

The PURPLE MASK

by Grace Curard
Novelized from the Motion Picture Play of the Same Name by The Universal Film Mfg. Co.

SIXTH EPISODE.

The Queen's Necklace.

Cracking flames were devouring the tinderlike superstructure of the air-plane, before it had fairly landed in the tree-top. The terrifying position they were in, compelled the three passengers to act with extreme promptness to save their lives. Phil Kelly, who had been stunned by the blow that knocked him onto one of the wings of the machine, just as it began its ascent, was now regaining consciousness.

Pat hauled the Sphinx from his recumbent position on the burning wreckage of the airplane. Then she clambered into the branches of the tree herself. The girl crawled down to the lowest branches and jumped to the ground. Kelly followed her, and the girl immediately appeared upon the scene a group of excited and astonished farmers who had been attracted to the scene by the brilliantly burning airplane. Willing hands assisted the girl into a nearby house, while others carried the partly unconscious detective into another farmer's home.

Pat soon recovered her composure and aside from a few scratches that would soon be forgotten, discovered that she had escaped miraculously from a terrible death. Then, rejoicing in her good fortune, the girl left the friendly shelter and good Samaritans had provided and made her way, in the early dawn, to the hangar where her automobile was waiting.

When Kelly had collected his senses and started to investigate, he found, in the room where Pat had been sheltered, only one sign that she ever been there. On the sofa was a purple mask.

"Fooled again, and by this slip of a girl," Kelly said to himself as he started back toward Paris, walking to the nearest railroad station. That morning safely at home, Patricia regarded her aunt with an incomplete version of her adventure.

But it was several weeks before Pat again entered a contest of wits with the Sphinx.

However, unknown to the beautiful Patricia, there were certain conspiring elements at work that would soon bring her into activity—that would give her a chance to exercise her charitable instincts and do something in the interest of the oppressed. Pat's fame had extended beyond the confines of Paris. She was becoming known, among certain classes, throughout France.

In the principality of Dufrane there were certain conspiracies fomenting. King Fergus had aroused the enmity of his people, by appropriating for himself a necklace of great value that his queen, upon her death, had bequeathed to him. He had bequeathed to a fund she intended should be used to relieve the distress of the poor.

These were the outward conditions when there came one morning to Phil Kelly a message from King Fergus to appear at once at his palace. Taking with him his two most trusted assistants, the Sphinx set out immediately for Dufrane. King Fergus had detailed his son, Prince Angus, to meet the famous detective and have him brought at once to the council chamber in the palace.

"I have come, sir, at your command," said Sphinx Kelly, as he ushered into the presence of the king. "What are your further orders?"

The king fixed his steel-gray eyes upon the famous detective and said:

"The life of my dynasty is threatened. The people are conspiring against me, and I want you to fathom the plot and report to me your findings. Prince Angus, who has brought you here, will give you the full details." Then the king indicated that the audience was at an end and Kelly, accompanied by Prince Angus, repaired to another room in the palace.

Prince Angus proceeded to impart the details of the plot against the king. He spoke rapidly, and was evidently ill at ease.

"My mother died a few months ago, and willed to the peasants a valuable necklace—the jewels to be sold and the proceeds to be placed at the disposal of the People's League for distribution among the needy. The king, my father, has decided that he shall keep the jewels, and has locked them in his private safe."

"I must know every part of the story," said Kelly, "or I cannot proceed with intelligence."

"The fact is," Prince Angus resumed, "Duke Hestor covets the throne, and he is very popular with the people. There may be an uprising at any hour and the king may be deposed. This would bring Duke Hestor into power."

"This Duke Hestor," Phil began, "does he know the combination to the safe?"

"Yes, he does," the prince replied, "and, unfortunately, he and the king are the only ones who can open the door to the vault."

"If the duke were able to procure the gems, could he sell them readily?" was Kelly's next question.

"Yes, indeed," was the immediate answer. "Only a short distance from the palace there is an immensely wealthy banker who has made it known publicly that anyone who will bring him the gems, may have the money."

"Who is the leader of the People's League?" the detective next asked.

