election of a new General the professed fathers and the rectors in each province as-semble and elect two professed fathers, who accompany the Provincial to the General Congregation, by which the head of the so-ciety is above: A NEW BLACK POPE. ciety is chosen. "The General," says Ignatius, "should possess a great habit of union with God and The Next Father General of a piety to serve as an example to his breth-ren. Charity and humility should specially the Jesuits Will Be Electcharacterize him. He should unite gentle-ness and love of discipline, never allowing ed Next Month. any relaxation of the rules, and yet show-ing himself full of compassion for his chil-dren even when obliged to reprove and cor-WHAT HIS DUTIES ARE. rect them. Absolutely Deprived of Property. "He must endeavor to be composed in his exterior, prudent in his words, wise in his Rigid Rules Laid Down by the Stern judgments. He can have no private purse or annual pension, and his personal ex-Soldier, Ignatius Loyola. A VERY DEMOCRATIC ELECTION. Prayer, Fasting and Corporeal Austerities That Precede It. DELEGATION TO BOME FROM AMERICA (WRITTEN FOR THE DISPATCH.) HERE is an old Italian legend that says there are three Popes reigning in Rome-the White Pope, the Red Pope and the Black Pope. The White Pope is the Pontifex Maximus of the universal church, Leo XIII., the two hundred and sixty-third successor of St. Peter. Of course, the division of his authority is only legendary, but in the tradition the "Red Pope" is the Cardinal Prefect of the Propaganda, the head of the missions of the Church all over the world, and hence a prelate of great influence. He is the executive chief of the Church in the United States, because in the administration of ecclesiastical affairs this is still re-

garded as a missionary country. The present Prefect of the Propaganda is the famous Pole, Cardinal Mieceslas Ledochowski. He might really be styled the Vice Pope, because he governs, assisted by his Council of Cardinals, one-third of the Catholic world, or those countries in which a hierarchy has been established during the past three centuries. The Pope has supreme jurisdiction, but the practical management of the Church in these countries is in the hands of this great congregation. For these reasons the popular title of "The Red Pope" (irom his dress) is given to its head. Death of the Reigning Black Pope.

The "Black Pope" (from his dress so called) is the Father General of the Jesuits. When Ignatius Loyola, a Spanish soldier wounded at the slege of Pampeluna, determined to found the Company or Society of Jesus, in 1534, he retained in its make-up or desus, in 1999, he retained in its indet-up many of the ideas of his military training. The Father General has supreme command for life over this corps d'dite of the church militant. He is the "Black Pope." The office is at present vacant, for the General, Very Rev. Anthony Anderledy, died on January 18 offer a term of five

died on January 18, after a term of five years. He was a very famous man. Born in Switzerland in 1819, he joined the



the second se	or annual pension, and his personal ex- penses may be increased or entailed by the society, to whose decision in this matter he is bound to submit. Toward the common possessions he holds the position of a trustee, and is bound to administer them not according to his own pleasure but for the general good of the order."	CHIOGGIA, ITALY, March 15.—The vast difference between acquired and natural knowledge, between cultivated and natural comprehension, between passion and emo- tion, between impulse and feeling. is never more apparent than when one turns from the contemplation of inland Italian peasant
the second se	Several assistants belonging to different nationalities, and, like himself, appointed by election, are assigned to the Father Gen- eral, and these he consults on matters re- garding the administration of the order. An admonitor is likewise elected, and his duty is to be a prudent counselor, ever at hand to advise on all that concerns the Gen- eral's private conduct. In an extreme case, which has never occurred, the	character to that of the Italian fishermen. The first has nature in his labor on the hillside with his focks, in the vineyard where he carries his hamper of ripe grapes from the vines to the presses, or driving his herbage or flower-laden donkeys through the sweet and sunny vales; but it is nature loving and protecting; nature without
	provinces of the society might elect deputies to depose the head of the order. The Father General has the ap- pointment of three examiners and no book can be published by any member without his approval or that of the censors dele- gated by him for the purpose. The most perfect and implicit obedience is owed to him by all the members; and he, in his turn, promises the same to the Pope. But, in order that he may be thoroughly ac- quainted with every department of the vast body intrusted to his guidance, he receives every three years from each province a cata-	menace or danger; and nature which gives the sense of peace that dulls apprehension and clothes responsibility with delight. This man is a creature of childish joys and childish passions; ot quick, hot temper and easily dried tears; of ardent and fleeting loves; of varied and variegated tastes; and of ambitions ending in gorgeous attire on festa days. In short, he is a very harlequin of wish, thought and feeling. You love him, but you fear him and never trust him; only through your knowledge of the logical sequences of his character.
	logue of its members, recording their names, ages, capabilities, talents and progress in virtue. An Organization of Perfect Discipline. At stated intervals each local superior must write to the provincial to give him an account of the house under his care; and at	A Creature of Nature's Frowns. But down from the sunny hillsides and away from the tender vales, over the salt- marshes and gray sands to the sea, you can in a few hours feel the change of natural
		environment which has been for centuries crystallizing the Italian fisherman into a creature of almost another race. The sky is as bright above him, but his hut is on the shifting sands. The sea is blue and tender beneath him, but anon it crushes what it cherishes. His joys mask eternal menace and his outbook is toward the infinite. The type of Italian fishermen common to poetry, painting and song has all the berib- boned, earringed and half brigandish look of the inland peasant; and the type exists, in port, convenient to pose for traveling dilettanti. But this sort of an Italian fisher- man is a creature who has had his origin in discontent with inland environ- ment or in the scourging of pov- erty in overcrowded towns. The real Italian fisherman is a creature of the shore and the sea with a centuries-inherited and deathless love for the wilderness, the danger, the loneliness and the very meagerness of his calling.
Í	Cardinal Mazella. longer intervals he, in his turn, sends a	He illustrates the influence of all that is grand and solitary in nature upon human character and physiognomy. The naturally

