Petticoat Dresses

Petticoat Made of a Succession of Valenciennes Frills, with a Line of Skunk

By Lady Duff-Gordon
("LUCILE")

EIGHTEEN months ago if one asked in a Fifth Avenue shop to be shown some petticoats, the young lady in attendance would look at one with a blank "I-don't-know-what-you-mean" look. "Petticoats?" she would repeat. "Oh, yes, you mean for old ladies, madam," and would direct you where you might find some comforting woollen garments that one sends in one's Christmas bundles to the poor, this being the only kind of petticoat known in the time of the tight skirts.

To-day one cannot enter a shop without being faced with rows of multi-colored, much befrilled and beflowered delightful creations that are to be worn under the full skirts that have taken their place.

To my mind the petticoat, like a hat, boots or gloves, must be individual with the garment. That is why so many of my dresses are made with the petticoats actually attached and made into the gown with which they are to be worn. I am making petticoats in endless varieties and of endless methods. Some are made frilly and fluffy, to be worn underneath the hooped skirt; some are made with hoops in them, to be worn underneath a fully cut skirt that is not hooped; some are trimmed with flowers, lace, embroidery.

I have a delightful little gray dress, simple and quite Puritan in cut, while the petticoat inside is of black and white embroidery over the usual flesh-colored foundation. It is so amusing to see this little taffeta dress just caught up, as if by accident, at the side, displaying this startling undergarment, somewhat bold in design, the black being of inlets of tulle and the embroidery being of floss silk and run with black ribbon.

The pictures I have chosen this week are particularly suitable to my above talk, because each of them has a petticoat of its own. While each in a way is of different style so far as the dress goes, two are of picture persuasion, while two are distinctly modern, though, of course, I don't say the picture dresses are not modern, too, as practically every smart gown of the moment is borrowed directly from the early '30's or '40's of the last century.

The little sprigged taffeta made over a hoop has a petticoat made of a succession of Valenciennes frills, with a line of skunk and more Valenciennes, with tiny bouquets of flowers above that. The little bodice is tight and pointed, girdled with shades of lavender and green, while the small ruching on the basque and sleeves and bonnet match those on the petticoat.

To the right is a little stiff satin gown embroidered in rose color, over a petticoat made with hoops in it, while pink and silver striped satin form the bodice. Petticoat and sleeves are made in one garment, coming through armholes on the shoulders, which is of silver lace.

Steel Colored Bodice and Flesh and Silver Petticoat

Again, further to the right is a little afternoon dress of green velvet, with a green chiffon bodice and chinchilla collar. Chinchilla also is worn on the canary colored hat.

The little evening dress at the bottom is of silver gray and black jet embroidered tulle, with a steel colored bodice and a flesh and silver petticoat.

LADY DUFF-GORDON, the famous "Lucile" of London, and foremost creator of fashions in the world, writes each week the fashion article for this newspaper, presenting all that is newest and best in styles for well-dressed women.

Lady Duff-Gordon's Paris establishment brings her into close touch with that centre of fashion.

Petticoat and Sleeves Made in One Garment

Afternoon Dress of Green Velvet, Green Chiffon Bodice and Chinchilla Collar

The Gyroscope Will Solve the Problem of Aerial Navigation and Torpedo Warfare

By LEON LECORNU, of the French Institute.

MAKE the aeroplane stable; make it impossible for it to turn over or lose its balance and the problem of aerial nagivation is solved, is the admission of most scientists.

To understand the principle of the gyroscope we have to begin at the beginning. If you look at a child's top spinning rapidly it seems motionless. Its outward aspect does not change at all; each particle of its mass leaves its place only to be replaced by an identical element. Yet it is possessed of certain properties very different from those possessed by it when at rest. If after placing the point in a fixed cup this top is left to the action of gravity it will be observed that the axis, instead of falling vertically, preserves a constant inclination and begins to describe a cone, about the vertical, starting from the point.

