

**The Large Countries of the Globe and Their Colonies.**

M. Paul Barré, secretary of the Société de Propagande Colonial, says L'Illustration, has compiled a list of the colonial possessions of the various powers. Following are the figures which he gives:

	Million Inhabitants.
British Empire.....	406
Chinese Empire.....	400
Russian Empire.....	132.5
France and colonies.....	97.5
United States and colonies.....	85.5
England and colonies.....	61.5
Japan.....	45
Austria-Hungary.....	44.5
Holland and colonies.....	33
Ottoman Empire.....	25.5
Belgium and the Congo State.....	23.5
Spain and colonies.....	18
Brazil.....	17
Portugal and colonies.....	13.3
Mexico.....	11.5

Of the inhabitants of the British Empire, about 40,405,000 are in Europe, 308,300,000 in Asia, 45,000,000 in Africa (including Egypt), 7,100,000 in America, and 5,500,000 in Oceania.

France has 38,300,000 in Europe, 23,600,000 in Asia, 35,000,000 in Africa, 420,000 in America, and 150,000 in Oceania.

The following table gives the land area of the countries having about a million or more square miles of surface:

	Square miles.
British Empire.....	11,969,730
Russian Empire.....	8,803,536
Chinese Empire.....	4,324,514
United States and possessions.....	3,794,015
Brazil.....	3,228,735
Germany and colonies.....	1,235,584
Ottoman Empire.....	1,154,112
Argentine Republic.....	1,077,274
Portugal and colonies.....	911,243
Belgium and Congo State.....	899,273
Holland and colonies.....	751,775
Mexico.....	747,914
Persia.....	635,167
Bolivia.....	511,222
Colombia.....	464,502
Peru.....	438,817
Venezuela.....	403,109
Spain and colonies.....	391,139

England occupies the first place in respect to her population and area. She contains a quarter of the human race. A second quarter is Chinese. Almost a third quarter is contained in Russia, France, United States, and Germany. Three-quarters of the population of the globe are therefore governed by only six states.

The Anglo-Indian empire contains only 125,489 square miles in Europe, but it has 2,248,476 in Asia, 2,625,616 in Africa, 3,665,823 in America, and 3,299,781 in Oceania.

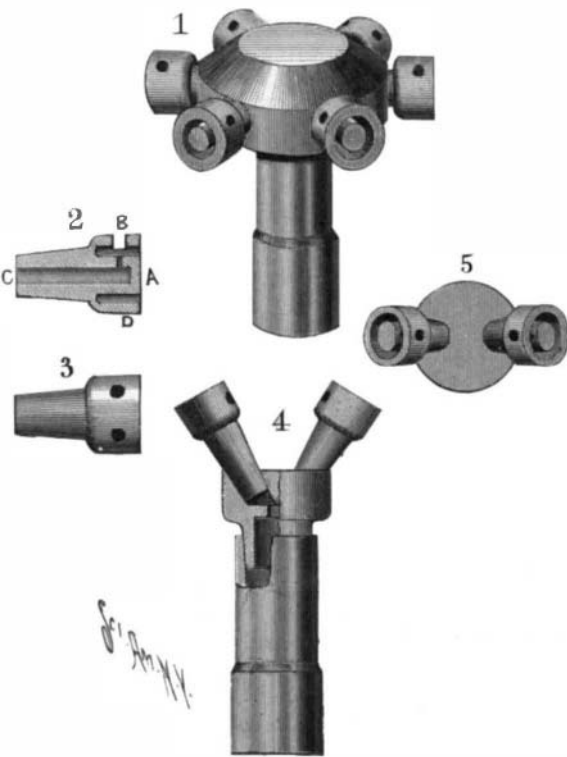
France has 206,960 square miles in Europe, 309,668 in Asia, 3,706,752 in Africa (including the zone of French influence), 78,382 in America, and 15,058 in Oceania.

**A NEW ACETYLENE GAS BURNER.**

Acetylene gas possesses so many advantages for isolated lighting that it is little wonder the industry is constantly progressing and is now on a sure foundation. One source of trouble which consumers have had with the new illuminant has been that owing to the great richness of the gas it was not possible to provide burners which would consume more than one cubic foot of acetylene gas per hour without smoking and consequent loss of luminosity. This difficulty has been obviated in a new acetylene burner invented by D. M. Steward, of Chattanooga, Tenn., by the grouping of any number of flames on one-burner and by a new air-mixing device. Our engraving shows the construction of the burner. The pillar does not differ from those in general use. At the upper end of this pillar is fitted the head of the burner proper which is made of lava or other similar substance. The burner stems extend from this head and diverge from each other. They are arranged in pairs, and the jet openings in each stem are adapted to direct the jet toward that of the adjacent stem. Each stem is of cylindrical form, and is made slightly tapering with the smaller end fitting into the openings in the head and its larger end surmounted by a burner tip formed by an annular cup-shaped flange, D, and extension, A, in which the discharge opening is drilled. An opening, B, is drilled through the flange opposite the opening from the tube proper, C, which conveys the gas to the tip (see Fig. 2). Opening, B, in the flange is of larger diameter than that in the center wall of the burner. This flange provides an air space between the extension, A, which terminates the end of the gas tube, C, and the interior of the flange, so that as the gas is discharged from the opening it will suck the air into the air space, and so provide for uniform admixture of the air with the gas discharged through the aperture in the flange. The air-mixing device is a unique feature of the burner, and is an improvement on all previous burners, the old method being to surround the jet of gas with a number of small inlets or holes for air. In the new burner the cup-shaped cavity provides a sufficient amount of air, and

keeps the burner cooler than with any other known construction.

