large, and the poor women don't know how to manage. The ladies are going to teach them to sew and cook, and we need more help in the Sunday-school. If you could give, say, two hours each week—"

"Dear me, I'm not in the least philanthropic," replied my hostess, sinking back in her chair and hugging her dog to her breast. "Oh, I'll give money. I'll give—five dollars, but my nerves cannot endure poor people. Their clothes smell, and they eat onions, and they are so ignorant. They might be different if they were so minded, it seems to me. Really, it makes me ill to smell bad odors and hear complainings. I'll give ten dollars if you think five not enough. But I cannot have anything to do with that middle village set, really."

Words crowded to my lips. I wanted to protest that they were American citizens, and, if poor and ignorant, still human and brethren; but instinct caused me to forbear. Phebe was in hiding in the wide hall, and scampered out to bid me good-by. I kissed her flower-like cheek. "Do it again," she said softly, with the frankness of five years. "I like to be liked. Mamma says it's foolish, but I like it." Of course I "did it again," and as I went down the marble steps it came upon me that I had just left one of the very poorest persons in Griggsville.

## Concerning Fogs and Tornadoes

By Charles L. Hogeboom, M.D.

Why are fogs increasing from year to year along our Atlantic coast? It is generally known that they are caused by the cooling of humid air below that point at which all the moisture can be held in an invisible state at any given temperature. The warmer the air, the more vapor it can hold, other conditions being the same. The laws of condensation and vaporization are constant under the same conditions. If condensation increases, it is because the conditions have changed. Now, the only great change of conditions in our country, as far as may be rationally surmised, has been a change in the earth's surface, a change which consists in a diminution of forest area, and this diminution has been enormous. Tall trees, especially those with pointed tops, like the pines, are efficient electrical conductors, serving to lower the electrical potential of the clouds. The action may be silent, as when the air is moist and the difference of electrical quantity is not great, or it may be violent, so that lightning is often observed in forests, but not nearly so often where the forest is extensive. It is the isolated tree or group of trees which is oftenest the objective point of the thunderbolt. Clouds which have passed over comparatively treeless regions are the ones to exhibit violent electrical phenomena when they come near the earth. This explains why tornadoes have increased so much in number and violence, and widened their scene of action, during the deforestation which our country has suffered. Abercrombie, in "Weather," cites a case in the French department of Loiret. There are two forest areas of from four to six miles in diameter. On the borders of one of these forests there were ten hail-storms in the space of thirty years, while in an equal area to the west, where there is no forest, there were about forty; and a like proportion was maintained with regard to the other forest and the surrounding deforested country.

The southeast quadrant of a cyclone is the favorite birthplace of the tornado, and this is an area of warm, moist air. The winds which supply the ascending currents of air in the vast elliptical area of cyclonic movement, which is generally from southwest to northeast, or from west to east, come from the Atlantic—that is, on the southeastern side of the cyclone—from the east, southeast, and south, and are laden with warm moisture. Hence, as cyclones increase fogs will increase, as well as tornadoes. But what do ascending currents of air within the cyclone area imply—increase or decrease of atmospheric pressure? The barometer tells us decrease of pressure. But is the rain area within a cyclone really a depression, as it is commonly called? Is it not, rather, an elevation of the atmosphere, causing a reduction of the pressure of the superincumbent air, and accompanied by a fall of the barometer?

The greater or less irregularity of storm movements being caused, to a great extent, by differences in the earth's surface, it follows that when those differences are made to vary by the intervention of man, as when he removes vast areas of forest cover, the storm movements are also made to vary. This explains the difficulty which has lately been experienced by the most expert forecasters. It is not from want of knowledge of the principles of weather science, or the inadequacy of the system of forecasting, which has been for many years in use, that predictions are frequently unverified. It is because of the increasing modification of conditions resulting from extensive deforestation. If removal of the protecting cover of forest, which also serves to equalize the electrical quantities of the earth and clouds, is not the cause of our change of climate, what is? Is it not sufficient? Has Great Britain the same climate that she had not many years ago, before forest devastation in Canada had denuded the surface of the province and given increased violence to the storms which cross the Atlantic? The shores of Europe have, during the past season, shown the effects of the improvident work. What effects will follow the deforestation of the valley of the Amazon—for this is undoubtedly one of the objective points of the lumber kings—when the moist earth of the river-bottoms is exposed to the burning rays of an almost vertical sun? Without undertaking to foretell what effect it would have upon storm movements, it needs but little foresight to predict that an amount of malarial poison would be generated sufficient to render the climate the most deadly ever known. Man cannot with impunity desecrate the earth and destroy its protecting cover beyond that which is necessary for a rational development, for if he does he will defeat the purposes which he should hope to see fulfilled. He must obey the laws of nature which have been established for his benefit, or suffer the penalties of disobedience.