"They have never had a real leader

until this very week. There is a mysterious woman among them now, and she is immensely popular. Her presence caused the king to send for you. She is working the peasants into frenzies of enthusiasm."

"How long did you say this woman has been here?" Kelly inquired, his keen interest being shown in voice and manner.

"Only a day or two. She has come here from Paris, where she is known for her charitable deeds and her interest in the poor and oppressed."

Kelly sat for a moment silently considering the outlook.

"You may find the king that I will fathom the plot," said the Sphinx.

While Prince Angus and Kelly were discussing the problem that confronted them, the girl leader of the People's League was holding a secret session with Duke Hestor in another room of the palace.

"You must take me to the room where the vault has been built. Then give me the combination, and I will get the jewels. They belong to the people and they must have them," the girl was saying.

"I can understand why you are the idol of the poor Parisians, Miss Patricia," said Duke Hestor with unconcealed admiration. "They told us you would dare anything in behalf of the poor, and that is why we sent for you—but I had no idea you would face such dangers as stealing the jewels might involve."

"The danger means nothing, if I can accomplish the purpose that these poor people have entrusted to me," the girl responded. And as she was speaking Duke Hestor wrote a series of numbers on a piece of paper and held them before Patricia's eyes.

"Remember those figures," the duke said, "and you have the combination."

Over and over again Pat studied the figures, and when he was assured they were fixed in her mind, Duke Hestor tore the slip of paper into small bits and thrust the particles into his pocket.

(To be continued.)

ORE CARRYING VESSELS

Speed With Which Ships Are Loaded on the Great Lakes.

The loading and the unloading of the big ore boats of the Great Lakes are accomplished with remarkable speed. According to The Story of Steel, an ore boat was loaded at Duluth in September, 1915, with 11,262 tons of ore in one hour. At one of the Lake Erie ports, the great Hulet unloaders, which grab fifteen tons at a bite, took out a cargo of 11,983 tons in three hours and forty minutes. The ore docks, which are at Duluth and Two Harbors, are complex affairs of three levels. First, the dock proper extends hundreds of feet into the lake; upon the dock, beside a basin wide enough to admit the great ore steamers, is a structure of heavy timbers, whose upper sections form pockets for the ore, and on the very top are lines of railway tracks. The loaded trains from the mines are run out on the tracks over the pockets, and the ore is dumped automatically. Then the empty cars are switched over to the return track and started back to the mines. One of the great fleet of ore boats comes up from the lower lake port, slips into the basin and is made fast to the dock. The ship, six hundred feet long and only sixty feet wide, is a steel shell with houses for each end—officers' quarters and bridge in the bow, crew's quarters and engine room in the stern. There are hatches six feet apart all down the long, open deck between the houses. As soon as the ship is made fast the hatches are opened and from the ore pockets above are let down chutes that are folded flat against the pockets when not in use. The doors of the ore pockets are opened; two laborers with crowbars stand by to start the ore, which goes rushing down the chutes so fast that in twenty minutes a ten-thousand-ton ship is loaded. A few minutes later, under its own steam, the vessel puts out into the lake and joins the endless procession of boats that carry ore throughout the open months.

SAWDUST STOPS FIRE.

Forms an Effective Blanket That Shuts Off Air From Flames.

Recent experiments went to prove that sawdust is useful as a fire extinguisher. It was found to be very successful in quenching fires in oil, and much superior to sand for fires in tanks of inflammable liquids. Experiments were conducted with tanks of burning lacquer, though the same principles appear to apply largely to tanks of burning oil. The floating sawdust forms a blanket that shuts off the air from the flames; and sawdust itself catches fire only slowly, and then does not burn with a flame. The sawdust blanket was completely successful in putting out the fires in these tests. It made no difference whether the sawdust was wet or dry. The efficiency of sawdust is greater on viscous than on thin liquids as it floats more readily on the former than on the latter. The sawdust itself is not easily ignited, and when ignited it burns without a flame, and the burning embers have not sufficiently high temperature to re-ignite the liquid. Mixing sodium bicarbonate with the sawdust increases its efficiency materially.

A new microphone to collect sounds and convey them to the ears of partly deaf persons by almost invisible wires is so compact that it can be worn under a man's necktie.