What is it that is the cause of neutralizing this action of the weight? It is not enough to say that the rotation develops centrifugal forces which pull upon the axis. These centrifugal forces act equally upon all parts and are incapable of preventing the fall. If the axis does not fall it is because, as its direction changes, new forces are engendered, called in mechanics "compound centrifugal forces," the purpose of which is directly to counteract the weight. Calculations have demonstrated that they act upon the axis to displace it conically, and to this we give the name precession, which verifies our experience, for if we prevent the precession from acting the axis falls at once, and, inversely, if we press upon the axis to increase the precession the axis rises more and more.

These curious properties of the top may be generalized, leading us to the idea of the gyroscopic or gyrostatic effect. In this way we learn that if a body entirely symmetrical to its axis is turned rapidly on that axis, of which one point remains fixed, if we apply force to any other point of that axis it will be found to move, not in the direction of that force, but in a perpendicular direction, with a rapidity which, other things being equal, is in inverse proportion to the rapidity of the rotation. The axis is thus more stable than the rotation and more rapid and, besides, it sways laterally instead of obeying directly the pressure brought to bear upon it.

An experiment will show this clearly. Take a solid ring, the axis of which is supported at each end in some way, and after giving the ring rapid rotation try to swing the support. At this moment we feel the same sensation as if an invisible hand had caught hold of the apparatus and given it a perpendicular twist away from what we want to do. A savage trying this for the first time would deem himself in the presence of a mysterious divinity.

If a stone or wooden egg be placed upon a table and spun quickly the egg will be seen to rise on one of its ends, showing the gyroscopic action. This must be done with a more or less rough egg to secure the friction on the table.

At a meeting held in the Royal Institution of Great Britain, February 14, 1913, Professor Andrew Gray, of the University of Glasgow, demonstrated a variety of gyroscopic apparatus, one adapted to a bicycle, showing how it was balanced automatically and perfectly.

The earth itself is a huge gyroscope, a ball, with flattened ends and broadest at the equator. If this great top were not subject to outer attractions its axis would preserve the same inclination invariably. But astronomical observations prove that in reality this axis possesses a precessional motion around the perpendicular in the plane of the ecliptic; that is to say, in the plane of the orbit described by the earth around the sun. The movement is so slow that the complete revolution takes 26,000 years, but its existence is plainly established and has, as a consequence, the precession of the equinoxes, discovered by the Greek astronomer Hipparchus.

Here, too, we are in the presence of a gyroscopic effect. The perturbing force is the attraction exercised by the sun (and also by the moon) upon the equatorial expansion. If the earth did not revolve this attraction of the sun would be felt by that part of the equator nearest to it, forcing the line of the poles to change perpendicularly to the ecliptic, causing the disappearance of the seasons, but the earth does revolve, and the attraction of the poles becomes a conical precession. The rotation of the earth has been proved by the gyroscope, but more than that the gyroscope can be and is applied to the compass, so that it is always kept perfectly true and pointing as it should. The metal mass of the modern ship does not affect the gyroscopic compass as it does the ordinary compass. The gyroscopic compass is of great value because it takes the same inclination as the line of the pole and thus indicates the latitude to the captain of the ship or aeroplane.

The application of the gyroscope to submarine torpedoes has increased the efficiency of these awful implements of warfare manifold. It is impossible to give the enormous mass of the torpedo the revolving motion given to a shell when fired from a cannon, but each one of the torpedoes has its own small gyroscope at the back, which preserves the balance perfectly and aids enormously in the scoring of a shot.

Gyroscopic principles have been applied, only very lately, to the perfecting of turbine engines in which the revolutions must be very rapid and where great difficulty was found until automatic regulators of the shafts were supplied, and these on gyroscopic principles.

Gyroscopic effects are apparent in any turning body, no matter what the size. The earth itself acts like a huge gyroscope. At the other end of the scale, molecules of matter, if, as we suppose, they are in constant revolution, are affected by the same laws. According to De Heen, the physicist knows neither inflammability, nor corpuscles, light, magnetism, nor electricity; he deals only with gyrostats and living vortices. Bogaert holds that if we take account of the gyroscopic properties of molecules we may, perhaps, abandon certain bold doctrines which tend to diminish the principles of mechanics and notably to destroy the idea of mass.

The fall of an apple led Newton to the discovery of gravitation, which governs the astronomical world. Why, then, may not the child's top, which, on the contrary, refuses to fall, reveal to us the mysteries of the world of atoms?