

lamp-post or a tree as long as we look at it in a certain spirit. It does not in the least matter whether we talk through a telephone or through a hole in the wall so long as we talk sense. But we must not ask the lamp-post in what spirit it ought to be regarded. He goes on:

"Science must not impose any philosophy, any more than the telephone must tell us what to say. . . . If we are rushing to get married, it may be thrilling to rush in a motor-car; but we do not ask the motor-car whom we shall marry. Generally speaking, we hardly even ask the chauffeur. . . . Science is a splendid thing, if you tell it where to go to.

"On this principle a reasonable man will be quite as strongly opposed to Ruskin and the antiquaries and esthetes as he is to Mr. Carnegie and the mere idolatry of a civilization of iron and steel. A railway is not a disgusting thing, any more than a roadway or a waterway; it is the railway-director who is disgusting. On the other hand, an old building as such is neither ugly nor beautiful; but the old gentlemen who potter all over it are almost always ugly. Whenever a man puts on spectacles to see a statue, he is

ing and barren, like the east wind, blows in at every aperture. Dust blows into the works of the world, an arid and choking dust; the dust of death."

AN AEROPLANE LABORATORY

A LABORATORY apparatus for testing aeroplane models in much the same fashion as model ships are now tested in experimental tanks has been installed in the Northampton Institute, England, and is described in *Engineering* (London, December 10) by its inventors, Messrs. C. E. Labard and R. O. Boswall. The illustrations show a model aeroplane, mounted on a carriage, and supported by four wheels resting on a double gantry or track. We read:

"The aeroplane model can be drawn along at an increasing velocity by means of a horizontal cord attached to the model at one end and passing over a large drum or pulley at the other, which, by its rotation under the influence of falling weights, hauls the model along. The pulley, with the falling weights and additional apparatus, by means of which the time and velocity of flight may be obtained, are shown in Fig. 2. The track is about 60 feet long, . . . it is accurately leveled and in true alinement, and constructed at a height of four feet from the ground. With this length of track it is possible to obtain in a few moments a velocity of 30 miles per hour, which allows a short flight of the carriage forward free from the rails, and enough space for a reduction of the velocity to zero, without undue shock to the model, by the time the end of the track is reached.

"In order to prevent the model rising too high after it has once left the track, two long planes, or guard-rails, are fixed up parallel to the track and six inches above it; and to prevent lateral displacement or wobbling on the track a central guide consisting of two thin strips of wood faced with sheet tin on both sides and placed with their beveled edges in the direction of motion, are secured to the fore and aft cross-pieces of the carriage, running between guides placed centrally with and about half-way up the gantry, the position fixed allowing sufficient clearance for the plane. These vertical pieces are stayed to the carriage and to each other by a strong pike line to insure that they

keep central. The matter of guiding is of much importance, and the method adopted is being improved upon, whereby the guiding will be effected from the sides of the track. With the improved arrangement the front cross-bar will be done away with, as this bar possibly breaks up the natural flow of air, and errors may arise, especially in the case of small angles.

"The carriage, or runner, on which the plane is mounted, is built up of thin wood laths, the side-pieces vertical and the cross-pieces horizontal, to offer as little obstruction to the flow of air as possible, and all edges are beveled for a similar reason. . . . The plane, which may have any width up to three feet four inches, can be adjusted to any angle, shifted backward or forward in the carriage, or adjusted vertically with respect to the horizontal plane containing the axes of the four wheels. . . . The plane is secured to the carriage by means of two spindles fixed to the sides of the plane, and passing through slots in the sides of the carriage to allow the plane to be shifted to the back or front of the carriage. The spindles are secured to the sides of the plane by means of special clips, which allow of the plane being moved in the vertical direction referred to. To keep the plane quite steady, adjustable stay-cords are attached to the top of it, and fastened at the other end to the carriage. With this arrangement the alteration of angle or position, either laterally or vertically, can quickly be effected."

The exact moment at which the plane leaves the track is registered by the automatic breaking of an electric contact at that instant, and the velocity at this point of time is thus ascertained. The inventors hope by means of this device to obtain some definite information regarding the laws of resistance to planes in motion, and the best forms to be given to these surfaces for successful flight.