The wheat crop of practically the entire world has suffered serious reduction during the past year, and the prospects for the coming year promise little or no increase in the production of this essential cereal.



A COURSE IN HOUSEHOLD SCIENCE COMPLETE IN TWENTY-FIVE LESSONS.

Lesson II.—The Function of Water.

Water is a necessary constituent of the blood stream, as it forms three-fifths of the total weight of the human body. Water acts as a carrier throughout the body, and is a very necessary agent in the process of digestion and elimination.

The presence of water in the blood regulates the temperature of the body. It acts as a distributor of heat where the blood flows from the warm interior to the cold exterior of the body.

The process of digestion is carried on by the aid of water. For this reason, it is necessary to take a large amount, at least two quarts daily, in order to preserve health. Besides the amount required for purposes of digestion, it is necessary in hot weather to drink an extra amount in order to counteract the loss of moisture occasioned by sweating.

Pure drinking water and an abundance of it is therefore absolutely essential to the preservation of health. Disease germs are often present in water and the best way to safeguard

health is to boil the water when there is the least doubt as to its purity. Because water looks bright and sparkling it is not always safe to conclude that it is therefore free from impurities. Every care should be taken that the source of water supply is uncontaminated.

The reason that boiled water has a flat and insipid taste is because the oxygen has been driven off by the boiling. Stirring will incorporate air and restore oxygen.

A glass of water taken before meals prepares the stomach to receive food. It is especially beneficial to drink a glass of hot water before breakfast. Drinking water taken when the mouth is empty and not used to wash down the food. It is likely to cause an increase in weight in fleshy persons.

A glass of water after meals aids digestion. Drinking very cold water is harmful; 45 to 55 degrees Fahrenheit is the right temperature. As a rule people do not drink sufficient water to maintain perfect health.

Seasonable Recipes.

Strawberry Charlotte.—Make a custard of one cupful of milk, two yolks of eggs, two tablespoonfuls of cornstarch, two tablespoonfuls of sugar. Dissolve starch in water and add scalding milk. Cook for three minutes. Remove from fire. Beat in yolks of eggs and pour in a dish lined with sponge cake. When cool, cover with meringue made from whites of eggs beaten very stiff, with two ounces of sugar, and one cupful of crushed strawberries which have been folded in after the eggs are whipped.

Cherry Roll.—Make a puff pastry of one cupful of flour, one-half teaspoonful salt, one teaspoonful baking powder, four tablespoonfuls shortening, one-quarter cupful of water. Mix dry ingredients, rub in shortening, add water; mix to dough. Roll one-quarter inch thick on well-floured pastry board. Spread with cherries, stoned, and chopped fine. Sprinkle over the cherries one-half cupful of brown sugar, roll the dough like a jelly roll. Place in a well-greased and floured pan, pouring three-fourths cupful of water and four tablespoonfuls of sugar over the roll as you place it in the oven. Bake in moderate oven thirty-five minutes. Serve with fruit sauce.

Banana Cake.—One-half cupful sugar, yolk of one egg. Cream until a light lemon color, then add: five tablespoonfuls water, three-fourths cupful flour, one and one-half teaspoonfuls baking powder. Beat well to mix, then carefully fold in the stiffly beaten white of the egg; bake in an eight-inch layer cake pan eighteen minutes in a hot oven. Cool, split and fill with crushed bananas.

Strawberry Pudding.—One and one-half cupfuls cold water, five tablespoonfuls cornstarch. Place in a

saucepan and stir until starch is dissolved, then bring to boiling point and cook three minutes. Remove from the fire and add: one teaspoonful vanilla, one-half cupful sugar, stiffly beaten white of egg. Pour in small pudding mold, set in cool place to mold. Turn the pudding from the mold, cut with sharp knife in one-inch slices and place on fruit platter. Cover with crushed and sweetened berries.

Currant-Gooseberry Jam.—To a gallon of gooseberries use one quart of red-currant juice prepared as for jelly, and six pounds of sugar. Make a syrup with the currant-juice and the sugar; then add the gooseberries that have been stemmed and tailed. Simmer slowly until the berries are a prettily clear red color, then fill into glass jars. Boil the juice down to the jelly stage, and pour over the fruit, and seal.