The tornado is undoubtedly an electric storm, but is it of electric origin? May the electricity which accompanies it be generated by the force of wind-currents, or is the wind in the tornado produced by electrical action? It is probable that electricity is the most important factor, and that the tornado-cloud, formed in an atmosphere saturated with moisture, discharges its electricity in an unusual manner, in spiral currents. The theory so generally accepted, that cross-currents of wind originate the tornado, is not quite satisfactory, although whirlwinds produced by fires might be regarded as proof that an upward gyrating movement can be generated by air rushing in to supply the ascending current. The difficulty with the cross-current theory is that, according to many accounts, the first appearance of a tornado is often within an area of calm, where it is difficult to conceive there are cross-currents of wind. But it is so probable that the primal force in the formation of a tornado has a downward direction that the electrical factor would appear to be the most important. Tornadoes, however, have different forms, and perhaps different modes of formation, one invariable condition being a twisting or spiral movement. The principal difference between a tornado-cloud and a thunder-cloud is probably owing to variations of internal and external conditions, the tornado-cloud being at a lower elevation and where the air is exceedingly moist, while the thunder-cloud is generally higher and where the air is not so excessively humid. In a thunder-storm the upper clouds often discharge their electricity to those below or about them, which have less potential, and these, again, discharge their electricity to the earth. There is often a pouring rain from a thunder-cloud, and one might say that the humidity could not be greater, but the air itself is not as humid. The greatest manifestations of lightning appear after the humidity is lessened, when the air, especially among the higher clouds, offers enough resistance to the electric discharge to render it explosive. But the phenomena of thunder-storms vary, as well as those of tornadoes. The "ball of fire" which is often seen in thunder-storms, and which plays so many

curious freaks, is far different from the straight, almost instantaneous bolt, but its formation has not been fully explained. A close relation between tornado-clouds and thunder-clouds is probable, the tornado being a departure from the ordinary manifestations which accompany atmospheric electricity; but there is probably often a mixture of the two. Hail-storms, as we know, are also thunder-storms, and hail is formed by tornadic action, which carries the rain-drops up into freezing elevations and then discharges them outside of the vortex, when they fall to the earth, or may be caught and taken up again by a succeeding tornadic whirl, and coated with a layer of ice or snow; and this operation may be repeated until the hailstone consists of several layers of the icy material and attains a considerable size.

But what practical conclusions ought to follow a consideration of the effects of deforestation? Ought timber-cutting to be allowed to proceed much further? Ought not action to be taken at once to limit it to the lowest possible degree, while other structural material is substituted? In relation to the Adirondack forests (what there is left of them), is this going to be done by granting privileges to the lumbermen to cut timber for a term of years on land purchased from them? All of us who remember the "Adirondack Forest Investigation" of a few years ago know very well what such bargains imply. The great area that is already devastated, and now of no value to the lumbermen, might well be owned by the State and allowed to grow up again into brush and small trees for the partial protection of the watershed, but it ought to be purchased at a price less than the lumbermen paid for it, for many of them have already reaped a harvest from it far greater than they deserve.

## A New Romancer

Within the last decade or so there has grown up in England a distinctly new school of writers of historical romance. Despite all that has been said of the triumphs of realism, and *pace* Mr. Howells, these new writers have had immense vogue, and are gaining in popular esteem. Mr. Stevenson may be called either the founder or the forerunner of the school; the influence of Daudet and De Maupassant on the style of the best of the writers is easily traced; and the school has been productive both of finished and polished short tales and of full-fledged novels. Mr. Stevenson, Mr. Conan Doyle, Mr. Quiller-Couch, and Mr. Stanley J. Weyman may be named as the best exponents of the school—Mr. Haggard and Mr. Kipling we should be inclined to exclude, for very widely differing reasons. The publication the other day of Mr. Weyman's "A Gentleman of France," almost simultaneously with Mr. Quiller-Couch's "A Delectable Duchy," has called renewed attention to this group of writers. Both books have received notice in The Outlook already, and they are having a very wide reading. A few words about the personality and literary history of Mr. Weyman may be of interest.