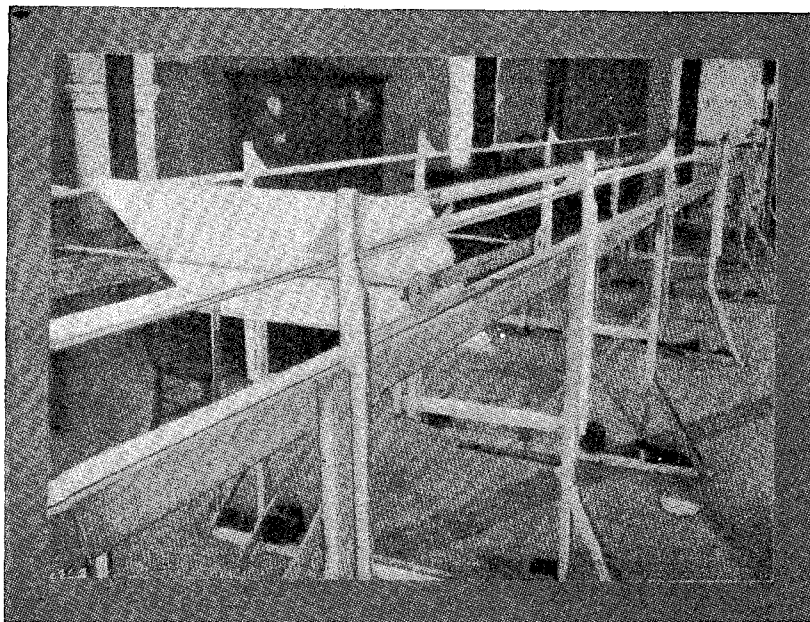


FIG. 1—EXPERIMENTAL AEROPLANE MODEL.

making himself unbeautiful in order to see beauty. And whenever a man assumes 'culture' in order to admire antiquity, he is becoming all that is crude and vulgar in order to study what is ancient and sublime. A boy looks at a steam-engine with much more notion of its meaning than an art-critic looks at a cathedral. For all the ancient things truly exist only to teach us to be young. The quaintest carved font exists only that we may be born again, and be babyish. The most venerable altar only exists that we may be married again and go on another honeymoon. It is a very good thing, by the way, to be frequently married again—always, of course, to the same person.

"My meaning is here that the mere Ruskin attack on the rails and wheels of science is just as unspiritual as the mere idolatry of rails and wheels. Ruskin was a materialist—because he hated some materials. There is nothing wrong about steel rods and iron wheels so long as the steel does not blind the eyes, so long as the iron does not enter into the soul. There is nothing wrong about the body traveling on rails so long as the mind does not travel in ruts. *Toddie*, in the American tale about children, always said, 'Wants to see wheels go wound'; and always insisted on his uncle showing him the inside of his watch; with the result, if I remember right, that the dust blew into the works. There is no earthly or heavenly objection to a man saying of trains and motors: 'Want to see wheels go wound,' so long as he is as innocent as *Toddie*. There is no objection to scientists splitting open the world like the uncle's watch, in order to look at the works of it so long as those scientists feel like children. The only objection to opening the world like a watch is an entirely extraneous one, as in the story. It is that a nameless something comes in from outside, something that is not young and not heroic; something that is dry and blind-

THE IDEAL PHYSICIAN

THIS desirable person is sketched by Dr. F. Cathelin, a lecturer in the Paris schools of medicine, in the *Revue de Mois*. We quote from a summary made for *The Review of Reviews*. The ideal physician, the writer says, must have what he calls six "moral senses"—those of duty, responsibility, kindness, manual skill, beauty, and sociability. Says the writer:

"The sense of duty toward the patient is the very first requisite in a doctor. This sense can arise only from a positive and innate altruism, or love of one's fellow creatures—a quality similar to that which moves the hospital nurse to devote her life to the care of the stricken. There can be no personal sensitiveness nor lack of interest in details, as against an absorbing curiosity that complicated cases arouse. And yet, with all this sense of duty, which calls for extreme goodness or sensitiveness of heart, he must not show a trace of emotion when his duty calls him to operate on a McKinley, a Carnot, or a Frederick II. In the profession the word equality has certainly found a lasting place. No matter how far he may have gone in his profession, or how rich he may have become, if he possess this sense of duty in his heart he will die an active member of his profession, unless old age prevents him from working.

"In the matter of responsibility a doctor must follow the traditional advice; namely, to do as he ought to do, no matter what the issue. No doctor can be held responsible for results that are independent of his zeal, and to limit his action by undue legislation is to put a stop to scientific medical progress. As for the sense of kindness, it is certain that the age of the brutal surgeon has gone by. There may be occasions when it is desirable, on account of a surviving family, to tell a patient that his end is approaching. But in the generality of cases, to pretend to see recovery in a patient is often effective, and is always kind.

"The proper sense of manual skill in a physician is founded on reflected audacity; that is to say, an audacity born of a sincere wish to succeed, and of common sense. Bold doctors are frequently characterized as innovators. It is incontestable, nevertheless, that many of these doctors prove the greatest. Boldness is frequently the difference between the clever and conscientious surgeon and the simple operator or dissector who has grown bold through indifference. And yet the surgeon's 'nerve' must always be kept in check by his prudence. That prudence must depend much on his intuition, without which a doctor is a public calamity. Judgment and correct intuition must be a part of his equipment. His sense of beauty must really be a sense of the artistic, an anxiety to execute with neatness and celerity; without these no operation can be said to be correctly done, either from the point of view of medical science or from that of the patient. But, above all things, a doctor must be good in the sense of his possessing good moral qualifications. His social rôle, therefore, becomes of the greatest importance."