is assisted by consultors and by an admoni-tor named by the General, and each house is governed by a superior, who also has his consultors and an admonitor. The great law of obedience is the secret of the perfect discipline that pervades this vast organiza-

dignified, and their very smile and speech are grave and melancholy. Their home loves are deep, expressionless but deathless. Their grief under the ever recurring trage-The coming election of the Father General is, therefore, a very important event, and it will be conducted in the following democratic manner: At the death of Father dies of the sea is resigned and almost ex-pectant. And their hearts are ever undemocratic manner: At the death of Father Anderledy his office was taken by the vicar, Father Luis Martin, an accomplished theo-logian and writer of very high repute and an able administrator. He was born in Spain in 1846, and has been rector of the pectant. And their nears are ever un-swervingly devont and fervent, as if they came closer through their heritage of dan-ger to the very personality of all that which they deify. Every fisherman and every fisherman's male offerping and for a second the Jesuit Seminary at Salamanca and Provincial of Castille. He will summon, probably in May, a general congregation of the order male offspring a male outspring are forever consigned by themselves, each other and all that love them to the protection of the "Mother of God." Prayer, invocation and supplica-tion are ceaselessly on the lips of every soul that bides besides these Italian shores to meet at the German Hungarian College in Rome. The delegates to this convention will consist of the provincial and two associates from each of the 27 provinces of the society to get their living and their death by the all over the world. The associate delegate will be previously elected in each province at a convention made up of 50 members, in-The Italian fisherman has in his life none of the trivial concerns that occupy the hearts of the inland peasant. His hut, usually one room, with smoke-darkened ceiling and rough, shell-plastered walls and cluding the rectors and senior professed fathers. 'The provincials vote ex officio, as also do the Vicar General, the Procurator General, the secretary and the five "assist-ants" to the General. These latter are Father floor, is as austere in its appointments as a monk's cell. No ornament or decoration Grandidier, for France; Father Hoevel, for Germany; Father de la Torre, for Spain, and more gaudy than a cheap crucifix or tiny shrine or cheap engraving of the thorn-crowned head of Christ or the Mater Do-Father Whitty, a famous Irishman, for the English speaking provinces. Besides these assistants the curia of the General is composed of eight other professed fathers crowned need of Christ or the Matter Do-loross adorns its walls. There are rude goat-skin covered couches of dried sea-weed; the heavy benches along the wall, behind the heavier table with its sunken and ten coadjutors. The Delegation From the United States laces in which to set the bowls and mug The Provincial of the New York-Maryfor food; and stout chestnut pegs set in the mortar walls for nets and clothing. land Province is the Very Rev. Thomas J. Campbell, one of the ablest and most popu The Hearthstone of the Fisherman lar and respected of the younger generation of the American Jesuits. He was educated There are three-legged wooden stobls at at St. Francis Xavier's, afterwards taught there and at St. John's, Fordham, and was either side of the fireplace. This is simply on open space left in the inside wall crossed on open space left in the inside wall crossed by a stout iron rod, from which are sus-pended a half dozen pots by hooks, the fire of seaweed and driftwood being only lighted when required for cooking. There are often one or two windows which have no glass, but are covered with a bit of goat-skin or sail-cloth in inclement weather. The floor is covered with a generous layer made rector of that college seven years ago. The Provincial of the Missouri Province is the Very Rev. John P. Frieden, S. J., of St. Louis, and of the New Orleans Province, Very Rev. William Kennely, S. J. The six associates, who, with these three, will make up the full delegation from the United States, will be chosen in a few days. The floor is covered with a generous layer of sand which is ceaselessly being renewed When the different delegations are all as for cleanliness. The fisherman himself does no work sembled in Rome the election will be preceded by prayer, fasting and corporal au-sterities. All ambition for one self or shore beyond the mere care of his boat, if

PITISBURG DISPATCH	BUNDAI
step from her pedestal and join in a festa dance or procession as one of these shy, far- coast fisherwomen.	A RACE (
women of the Italian coast fishers is a double skirt, the lower portion of which	America's Rea Coal a
The upper skirt is often hooked up at the front and sides forming a sort of bag. In this they carry seaweed, fuel, fish or shell-	THE INGENU
use it is drawn up over the shoulders and back of the head as a sort of wrap. Mother, also wrap this skirt about their babes when	How the Facult System
The material is usually the coarsest white cotton, but if the women can possess any sort of holiday attire, the upper skirt may	SOME EXAMP
gracefully above the lower skirt and sur- monnted by a black cloth, or in rare in- stances a coarse velvet bodice. They rarely wear any foot covering and only such head covering as is supplied by the folds of the	One of the cha mind is a judic fact that a metho distant past inco lenge; for how a
	step from her pedestal and join in a festa dance or procession as one of these shy, far- coast fisherwomen. How the Fisherwomen Dress. The chief feature of the dress of the women of the Italian coast fishers is a double skirt, the lower portion of which hangs rather scantily about their ankles. The upper skirt is often hooked up at the front and sides forming a sort of bag. In this they carry seaweed, fuel, fish or shell- fish from the sands; and when not in such use it is drawn up over the shoulders and back of the head as a sort of wrap. Mother also wrap this skirt about their babes when retering to carry them for any distance. The material is usually the coarsest white cotton, but if the women can possess any sot of holiday attire, the upper skirt may be of scarlet, yellow or green, looped most gracefully above the lower skirt and sur- monnted by a black cloth, or in rare in- stances a coarse velvet bodice. They rarely wear any foot covering and only such head covering as is supplied by the folds of the