The tips are so arranged that the two jets are directed toward the jet from the adjacent tip, and inwardly in an oblique position. The jets so discharged from each tip commingle with the jets discharged from the adjacent tip on each side so as to form flat flames. The head being located between the pillar and



**A NEW ACETYLENE GAS BURNER.**

the burner stems, the pillar is kept from becoming heated. The burners are made by the State Line Talc Company, Chattanooga, Tenn.

**PECULIAR LIGHTNING FLASHES.**

Our illustration is taken from a photograph by Mr. A. E. Small, of Madison, Wis., made in June, 1898, and was sent to us by Mr. Robert M. Long, of Sun Prairie, Wis.

Attention is called to the peculiar ribbon-like appearance of the flash.

An experienced photographer of lightning flashes informs us that this photograph is an excellent example of its kind, and states that the theory is that the lightning, in its passage through the air, is driven by the wind so as to flatten it out, giving it the ribbon effect. This may occur oftener than we are aware of, because if the wind was driving the lightning toward or from the camera, the effect could not be observed. If, however, the wind blows across the field of view,



**RIBBON LIGHTNING.**

then an opportunity is afforded for getting a picture of this curious kind of a flash.

The tree barely visible at the bottom of the picture shows the flash to have moved in a horizontal direction across the sky.

It is probable the study of photographs of lightning flashes may become as interesting as those on the subject of astronomy. Certainly some remarkable effects can be obtained if the proper advance arrangements are made.

**Automobile News.**

There will be a parade of automobiles at Newport some time during the present month.

The first automobile club of Germany has just been organized and the Duke of Ratibor is the president.

The United States Express Company will soon have an automobile express wagon for trial in New York city. Horseless vehicles are an ideal means of transporting express matter in large cities.

A show of automobiles is to be held at Dover, England, September 18 to 21, simultaneously with the meeting of the British Association. The object of the show is primarily to provide an interesting display and to benefit the motor car industry.

A New Jersey automobile syndicate has recently increased its capital stock to a considerable amount in order to establish a connecting system between New York and Philadelphia. It is expected that this will be a model working system for other cities.

A recent writer in a New York paper has noted the fact that with the general introduction of automobiles cruelty to animals will almost cease. A driver will no longer be able to exercise his whip, and if he forces his motor unduly he is reasonably certain of a good repair bill.

A plan is on foot to establish an automobile line between New York and Morristown, N. J. The residents of that town object to a trolley line which it is proposed to construct, and it is possible that the traction company will start an automobile line, which will be unobjectionable.

Prince Lobenguela, of Matabeleland, recently had a ride in a horseless carriage. When the vehicle arrived, he inquired after the horses, and first considered it as a "devil machine." Finally he consented to mount and thoroughly enjoyed the ride. At the end of the trip he patted the automobile as though it were a horse.

On July 30, two automobiles beat the Paris-St. Malo express in a race between these cities, which are 226 miles apart, making the best time ever recorded for an automobile. They covered the distance in seven hours and thirty-five minutes. The time of the train was seven hours and forty-eight minutes. It cannot be considered a very fast express train, however.

As already noted, the number of accidents to automobilists in France is constantly increasing, and unfortunately a large number of them cannot be traced to any well-defined cause. The entire motor carriage seems to fail at the wrong time, when going at a high rate of speed. In most instances the carriage has been entirely destroyed and the occupants have only escaped death or serious injury by a mere chance.

The recent automobile exhibition at Paris more than paid expenses, and there is a tidy little balance left to facilitate international contests. The exhibition showed that what was desired by a large number of people was an automobile carriage which should be bigger than a tricycle and which could be sold at a price much less than the large and heavy automobile vehicles. Those which cost about \$800 are very popular.

The Automobile, a monthly magazine devoted to the interests of horseless traction, will soon be published in New York city. The business manager of the magazine has just returned from Paris after a close study there during the last two years of everything appertaining to automobile carriage interests, and he has secured the co-operation of competent, expert writers in Europe. The first number of this periodical will be looked for with interest.

Liverpool has had an exhibition of horseless vehicles for heavy traffic. A number of lorries and heavily loaded wagons were set at difficult tasks, even to climbing zigzag gradients and running up hills laid with smooth cobbles. A Bailey & Thornycroft lorry loaded, stopped and started on a steep gradient. It succeeded in successfully carrying its load of three and a half tons and restarted without skidding. It is the opinion of English experts that if England has been backward as regards motor carriages for pleasure, she is well ahead with vehicles for carrying freight, and that these wagons are destined to play an important part in the transport work for the army.

The automobile and bicycle exhibit at the Paris Exposition will be located in the building, at the Bois de Vincennes, provided for the housing of the railway exhibits of all countries. Ample space has been secured for the American bicycle building. It is located in conjunction with a special bicycle track for showing the wheels in operation. It is evidently expected that American builders will make a larger showing than any other country. A track two miles in length runs around the lake in the park, which will aid in properly showing the automobiles. A space of 4,300 square feet in the automobile building has been secured for American exhibitors. American builders of horseless vehicles are now so numerous and the types which they make are so varied that the display ought to be one which will be highly creditable to this new industry.