How Eggs Are Spoiled.

Most eggs when laid contain very few or no bacteria that would cause decomposition, and the entrance of these micro-organisms usually takes place because of carelessness or neglect on the part of those handling the eggs. One of the chief sources of infection is dirty or damp nests. Eggs, like milk, make an excellent place for bacterial growth and development and they spoil very readily when kept in dirty or unsanitary conditions. The shell of the egg is porous to admit the passage of air in and out, but it is coated with a mucilaginous matter which prevents the entrance of bacteria unless it is very old, wet, softened by moisture, or rubbed off. Therefore, eggs should not be washed, held in damp, musty places, or handled more than necessary, and should be marketed or preserved as soon after laying as possible.

THE LARGEST GEYSER.

New Zealand at One Time Had the Most Formidable Geyser in the World.

While the Waimangu Geyser in New Zealand lasted it was the largest in the world. Its name, "black water" in the Maori tongue, came from the dark column of water and debris that it threw up at every eruption. Stones and boiling water, accompanied by vast clouds of steam, rose nine hundred to fifteen hundred feet at irregular intervals, twenty to twenty-two times a month. At other times the water of the Waimangu lay in a cup-shaped depression about twenty feet deep, two hundred and forty-nine feet wide, and four hundred and twenty feet long.

Several hours before each eruption the lake would begin to boil violently and to send off dense clouds of steam; loud subterranean rumblings were heard. When the final explosion came, the whole lake, mingled with material from below, rose bodily; its torrential fall was destructive to a large area round about, and the slopes near by are still furrowed by the rivers of water that coursed down them. The column of water was thrown up about four times as high as the Giant Geyser, now the largest in the Yellowstone Park, throws its water, and the area of its base was about two and a half acres, in comparison with the few square rods of the American geyser.

Close by the geyser is a hill surrounded by an iron hut, about four hundred and fifty feet above the pool, where observers took refuge during eruptions. One day in August, 1903, a party was on the slope below this building watching the boiling pool. As the approach of the explosion became more imminent the guide warned them to back, and all except four obeyed. The mother of one of the young ladies called to her; but she wanted to take another photograph, and answered, "Just a moment, mother." During that moment the eruption occurred, and the disobedient young lady and her three companions were swept to a tragic death.

Frost And Soil Fertility.

The rigorous winter that prevails over the greater part of Canada looks up for several months—practically from harvest to seeding time—the soil's fertility. The plant food that has been converted into available forms during the preceding summer and autumn and which is left over after the season's growth, is conserved for the crop of the succeeding year. The frost holds tight within its grasp the plant food untold value—especially the more valuable nitrates so necessary for stimulating the growth of the young crop. In regions enjoying a more open winter this soluble plant food would be lost by leaching. With all their drawbacks, our severe winters, with their almost continuous low temperatures, must be regarded in their role as conservers of fertility, as an agricultural asset of no small value, one which must profoundly affect in a beneficial way our dependence upon purchased fertilizers for satisfactory yields.—Frank T. Shutt, Dominion Experimental Farm.

HOW MAN BECAME CIVILIZED.

Progress Came Through Primitive Man's Desire for Varied Diet.

It is a common saying that the way to reach a man's heart is through his stomach, but it is not commonly known that man reached civilization through his stomach.

In the beginning of things man, a wild creature, more monkey than human, lived on roots and berries, science tells us, trying first this and that article and discovering by the "trial and error" method which was good and which was not. There is considerable evidence that he kept to this vegetarian diet for many generations, never discovering the dietetic value of meat.

Then the change came. Either the stock of herbs and wild fruits gave out in his vicinity or he got a taste of animal flesh after a forest fire, for he began to eat meat. Perhaps he killed an animal in combat and experimented on the raw flesh. No one will ever know just how he tasted it first. At any rate he liked it better than the insipid vegetarian diet and became devoted to it.