A Disposition Bred of Danger.

e forever

. Costume of the Coast People

upper skirt. Although the coastwise Italian fishermen differ from the Venetian lagoon fishers, who are a hereditarily distinct class, making their living by shoal-fishing and wading in than when one turns from tion of inland Italian peasant their living by shoal-fishing and wading in the mud for crabs and other shell fish, in being invariably deep sea fishers, still they are never fond of long voyages and rarely pass more than three or four nights on the water at one trip. They are fond, like the Chioggian fishers, of forming small fleets of five or six craft for fishing in one locality, and keeping one of their "bragozzi" with its crew, plying back and forth with the "catches," either directly to market with fresh fish, or to their own home ports with fish for curing. as nature in his labor on the his focks, in the vineyard es his hamper of ripe grapes to the presses, or driving his ower-laden donkeys through sunny vales; but it is nature protecting; nature without inger; and nature which gives eace that dulls apprehension fish for curing.

Women More Energetic Than Men.

ons; of quick, hot temper and The women do not shrink from even the tears; of ardent and fleeting The women do not shrink from even the roughest labor on the sea; and it is no un-common sight to see wite and daughters handling ropes, nets and sails, cleaning or sorting fish on deck or vigorously engaged in any necessary labor of the boat. Indeed, so far as my observation goes these fisher-men's wives are the propelling, active, in-domitable force of their lives and liveli-boad. d and variegated tastes; and ending in gorgeous attire on a short, he is a very harlequin ight and feeling. You love ear him and never trust him; your knowledge of the logical domitable force of their lives and liveli-hood. Their movements are vigorous and even virile, while the men are phlegmatic and slow. At the tiller, in unturling or reefing the sails, paying out or hauling in the nets, stowing away the fish, transfer-ring them from their craft to the market bragozzo, in hauling the boats upon the beach, in spreading and drying the nets, in fact, in every possible manner in which they labor beside or in advance of their husbands, they lay hold of their toil with a vigor and muscular vim exhibiting tremend-ous energy and torce. rom the sunny hillsides and tender vales, over the saltray sands to the sea, you can s feel the change of natural which has been for centuries the Italian fisherman into a nost another race. The sky is e him, but his hut is on the

The sea is blue and tender us energy and force. Their reach of arm and stride of leg are but anon it crushes what it is joys mask eternal menace Their reach of arm and stride of leg are remarkables and the muscles of their shoulders and breasts show extraordinary development. Studying them as I have often done when they were unconscious of ob-servation, their strange, gruff voices, their brawny frames, their immense brute strength, and, above all, their savage energy of action, has prompted the thought that if any future Masaniello were to leap from among the fisher folk with the dread shout of "Morte al mal governo!" the resistless liberator would prove an Italian fisher wo-man rather than an Italian fisherman. is toward the infinite. Italian fishermen common to ng and song has all the berib-ged and half brigandish look easant; and the type exists, peasant; and the type exists, enient to pose for traveling it this sort of an Italian fisher-creature who has had his content with inland environthe scourging of pov-rerowded towns. The real can is a creature of the shore th a centuries-inherited and for the wilderness, the danger, and the very meagerness of

Capacity for Food and Sleep.

Capacity for Food and Sieep. The lethargic quality of the men is illus-trated by their inordinate capacity for food and skeep and especially the latter. The moment the fisher arrives on shore his labors—which, if his quests have not been far and dangerous have already been per-formed largely by women aboard his bra-gozzo—are at an end. His banchetto or shore-coming feast is always ready, and he es the influence of all that is gozzo-are at an end. His banchetto or shore-coming feast is always ready, and he betakes himself to this, while his wife cares for boat, gear and fish, with the rapacity of a half-famished dog. I have often seen a single fisherman thus-eat at one sitting more than a quart of stufa or hodgepodge stew of shredded fish and vegetables, a pound of bread, and that dearest of all delicacies to or italian fisherman a polents or chesting melancholy of regard. They slowly turn upon you as if reluctant to leave the ob-jects of their endless contemplation. Their walk is measured and unconsciously an Italian fisherman, a polenta, or chestnut flour pudding bigger than his shaggy head with a goat's milk cheese as large as his

This done, he flings himself on his belly upon the floor of his hut or beside his habi tation in the warm sand of the shoreside street, and instantly becomes oblivious to

OF INVENTORS. sources Not More in Her and Iron Than in ITY OF HER PEOPLE. ty Might Be Developed by matic Education. LES OF IMPROVEMENT FOR THE DISPATCE.] aracteristics of an inventive

APRIL 10, 1892

sometimes make a model in wax, suspend it in a frame, and measure the effort needed to

in a frame, and measure the effort needed to propel it at various speeds through a trough of water. This is the practice of a firm of builders in Dumbarton, Scotland. Would it not be better to make a model in chalk and move it either through sand or through a mixture of water and sand? The form as modified by the abrasion might suggest the figure best suited to move with least resist-ance as a ship.

The Education of Ingenuity.