Mr. Stanley J. Weyman is thirty-eight years old. He was educated at Shrewsbury and Christ Church, Oxford, taking his degree in 1877. He was called to the bar in 1881, and practiced until 1891 in the Inner Temple. His literary work began with short stories, the first of which was printed in the "Cornhill Magazine" in 1883. To this periodical and to the "English Illustrated" he contributed many tales, quite different from his recent work, and rather of the Anthony Trollope type—very modern, very quiet, very uneventful. In 1885, at the suggestion of Mr. James Payn, he wrote a long novel in the same vein. It was a complete failure, was declined by several publishers, and was finally destroyed by the author. But in the making the writer learned a great deal, and particularly the value of incident and plot, and the danger of any divergence from the story. The main idea of this book was used in Mr. Weyman's "The New Rector," published in 1891, which met with fair success.

It was in 1887 that the author, recognizing the fact that the evident taste for novels of incident was being but poorly supplied, and that mainly with the blood-and-thunder, crime-and-revenge sort of books, determined that the historical story might be revived with some success if the characters were treated, as far as possible, "modernly," and all the old properties, "alackadays" and "Gadzooks" were discarded. After a trial story, he wrote "The House of the Wolf" on this method, his first inspiration coming from a perusal of Baird's "Rise of the Huguenots." This was published as a serial in the "English Illustrated Magazine," and (after being declined, it is said, as a book by several publishers) was brought out by the Longmans. Its success was immediate; the critics as well as the public were pleased; the novel has been translated into French, and has appeared in the Tauchnitz Library and in several English and American editions.

The author then wrote "Francis Cludde," a story of the days of Bloody Mary and Queen Elizabeth, with foreign scenes; it was published by the "Leisure Hour," and then as a book by Cassell & Co. in the International Library in 1891. Its early chapters are notably good, and, with "A Gentleman of France" and "The House of the Wolf," it makes up the bulk of Mr. Weyman's best work. The novelist spent the whole of a year on "A Gentleman of France," much of the story being derived from the well-known eighteenth-century translation of an epitome of "Sully's Memoirs." Even a good deal of the style he has derived from this book. It was part of his plan to make the "Gentleman" the central and dominating figure; and for himself he prefers the part dealing with the hero's mother. Most readers will think the two things not quite consistent, and will dissent from the preference named. The novel is an admirable example of the fact that a book may be romantic without being silly, stirring without being sensational, and popular without being bereft of high literary quality. Mr. Weyman proposes to stick for the present to the historical; he thinks that this vein of writing has a bad name only because people have filled such books with lay figures, archæological padding, and archaisms, and have discarded flesh and blood. He considers the present school (for instance, "The Master of Ballantrae," "The Silver Spur," and "Micah Clarke") a reaction from this, and in particular he is a most ardent admirer of Stevenson. He has just completed two serials for periodical publication, "Under the Red Robe" and "My Lady Rotha."

## What is a Sermon?

By the Rev. Charles M. Sheldon

Webster says: "A sermon is a discourse delivered in public, usually by a clergyman, for the purpose of religious instruction, and grounded on some text or passage of Scripture." This is a pretty good definition as far as it goes, but we venture to say that Mr. Webster would have improved on this definition if he had ever tried to preach one hundred different discourses every year.

It is a little unfair also, perhaps, to let the pulpit try to answer the question, "What is a Sermon?" The pews might answer it more truthfully, because they are constantly hearing sermons and the preacher is not. But the pulpit ought to be able to say something on this subject.

We shall perhaps best arrive at certain conclusions good-naturedly by noting briefly the following:

1. Aim of the Sermon?

The broad aim of the sermon is man-building. It is not so much instruction as construction. It is not only the giving of right definitions of life—it is the building up of life itself in the individual. The preacher looks out every Sunday on a large variety of the human. There face him indifference, stupidity, intellectual pride (which could preach better sermons any day without half trying), money-making ambition, doubt, unrest, trouble, selfishness of all sorts, struggles for better things, youth, old age, manhood, womanhood, rich, poor, college-bred and uneducated, all sorts of family experiences, sin and virtue, ripe Christian