When the wild animals grew elusive and hard to kill he began to trap the beasts and hunt them systematically with an eye to providing for the lean days. Following these days the supply of animals began to diminish and he became a hunter of considerable range. Even the new fields became more difficult for him, and he hit upon the scheme of taming animals and raising them within stockades or in prison valleys so that they would be on hand for any day of need. Catching the wild boars, he within a certain number of generations produced the hog; the wild bovine herds he turned into cattle. By taming he made the modern sheep out of the mountain goats and sheep. Various kinds of birds he caught and transformed into chickens and tame ducks.

It was his stomach that he was thinking of.

Gradually he became accustomed to living near his herds. The next step was the erection of a more or less permanent abode, a home that he deserted only when his herds had exhausted the pastures in the vicinity.

Out of this pastoral age he developed the agricultural period, adding to the forage of his live stock by planting for its benefit. His motive in settling down and forming communities was largely the conservation of his meat supply.

Slowly civilization began to dawn. Thrown in company with others of his kind, he began to talk better, to live better, to think better. Tribes formed. Government became a thing to be considered. Laws were made. Justice was administered. Man had ceased to be a wanderer, a lonely man. His

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stomach had tamed him and laid the foundations for civilization.

When he quit making his main diet off raw meat and began cooking the animal flesh that came into his possession he not only tickled his palate but he improved his disposition. He became less savage, less bloodthirsty, more of a pacifist. The very act of raising grain, part of which he learned to eat and part of which he gave to the stock, tamed him, for by it he neglected his combative instincts, which had been called upon so strenuously during the days when he fought with wild animals, hunted them with spear and arrow.

TO THE VICTORS OF VIMY RIDGE.

Brave, splendid men of Canada
Who went abroad to die,
Whose bodies lie in yonder France,
Under a foreign sky,
Who won the hard-fought victory
On Vimy Ridge, the best,
Safe may you lie, oh, noble men,
And take your well-earned rest.

The blood-soaked soil which folds you
Is pregnant with new life,
With seeds of fine and splendid Truth.
The end of war and strife.
For none can die more bravely—
Their splendid youth laid down,
And all the world not better be,
And Man not wear a Crown!

The generations yet unborn
Will pilgrim to this shrine,
With bowed heads and hearts uplift,
For such brave deeds as thine.
—Elizabeth Hope.

THE COAL SHORTAGE

The anticipated shortage in hard coal affecting thousands of Canadian homes may become a reality next winter if consumers delay their orders to the dealers till fall.

This is the opinion of railway men who say that while they are doing everything possible to assist Mr. C. A. Magrath, Controller of Canadian Fuel Supply, the co-operation of the consumer also is necessary to meet an undoubtedly serious situation.

The hard coal used in the east for the average furnace is imported from the United States, and the problem of supply is largely a problem of transportation. Owing to the shortage of labor and a very hard winter, the Canadian Railways last year faced a severe congestion of traffic, which was accentuated during the winter months by the demand for furnace coal.

In order to prevent if possible a similar condition next season, the railways are concentrating every effort on the supply of coal-carrying equipment. The Canadian Pacific, for instance, has decided to adapt at once and concentrate a considerable portion of additional freight equipment for coal haulage, increasing its capacity during the next six months by cars capable of hauling over a million additional tons during that period. It is withdrawing a large number of cars from other services, is adapting other types of cars, and has just put into force a new rule under which every foreign coal car is at once returned empty to the mines for fresh coal instead of being delayed by loading with return freight, although this move means added expense.

Within a few days the coal merchants will thus have prospect of rapid deliveries, but unless consumers co-operate by giving their orders to the merchants now for their winter supplies, then unloading cars quickly, the congestion experienced last winter will be accentuated and prices may rise to unheard of heights. Consumers are also recommended to be exceptionally careful in the use of coal, avoiding waste and burning wood where possible. The merchants themselves are also being asked to co-operate by having cars loaded to the maximum capacity and by promptly unloading the cars as soon as received, thus releasing them for further service.

The situation apparently is more serious in the East than in the West, owing to the accepted use of box cars in the latter territory. The supply of the open cars required in the east is, however, limited, and unless deliveries are spread more than they have been over the summer months by the recommended co-operation of consumers, the approaching winter will come with tragic force upon the Canadians in Ontario, Quebec, and the Maritime Provinces.