As we observe ingenuity at work in these and kindred ways, doing old tasks with new economy, or conferring gifts distinctly new upon mankind, the question arises: Can this faculty of invention be educated? Of course in its core and essence it proceeds from an incommunicable somewhat born with a man; but envent educated whether a blight it

Can't Create Edisons and Beils,

ance as a ship.

cious skepticism. The very od or a process dates from a cites such a mind to a challenge; for how at a time of scant knowledge and limited experience was the best way of doing anything to be discovered? Sometimes improvement takes the form,

not of abandoning some old and useless element in construction, but in doing exactly the opposite of an established practice. When buildings were first heated by steam the colls of piping were placed at the floor, since warm air, it was said, ascends. So it does. But by a new way, which finds special favor in factories, the coils are attached not to the floor but to the ceiling. Here heating by radiation is found pleas anter than heating by currents of warm air

sent up from an iron surface. Begides, space is saved, and rubbish cannot gather bout the pipes, with liability to burst into flame For the most part, however, the labors of inventors do not lie in the by-paths such as hese, but in the highway, where a familiar nstrument or machine receives a transforming addition, as when the carbon translitter raised the message of the telephone from a whisper to loudness; or when the grooved needle arm which ties up a sheaf

a sedentary occupation.

surface; rust attacks it. Yet until our day inventors have never thought of making the balance better except in using harder metal for its knife, or in more carefully shaping the angle of that knife. In the scale which Mr. Albert H. Emery of Stamford, Conn., has devised, he has dismissed the knife edge and all its liability to harm. In its stead he uses a short piece of thin, well-tempered steel, from which the cross beam is suspended. The principle is the same as that long ago adopted in pendulum clocks, where the upper part of the pendulum wire is flattened out so thin that the bob moves to and fro with scarcely any friction-certainly with much less than if it were hung from one surface rubbing on another. In an Emery balance, weighing 200 pounds, one portion in 2,350,000 of its load has moved the scale. The best performance of a knife-edge balance, when new, has never shown more than one-thirteenth this re-sponsiveness. And the Emery scale has the further advantage of not becoming im-paired in use. Its inventor has stood upon the pans of a small balance and moved his feet as if he were working a treadle. On his dismounting the scale has proved to be as accurate as before. Applied to his test-ing machine Mr. Emery's thin steel plates enable him to register with the utmost pre-cision the strain required either to rupture a stout steel bar or to sever a horse hair. The Oil Can Discarded.

a stout steel har or to sever a horse hair.

The Oil Can Discarded.

As some 200 patents testify, a favorite attempt of inventors has been to discover means of abolishing the need for lubricanta. The aim has been to find for the rubbing



madin WRITTEN FOR THE DISPATCH BY HENRY JAMES.

SYNOPSIS OF PART I.

In Part I., published last Sunday, the artist who tells the story describes the arrival of Mr. and Mrs. Monarch, who, being reduced in finances, apply as models for society illus-trations. Miss Churm, the artist's regular model, is also introduced. She is a go-easy miss, while the Monarchs are very staid and stiff in their demeasor.

PART IL.

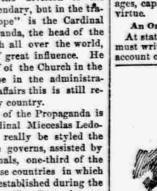
incommunicable somewhat born with a man; but cannot education do much to elicitit, in-form it, direct it to needed work, keep it, from wasting itself on what has already been done, and from attempting the sheerly impossible? Undoubtedly, yes. And, al-though we have as yet no distinctive college of invention as we have institutes of tech-nology and academies of art and design, wifts of invenuity are not newleted in our Monarch. Her husband came with her, to be useful if necessary—it was sufficiently clear that as a general thing he would prefer to come with her. At first I wondered if of invention as we have institutes of tech-nology and academies of art and design, gifts of ingenuity are not neglected in our schools. It has become clear to the edu-cators of this country that the most valu-able asset America possesses is neither her iron ore nor her wheat harvest, but the dormant capacity of her children for inven-tion, as for other fields of human service. To-day educational methods are, therefore, more and more addressed to a pupil's original faculty. A teacher of the best type does not pour information into the passive mind of his scholars, but having given a child the elements of knowledge, leaves him to take the next step by an independent effort of reason or judgment. One of the pioneers in this creative view of education was William George Spencer, a distinguished teacher, the father of Her-bert Spencer. When, for example, he taught geometry, he did not take his classes through Euclid along the well-traveled paths, but set for his pupils problems of his new education is that just as a pupil gets a better idea of a wheel and axle by making and using them than by hearing about them, or even by seeing pictures of them, so does he get a firmer grasp of the geography of America, when he outlines the contour with his own hands, tracing out the courses of its great rivers and marking the sites of its chief cities. Can't Create Edisons and Beils. Nohedvis imagines that any scheme of eduthis were for "propriety's" sake—if he were going to be jealons and meddling. The idea was too tiresome, and if it had been confirmed it would speedily have brought our acquaintance to a close. But I soon saw there was nothing in it, and that if he accompanied Mrs. Monarch it was (in addition to the chance of being wanted) simply because he had nothing else to do. When she was away from him his occupation was gone-she never had been away from him. I judged, rightly, that in their awkward situation their close union was their main comfort, and that this union had no weak spot. It was a real marriage, an encourage ment to the hesitating, a nut for pessimists to crack. Their address was humble (I re-member afterward thinking it had been the only thing about them that was really pro-fessional), and I could fancy the lamentable lodgings in which the Major would have

been left alone. He could bear them with his wife, he couldn't bear them without her. He had too much tact to try and make himself agreeable when he couldn't be use ful; so he simply sat and waited, when I was too absorbed in my work to talk. But I liked to make him talk-it made my work,

