existing law one of the eligibility requisites of a county superintendent is that he hold at the time of his election a first or second grade superintendent's license. This certificate is not such an instrument.

HEALTH, STATE BOARD OF: Schoolhouses, quantity of fresh air required in ventilation.

June 4, 1937.

Hon. Verne K. Harvey, M. D.,
Director Indiana State Board of Health,
State House Annex,
Indianapolis, Indiana.

Dear Sir:

I have before me your request for an official opinion, which request is as follows:

> "Section 28-2901, Burns Indiana Statutes, Annotated, 1933, reads in part as follows:
>
> " 'Rules Regulating the Location and Construction.—After the going into effect of this Act, all schoolhouses which shall be constructed or remodeled shall be constructed in accordance and conform to the following sanitary principles, to wit: * * * (f) Heating and ventilation. All schoolhouses hereafter constructed or remodeled, shall be supplied with heating and ventilating systems. Fresh air shall be taken from outside the building and properly diffused without drafts, through each schoolroom during school session. * * *'
>
> "A question has arisen regarding the interpretation of the following sentence, to wit:
>
> " 'Fresh air shall be taken from outside the building and properly diffused without drafts, through each schoolroom during school session.'
>
> "Does this mean that all fresh air shall be taken from the outside or is it possible that the emphasis in the rule is placed on 'fresh air' rather than emphasis being placed on the location from which that air comes? What is your interpretation of this sentence when studied in the light of first, the exact language of the statute, and second, in the light of the intent of the legislature in passing this law? Immediate consideration of this question will be appreciated."

The subject of heating and ventilating of school buildings was first enacted into law by the Indiana General Assembly in 1911. Chapter 72 of the Acts of the Indiana General Assembly, 1911, provides in section (f) thereof as follows:

> "(f) Heating and ventilation. Ventilating heating stoves, furnaces, and heaters of all kinds, shall be capable of maintaining a temperature of 70 degrees Fahrenheit in zero weather and of maintaining a relative humidity of at least 40 per cent; and said heaters of all kinds shall take air from outside the building and after heating, introduce it into the schoolroom at a point not less than five nor more than seven feet from the floor, and at a minimum rate of thirty (30) cubic feet per minute for each pupil regardless of outside atmospheric conditions: *Provided,* That when direct-indirect steam heating is adopted, this provision as to height of entrance of hot air shall not apply. Halls, office rooms, laboratories and manual training rooms, may have direct steam radiators, but direct steam heating is forbidden for study schoolrooms, and direct-indirect steam heating is permitted. All schoolrooms shall be provided with ventilating ducts of ample size to withdraw the air at least four times every hour, and said ducts and their openings shall be on the same side of the room with the hot air ducts."

Section (b) of this Act further provided that:

> "Each pupil shall be provided with not less than 225 cubic feet of space. * * *"

It will be noted, therefore, in the beginning that the requirement of section (f) to the effect that air shall be taken from outside the building and after heating introduced into the schoolroom at a minimum rate of thirty cubic feet per minute per pupil, if followed literally, would be wholly inconsistent with the following provision that:

> "All schoolrooms shall be provided with ventilating ducts of ample size to withdraw the air at least four times every hour. * * *"

This inconsistency was attempted to be corrected by section (f) of chapter 204, Acts of the Indiana General Assembly, 1913, which provides that:

> "Fresh air shall be taken from outside the building and properly diffused without drafts, through each schoolroom during school session. Each schoolroom shall be supplied with foul air flues of ample size to withdraw the foul air therefrom at a minimum rate of eighteen hundred cubic feet per hour for each two hundred and twenty-five (225) cubic feet of said schoolroom space, regardless of outside atmospheric conditions; and heaters of all kinds shall be capable of maintaining a temperature of 70 degrees Fahrenheit in all schoolrooms, halls, office rooms, laboratories and manual training rooms, in all kinds of weather, and maintaining in each schoolroom a relative humidity of not less than 40 per cent: *Provided,* That when artificial ventilation, by use of fan or blower, is adopted, the provision as to entrance of fresh air shall be from outside of the building."

It will be noted that instead of withdrawing the foul air four times per hour, this was changed to eighteen hundred cubic feet per hour, which would be eight changes. In other words, inducting the air into the room at thirty cubic feet per minute would bring in eighteen hundred cubic feet of fresh air per hour. On this much intake it would have been impractical to change the air four times per hour, as provided in the 1911 Act. This discrepancy was doubtless the reason for the change made in this section in 1913.

It is to be noted that the 1913 Act did not make any provision as to the induction of fresh air at the rate of thirty cubic feet per minute per pupil. This particular section, as amended in 1913, continues to be the provision as to heating and ventilating as the same appears in the amendments of 1923, the same being section 28-2901, Burns Indiana Statutes, 1933 revision.

It is to be noted further that the 1913 amendment added the following provision:

> "*Provided,* That when artificial ventilation, by use of fan or blower, is adopted, the provision as to entrance of fresh air shall be from outside of the building."

It is apparent from the above quoted Acts that the legislature was not fully advised of all the problems confronting heating and ventilating engineers and public health officials in the construction of public school buildings. It was the intention of the legislature, however, to provide each schoolhouse with a heating and ventilating system. The quantity of fresh air to be taken from outside the building and properly diffused without drafts, through each schoolroom during school sessions, is not specified in the present law. The original provision specifying fresh air to be taken from outside the building and heated before introducing the same into the schoolroom at a minimum rate of thirty cubic feet per child per minute is no longer a requirement. The present Act does provide, however, that foul air flues shall be provided of ample size to withdraw the foul air at a minimum rate of eighteen hundred cubic feet per hour for each two hundred twenty-five cubic feet of space.

I think the provision as to artificial ventilation contemplated a system of heating and ventilating, aided by fans and blowers which would produce circulation of air in the schoolroom by purely mechanical means, without the aid of open windows and doors. The manner in which these systems are to be installed and used is not specified by legislative enactment and is, therefore, in my opinion, left entirely to the judgment and wisdom of health officials and heating and ventilating engineers. The only requirement is that in every such system there shall be a provision as to entrance of fresh air in some amount from outside the building. Here again the legislature does not attempt to specify the quantity which shall be induced. This is again left to the judgment of the engineers and health officials, with only such limitations as specifically require facilities for the withdrawals of foul air at a minimum rate of eighteen hundred cubic feet per hour per pupil.

It is my opinion, therefore, that the law does not specify nor require that all air used in heating must be outside air.

It is my further opinion that any heating and ventilating system which makes provision for an outside air intake sufficient to permit, when the circumstances require, an intake to replace the withdrawals to the amount of eighteen hundred cubic feet per hour per pupil, is suficient to meet the requirements of the statute.