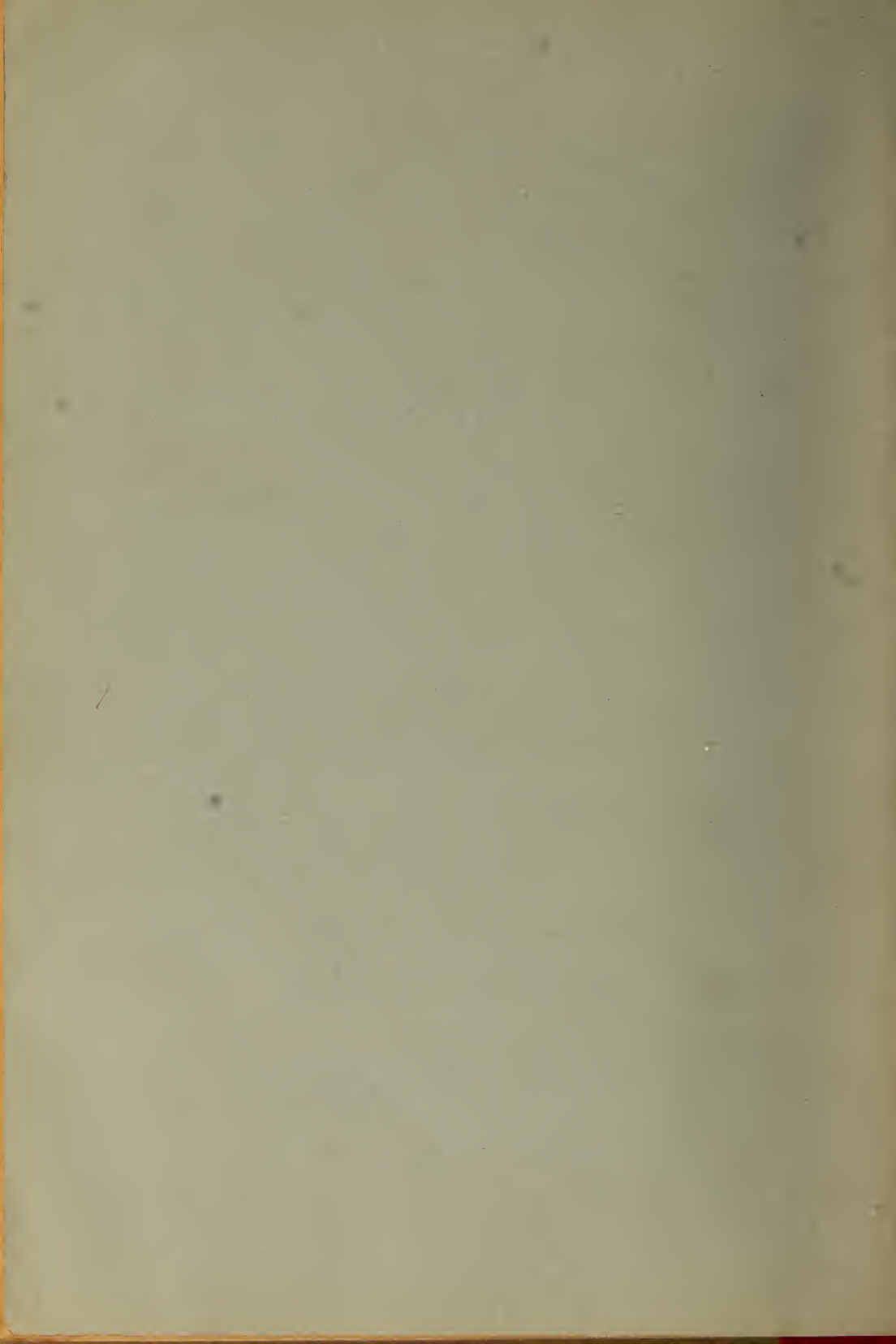
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