Can't Create Edisons and Beils. Nobody imagines that any scheme of edu-cation, however wise, can implant the in-tuitions, the resourcefulness of such men as Edison or Bell. But it can smooth the path of the most original mind, and in the vears of mental plasticity call out the best, because the individual powers of a youth, who otherwise would earn the stigma of dull-ness, are really chargeable to the teachers who neglected to find out what was in him and draw it out at the right time. when it didn't interrupt it, less sordid, less special. To listen to him was to combine the excitement of going out with the econ-omy of staying at home. There was only one hindrance; that I seemed not to know any of the people he and his wife had known. I think he wondered extremely, ness, are really chargeable to the teachers who neglected to find out what was in him and draw it out at the right time. A plan of education that develops the creative faculty which every scholar pos-sesses in some measure will, of course, be most gainful where that faculty exists in a notable degree. From a generation of young people educated to respect and un-fold their individual powers there may be expected a desided increase in the pronor. astonishing-he was a mixture of the sta-tion master and the ornithologist. When he expected a decided increase in the propor-tion of inventors of mark, even if the men of irrepressible genius remain as few as ever. For now that manual training is to couldn't talk about greater things he could talk cheerfully about smaller, and, since I couldn't accompany him into reminiscences of the fashionable world, he could lower the the fore not only will suggestions for exercise of ingenuity come thicker, but the power to test their validity will be com-moner. And many a capital idea has been conversation without a visible effort to my level So earnest a desire to please was touching born only to die from lack of skill to carry it in a man who could so easily have knocked one down. He looked after the fire and had An excellent example of what can be done one down. He looked after the fire and had an opinion on the draught of the stove, with-out my asking him, and I could see that he thought many of my arrangements not half clever enough. I remember telling him that if I were only rich I would offer him a salary to come and teach me how to live. Sometimes he gave a random sigh, of which for the education of ingenuity is afforded in the New York College for Training Teach-ers, where the impulse of inventive minds is seed corn to spring up a hundred-fold in schoolrooms throughout the land. Here the men and women who are being prepared for the teaching office are shown how imporfor the teaching once are shown how impor-tant principles of mechanics, physics, physiology, even, can be illustrated by home-made spparatus quite within the skill of anyone to construct. A valve which permits the escape of air and water in pumps and resists their inflow is made by imple sufficient the state of the the essence was: "Give me even such a bare old barrack as this and I'd do something with it!" When I wanted to use him he came alone-which was an illustration of the superior courage of women. His wife could bear her solitary second floor, and she pumps and resists their innow is made by simply cutting a short slit lengthwise in a bit of rubber tubing. A tumbler coated with a strip of tin foil becomes a Leyden jar. A dynamo is built by joining a com-mon steel magnet to a series of small elecwas in general more discreet, showing by various small reserves that she was alive to the propriety of keeping our relations markedly professional-not letting them slide into sociability. She wished it to re-main clear that she and the Major were emtro-magnets fastened to the spokes of a ployed, not cultivated, and if she approved of me as a superior, where I could be kept Illustrating Action of the Lungs. Instrating Action of the Lungs. The process of breathing is illustrated with a lamp chimney, a little bag of thin leather, and a piece of rubber cloth, such as dentists use. The lamp chimney stands for the chest cavity. Its upper end is tightly closed by a stopper, from which hangs the little tag, partly filled with air, represent-ing the lungs. Over the lower end of the chimney the rubber cloth is securely tied, to stimulate the disphragm. When the in my place, she never thought me quite good enough for an equal. She sat with great intensity, giving the whole of her mind to it, and was capable of remaining for an hour almost as motionless as if she were before a photographer's lens. I could see she had been photographed often, but somehow the very habit that often, but somenow the very habit that made her good for that purpose unfitted her for mine. At first I was extremely pleased with her ladylike airs, and it was a satisfac-tion, on coming to follow her lines, to see how good they were and how far they took one. But after a few times I began to find her mither invitationally stiff. is what I to stimulate the diaphragm. When the ubber is seized between finger and thumb rubber is seized between finger and thumb it enlarges the space in the chimney, and the little lung bag becomes inflated. When the rubber is pushed up the bag collapses, as the lungs do in the act of exhalation. Prof. Woodhull, who has devised these and other ingenious models, has received from his students additions to the second from her rather irritatingly stiff; do what I would with it my drawing looked like a what I would with it my drawing looked like a photograph or a copy of a photograph. Her-figure had no variety of expression—she herself had no sense of variety. You may say that this was my business, was only a question of placing her. I placed her in every conceivable position, but she man-aged to obliterate their differences. She his students additions to them of no little merit. He finds that not only is inven-tiveness cultivated by model making, but that where ingenuity does not exist the building of apparatus has great educational importance. A student takes more inter-est in a principle of mechanics, physics, or physiology, when he embodies it in a model was always a lady, certainly, and, into the bargain, was always the same lady. She was the real thing, but always the same than is possible if he only reads about it or sees somebody else illustrating it in the was the real thing, but always the same thing. There were moments when I was oppressed by the serenity of her confidence that she was the real thing. All her deal-ings with me, and all her husband's, were an implication this was lucky for me. Mean-while I found myself trying to invent types that approached her own, instead of making In this college, as in other centers of the new education, there is something in the atmosphere more inciting to original work than any special feature to be observed in a classroom. The students, throughout the her own transform itself-in the clever way whole course of instruction, are impressed not with the perfection, but with the inthat was not impossible, for instance, to poor Miss Churm. Arrange as I would and take the precautions I would, she always, in