The coal, according to Mr. Magrath, is available. The cars, according to the railways, are coming—but will carry the coal only if the orders are known before winter puts on the brakes.

LEARNING LIFE'S GREATEST LESSON

GENERAL SMUTS ON RUSSIAN CONDITIONS.

An Extract from a Memorable Speech Which Shows a Remarkable Grasp of the Situation.

"Russia, even autocratic Russia," said General Smuts in London recently, "has played a great part in the history of the world; but I am sure there is a far greater future still before free, democratic Russia. But, of course, liberty, you know, is like young wine. It mounts to your head sometimes, and liberty of all the forces of the world requires organization and discipline. Autocracy is always organized; it is the very nature of autocracy to be organized; but liberty, freedom of government, is never properly organized. It goes by itself and its own internal impulse."

Lesson of Life.

At times like these there must be more than an idealistic impulse, the impulse of freedom, a noble sensation of freedom moving through a great people. There must be organization, and there must be discipline. I suppose that is what the Russian determination is learning to-day. They are learning to-day the greatest lesson of life—that to be free you must work very hard, struggle very hard.

"They have the sensation of freedom now the shackles and bonds are gone, the free heavens above, the free earth beneath, and they feel the joy of intoxication in this new experience; but they are living in a new world not governed by formulas, however clever they may be, but of brute force."

Where Liberty Cannot Live
"Unless that world is smashed their liberty itself cannot live. I am sure Germany is prepared to do anything. She will swallow all the nice formulas that the Russian democracy and any other democracy may devise. She will swallow Russia, too, if she can. She is clever enough to do that."

"She sits to-day over Belgium, Serbia, and most of Roumania, and 25,000,000 of Russians, and no word that official Germany has spoken leads us to infer that she will disgorge all these without being forced to do so. The official words spoken through the German Chancellor are to this effect: They are prepared to make peace, are longing for peace, but peace on the basis of German victories obtained. That is because they have bitten off more than they can digest. Such a peace will never happen. You may talk as long as you like of peace without annexations and indemnities, but remember you are talking to people who will swallow that formula and everything besides, and swallow you in the end, too, if you are not careful."

"There is no doubt it is a case of hard fighting. Germany, as Bismarck said, is founded on blood and iron, and not on formulas. What was brought about by blood and iron will have to be smashed in the same way. Not until then will it be possible for the Russian democracy, like all the other democracies of the world, to feel safety, security, and optimism once more."

"Whilst expressing the profoundest sympathy with our Russian comrades, I would say to them. Do not forget the others who are suffering. Do not forget Belgium. Belgium is crushed under the German heel to-day. But it was not of her choosing or her doing. The German Chancellor himself has admitted that it was a sin. It has been done, but they will not renounce the evil. I would appeal to our Russian brethren to remember Belgium."

Hardy Breeds of Cattle.

No breeds of dairy or beef cattle have as yet been found hardy enough to stand the winters in the interior of Alaska without excessive expense for food and protection against cold. As a result, milk sales for 50 cents a quart, and the beef that is consumed in the country consists almost wholly of cold storage meat brought from the outside. To remedy this situation as far as possible, the Alaska Experiment Station have undertaken to cross Galloway cattle with the Yak, an Asiatic ox much used by Mongolians, Tibetans, etc., for milk and meat as well as work. It is used for a beast of burden at altitudes of 12,000 feet or more. It is extremely hardy, pastures through the winter under the open sky in Siberia, and obtains feed from last year's dead grass dug from under the snow. Crosses of the Yak and ordinary domestic cattle are common in parts of Asia (for example in Turkestan) and have been found of much value.

The Power of Gasoline.

The power of gasoline is generally rated by the distance it will propel an automobile, says the Popular Science Monthly. But the same energy, if directed to other and more varied purposes, will milk 300 cows, bale four tons of hay, mix thirty-five cubic yards of cement, plow three-fifths of an acre of ground, or it will generate enough electricity to light a large farmhouse for thirty hours.

Gasoline locomotives have been invented in England that are safe to use in coal mines, their ignition taking place within tight boxes and their exhaust through water.

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