ARE WE TOO ERECT?—Man differs from the lower animals in his ability to walk on his hind legs. We of the Western nations also differ from our Eastern brethren in sitting upright instead of squatting or reclining. It is the opinion of Arbuthnot Lane, who expresses himself very clearly on the subject in *The Lancet* (London), that we have gone a little too far in the path of merely physical uprightness. We quote from an abstract and criticism in *The Hospital* (London, December 4), which, by the way, does not agree with Mr. Lane's conclusions. Says the reviewer:

"What . . . the author wishes particularly to call attention to is the disadvantage the individual experiences from the habit of keeping the trunk constantly erect—a habit enforced by the condition of civilization existing at the present day. Europeans no longer recline as the ancients did, for chairs have taken the place of couches. The Anglo-Saxon, too, has given up squatting like the savage or the Bengali. And so all day long gravity is exerting an uninterrupted—an unfairly uninterrupted—downward pull on the viscera of civilized occidentals, and the bracing pressure of the front of the thighs never comes to the aid of the abdominal muscles. Even by night . . . there is no absolute relief, because the heavy lower part of the body sinks deeply into the soft bed. Reading this, some of the more introspective of Mr. Lane's audience may recall that when, on the links or on a country walk, they lay down

to rest, their ease of body and mind was contributed to by the very material circumstance that the firm resistance of the ground, giving a comfortable hoist to the pelvis, relieved the strain on the attachments of their internal arrangements."

Whether Mr. Lane would have us discard chairs for rugs and use couches at table, he does not say; but this would be a fair inference from his contentions.

MUSTACHES AND COLDS—That facial hair affords a lurking place for germs and that shaving is a measure of prophylaxis, is the position of a correspondent of *The Lancet* (London, December 4) who writes to that paper of his discovery that clean-shaven persons appear to enjoy a kind of immunity from the common cold.

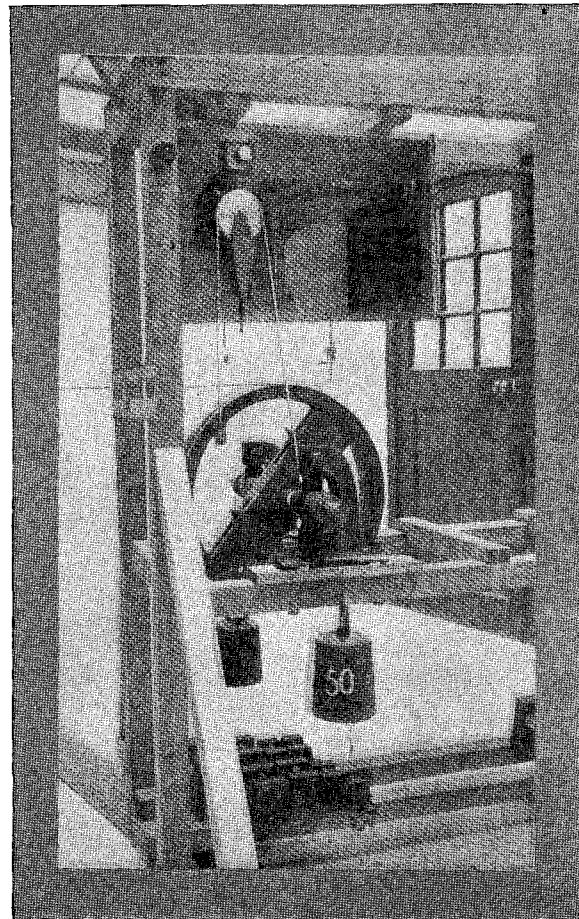


FIG. 2.—MACHINES FOR TESTING AEROPLANE MODELS,
In the "aeroplane laboratory."

"At all events," he says, "they seem to be attacked less frequently than those who cultivate the mustache." *The Lancet* continues:

"He suggests that the daily shaving may prove an antiseptic process which regularly removes pathogenic organisms which otherwise lurk and grow in the mustache. It is, of course, conceivable that the mustache affords a nursery for organisms, especially as it must be moist, and occupies a position close to the breathing intake. Further, it is reasonable enough to assume that the daily shave does, as a matter of fact, amount to a regular antiseptic routine. The mustache is obviously difficult to clean thoroughly and it is open to doubt whether mere washing completely sterilizes it. Even if that should be the case, the mustache would soon be full of organisms again, as it is constantly exposed to a stream of air which is rarely sterile. According to our correspondent's view, however, there should be a similar immunity enjoyed by women unless we lay stress on the fact that no method in their toilet amounts to the drastic cleansing process of the razor and soap. Moreover, fine downy hair is natural to the lip of women and children. The observation is an interesting one, and its author sends some confirmation of his view in the shape of details of cases in which the subjects, while regular sufferers from common cold when they wore a mustache, seem to have enjoyed a comparative immunity since they have shaved clean."