It was for the elucidation of a mystery in one of these works that I first tried Mrs. Monarch. Her husband came with her, to imitation. Her usual appearance was like a curtain, which she could draw up, at rea curtain, which she could draw up, at re-quest, for a kind of regular performance. This performance was simply suggestive; but it was a word to the wise—it was vivid and pretty. Sometimes, even, I thought it, though she was plain herself, too insipidly pretty; I made it a reproach to her that the figures drawn from her were monotonously (betement, as we used to say) graceful. Nothing made her more angry; it was so much her pride to feel that she could sit for characters that had nothing in common with characters that had nothing in common with each other. She would accuse me at such moments of taking away her "reputation." It suffered a certain shrinkage, this queer quantity, from the repeated visits of my new frieads. Miss Churm was greatly in new friends. Miss Churm was greatly in demand, never in want of employment, so I had no scruple in putting her off occasion-ally, to try them more at my ease. It was certainly amusing at first to do the real thing—it was amusing to do Major Mon-arch's trousers. They were the real thing, even if he did come out colossal. It was amusing to do his wife's back hair (it was so mathematically nest), and the particular "smart" tension of her tight stays. She lent herself especially to positions in which the face was somewhat averted or blurred; she abounded in ladylike back views and profil perdus. When she stood erect she took naturally one of the attitudes in which court painters represent queens and princourt painters represent queens and prin-cesses, so that I found myself wondering cesses, so that I found myself wondering whether, to draw out this accomplishment, I couldn't get the editor of the *Cheanside* to publish a truly royal romance, "A Tale of Buckingham Palace." Sometimes, how-ever, the real thing and the make-believe came into contact, by which I mean that Miss Churm, keeping an appointment or coming to make one on days when I had much work on hand, encountered her im-noming virals. The encounter was not much work on hand, encountered her im-posing rivals. The encounter was not on their part, for they noticed her no more than if she had been the housemaid, not from intentional loftiness, but simply be-cause as yet, professionally, they didn't know how to fraternize, as I could guess that they would have liked to, or at least that the Major would. They couldn't talk about the omnibus-they alwars walked. about the omnibus-they always walked; and they didn't know what else to try-she

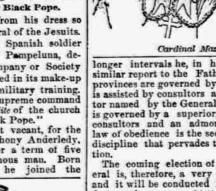
19





Cardinal Mazella. Ionger intervals he, in his turn, sends a similar report to the Father General. The provinces are governed by a provincial who is assisted by consultors and by an admoni-

tion



with a yard of twine was combined with the harvester-the last step in making farming

Eclipse of Knife-Edged Scales.

Take for example the ordinary weighing alance. The cross beam carrying the scale pans vibrates on a knife edge. This knife edge is subject to serious injuries which impair its accuracy. The sharper it is the sooner does usage make it dull; dirt grinds its surface; rust attacks it. Yet until our day inventors have never thought of making the

Very Rev. Thomas J. Campbell, S. J.

order in 1838. Domestic political troubles drove him to the United States in 1845 and he finished his studies in St. Louis, where he was ordained a priest. For several years he was a missionary in the diocese of Green Bay, Wis., and then returning Europe his great abilities raised him to the highest office in the order of which he was a member and as the old tradition justly ranks it one of the most influential in the whole Church. His American experience was of very signal service in the success of his administration. Now his successor is to

be enosen, probably in May. The Company or Society of Jesus at present consists of 12,972 members, divided into 5,751 priests, 3,713 scholastics and 3,508 lay brothers. They make five groups which are themselves subdivided into 27 provinces. The Italian group is composed of the prov-inces of Roma, 397 members; Naples, 312; Sielly, 247. Turin, 453; Venice, 355, making a total of 1,764.

The English Speaking Jesuits,

The seven English speaking provinces are England, 685; Ireland, 267; Maryland-New York, 564; Missouri, 403; Canada, 240; New Orleans, 195, and Zambesi, making 2,308 in all. All these provinces have certain mis-Fions in foreign countries. The stage and novel crypto-Jesuit living

outside the regular houses of the order and engaged, "in disguise," in secular pursuits, is nonsense. Equally absurd is talk about "iemale Jesuits." There . never was woman in the order or in any way affiliated with it. The Jesuit, on entering the order. passes two years in a novitiate, devoting all that time to spiritual exercises. He then takes the three simple vows of poverty, chastity and obedience. At the end of this term there is a period of five years of study in the languages, rhetoric, philosophy and physical science. After a satisfactory ex-mination the young scholastic is sent out to teach for five or six years in the colleges

of the society. He next devotes four years to the study of theology and he is then ordained a priest if his examination is satisfactory. A sec-ond novitiate is then entered into, lasting about a year, in which the time is given to preaching, meditation and prayer and the altivation of the different virtues. When all the time of probation is passed the candidate takes a fourth yow, by which he binds himself to unreservedly as missionary wherever go unreservedly as missional the Pope wishes to send him. uits are called the "professed fathers." It is from this class that the General, the pro-It vincial professors of theology and superiors of the various houses of the order are taken.

An Office That Lasts a Lifetime

There are two other classes of membersthe "spiritual coadjutors," who make up the bulk of the members who teach or do pastoral work, and the "temporal coad-jutors," or lay brothers, to whom the manusl and minor duties are assigned. All wear the same dress and follow the same exterior manner of life. The General holds the office for life. All the officers under him are chosen every three years. They are named by the General to save trouble and intrigue among the members. The rules governing the society are very detailed, precise and vigorous. They are called the "Constitution of the Society," and were drawn up by Ignatius Loyola himselt. The General is the head of the Society of Jesus, but while investing him with clearly defined and supreme authority Ignatius multiplies precautions to prevent the power from degenerating into despotism. On the

and a start of the start of the start of the start of the

others is forbidden by the severest ecclesiastical penalties. The election is made after a general recep

tion of the holy eucharist in communion, each vote being deposited in the name of Jesus Christ before a crucifix. The General may be of any nationality and is not al-lowed to refuse the position to which be to refuse the position to which he has been elected. So far among the gener there have been 11 Italians, 5 Span iards, 3 Belgians and 1 German, Swiss, Pole, Bohemian and Hollander, 24 in all. The Jesuits are not allowed to accept ecclesiastical dignities. The professed fathers take an oath not to accept any bishrare he opric or other post of honor in the Church unless at the express command of the Pope. Hence the small number ever promo well-to-do, a goat or two will be among the Hence the small number ever promoted from their ranks. At the first sign of any danger of this kind prayers are ordered all over the society to prevent it. The most notable honor lately received by a Jesuit was perhaps the elevation to the College of family possessions, and then the little ones will have their mug of milk and the older ones their balls of rich cheese for the holipadre.

Cardinals of one of their most fan theologians, Father Camillus Mazella.

A Famous Son of the States. He is a citizen of the United States, and enjoys the distinction of being its resident representative in the College of Cardinals at Rome. Cardinal Mazella was born near Naples, in Italy, in 1833, and with his twin brother Ernest and a younger brother, Peter, devoted himself to the Church. He oined the Jesuits in 1857. When they were expelled from Naples in 1860 by the revolutionary government he went to Lyons to teach theology, and in 1867 was sent here to the great house of studies which the society maintains for its members, at Woodstock, Md.

Here he was made professor of dogma, vians, his whole aspect irresistibly suggests a primitive Greek on the classic loneliness and published four luminous and exhaust. ive volumes of his course of scholastic thelogy. It was during his stay there that he of his own loved shores. became an American citizen. In 1878 he The women are finer, freer, simpler. was recalled to Rome to take the place of Father Franzelin, who had been made a Cardinal. Much to the regret of his fellow rude implements of a thousand years ago. Their labor, though incessant-for when not caring for the harvests of the sea, they are mending nets, gathering and drying members and against his own wish, the Pope made him a Cardinal also on June 7, and he was thus lost to the order, of which he had been so long been one of the seaweed, or coaxing some meager vegeta-tion from tiny rock-bound garden patchesbrightest ornaments. He resides at the Gregorian University, of which he is the Preis in the salt spray and never stilled breezes

fect of Studies. The "House of Studies," at Woodstock, Md., is one of the chief educational institu-tions of the order in the world. Only members are trained there. The present num-ber of students includes 50 in the class of philosophy and 90 in the class of theology. B. J. ail worldly concerns in sleep: and he will sleep from 12 to 20 hours without changing his position. Often have I come into these little fishing villages, and, while all was bustle and activity among the women, found a score of men thus disposed in doorways or half burrowed in the sand, until it seemed as though these sea-roving sluggards were all lying in a hopeless drunken stupor, or were merely the bodies of dead fishermen

ast up from the deep. They Have Their Superstit

Several odd objects are carried by the Italian fisherman as necessary to good luck in general. A tiny paddle fashioned from a chestnut tree that has been struck by lightning has unusual power for good, although I never could secure the reason for their faith. The figure of a little humpbacked man called a gobbo, a globe surmounted by a cross and a cock with a star in its beak are frequently painted upon the sails. All of these possess fortuitous in-fluences. Another favorite good luck token is a little brass orcia or cruet of oil. It is kept carefully sealed and burnished, and a few drops are cast upon the waters if the fish are not sufficiently plentiful, or if a storm threatens the interruption of their work. But most essential of all things to these toilers of the sea is a muscino, or kitten. No bragozzo can put out from the land without this, and if such mischance hould happen, all on board would surely b

lost. The blind faith of these folk in the efficacy of blessed and holy relies to appease the wrath of the sea is indeed pathetic. Many keep themselves in a state of utter impoverishment in providing necessary amulets and charms. Not only is the fisher man's person covered with these, but his he is so fortunate as to own one. The mo-ment his boat is sighted by the women boat must also possess all possible saving power through these religious appliances. ment his boat is signted by the women folk, they all run pellmell to the wa-ter's edge to take the sails and gear with the nets and fish and the wet clothing, drag-ging them with all speed to the hut where the fish are cleaned and salted and packed in layers with seaweed, for market or home commution. Their field condities of this Should some great storm arise and genuine danger come, one by one these appeasitive objects are cast upon the waves with a faith that is positively subline. Meanwhile his wife ashore, possessed of the same implicit and pious confidence, gives her most pre-sions rolies to the sea that her husband may onsumption. Their food consists of this consumption. Their food consists of this fish, usually cut, in small pieces and boiled in a sort of thick soup with such simple condiments as their slender means can pro-cure, black bread and cheap sour wine. On cious relics to the sea that her husband may come safe to land. And I have no doubt that when fatal disaster comes as it always does, this man sinks into the silences becure, black bread and cheap sour wine. On rare, holiday occasions they may have onions roasted in the ashes, maxaroni dressed with olive oil or tiny dough cakes fried in oil something like a doughnut. If unusually neath the tempest with his last spark of vital consciousness an undimmed flame of trust and faith. EDGAB L. WAKEMAN.

BRANDY SMUGGLED IN FLOWERS.

The Ingenious Device Discovered by French Customs Officers.

day feast, or for offerings to the village The French Customs Officers who are stationed at the gates of Paris to guard against exciseable goods entering without paying In costume the Italian fisherman has no resemblance to his inland brother. He the duty have occasionally to deal with He very ingenious attempts at smuggling. Last wears a sort of Greek-like tunic, sleeveless week, for instance, an attempted traud was and reaching barely to the knees. This is brought closely to his body with a broad leather belt, in the inside of which he carlaid bare which goes to show how fertile the contrabandists are in expedients. At ries his rosary, his scapular or perhaps some holy relic for protection at sea. Rude sandals of tough fish or goat skin are bound the Menilmontant Gate a man in charge of a pony cart, in which were three large wooden boxes, attempted to pass the barriers. "Have you anything to declare?" asked one to his feet with thongs that are crossed around the leg to the knee. His hair and beard are seldom cut or trimmed. It often

"Nothing," said the man, "unless Gov-ernment has put a tax on cemetery wreaths," and as he spoke he drew the lid haps a cotton kerchief bound around his head with the ends floating in his hair, which is sometimes as blonde as a Scandinaoff one of the boxes, revealing a number of the wreaths and crosses of artificial flowers so common in French burying grounds. The man was about to pass on when some-thing about him aroused the suspicions of the abiut official. He took the cover off one the chief official. He took the co ver off one of the boxes, and admired the beauty of the flowers and their remarkable fidelity to nature. Lifting one casually in his hand, he found it was remarkably hand, he found it was remarkably heavy, and closer examination showed that when stripped of flowers and moss it was a tine case filled with the finest brandy. The rest of the contents of the boxes were of the same nature, and were at once confisated. As frauds of the kind are severely of the sea. Both women and men are often seen in unlished by the Parisian authorities, the ngenious inventor of the trick will prob-bly be allowed leisure enough in Mazas to the streets of the larger villages on market days; but always huddled in groups by design something novel.

themselves, viewing askance the treasures of shop and stall and taking no part in the gay and busy life about them. One would as soon expect to see a marble Aphrodite, War allow bedbugs to keep you awake at tight when a bottle of Bugine will destroy hem all in half a minute. 25 cents, surfaces of machinery a metal so smooth as to need no oiling. As long ago as 1827, Jacob Perkins, an American domiciled in England, devised an engine in which steam at a pressure of 800 pounds to the square inch was used. This pressure meant a tem-perature so high as to char the lubricating oils. Perkins overcame the difficulty by to experiment.

oils. Perkins overcame the dimedity by making the parts in contact of an alloy which, working with less friction than iron oiled in the ordinary way, required no lubrication. Through lack of durability, the general fault in alloys of this class, the Perkins compound failed to do away with the oiler. The serm of perment suc the oil can. The gem of permanent success was to come at a later day, when powdered black lead was first employed to reduce the friction of machinery. This metals puts as smooth a polish on an arle or a bearing as on the surface of a store. On introduction it was soon widely used, sometimes by itself, sometimes stirred into oil. But a difficulty with the mixture was that it would not stay mixed—a bond of some kind was needed. In seeking this bond Mr. P. H. Holmes, experimenting in a machine shop at Gardiner, Me., tried cot-ton, wool and cloth in turn, without suc-cess. At length, as he was in a country producing wood pull on a large scale it producing wood pulp on a large scale, it occurred to him to blend the black lead with moist pulp and compress the mass.

He was now seeking to make the metal serve as a material for bearings instead of a ubricant applied externally to bearings. In the process to which he came after i In the process to which he came after a good many trials he found the best propor-tions to be one part of pulp to ten parts of black lead, or graphite, the compound being squeezed in a mold suitably perforated for drainage. After being dried by air, the bearing is saturated with linseed oil and thoroughly back horoughly baked. Perfect if Not So Brittle.

In its finished state it looks like graphite but is so strengthened that it can bear se-vere pressure and be used without oil or attention. Though strong, it is somewhat brittle, and, like anti-frictional alloys, is secured in an iron or steel casing. It has done excellent service on wagon shafts, the bearings of cotton machinery, and the ten-sion pits of cable railroads. On the axles of cars its fails, the severe blows struck in rapid locomotion—especially on a rough track—being too much for it. Experiments are in progress which may result in giving this fiber-graphite, as it is called, more strength. Even in its present form it fur-

A new and advantageous form in which metal or other constructive material is dis-posed may lead to a decided advance in manufacture. A strip of paper rolled as a spiral tube, as in making a lamplighter, will illustrate a recent invention of much im-portance to the engineer. Shut one end of the paper tube firmly and blow in the other. ou will tighten the seams, and the paper You would burst before any air could leak out

between the edges in contact. The prin-ciple is embodied in steel tubes of a new strength and lightness. Tubes of older patstrength and lightness. Tubes of older pat-terns are made in three ways: By casting, which turns out a mass of metal much too heavy for the strength required of it; by riveting a rounded strip, which presents surfaces easily attacked by rusts, and by lap-welding, in which a metallic ribbon is raised to a high temperature, wound around a core, and welded along a point running in the direction of the length of the tube. The last is the best of the three processes, but it last is the best of the three process

A Marvelous Kind of Pipe.

In order that the metal may retain a welding heat while being shaped and united, it has to be five times thicker than is otherwise necessary; and this not only wastes metal but adds to the cost of transportation and handling. Improvement became feasi-ble when gas flames instead of furnaces were adopted to produce a welding heat. Then the longitudinal seam could be abolished for spiral form. In old shapes of gas and steam

has a serious drawback.

pipes the seam tends to open under pressure; with the new pipe it tends to close. An imperfectly joined spiral tube which has

one's privilege to wrest something, be it little or much, from the limitless Unknown? GEORGE ILES.

A SICK BOOM BEVERAGE. a personage.

Mrs. Ewing Recommends a Sort of Fermen tation of Milk and Sugar.

Koumiss is a very refreshing, slightly stimulating, non-intoxicating beverage made of milk; highly commended by physicians of eminence, writes Emma P. Ewing. Dissolve about two-thirds of a half ounce cake solve about two-thirds of a half ounce cake of compressed yeat and two tablespoonfuls of granulated sugar in a quart of warm milk. Pour that into a bottle where the temper-ature does not exceed 60 degrees. Let it remain at that temperature from eight to ten hours; then lay it on its side in an ice chest or refrigerator, and in from six to ten hours it will be ready for use. Bottles that morehave self-fastening stoppers are the most convenient to use in making koumiss; but the corks can be fastened in without a possible presumptuous young modern searcher; I held that everything was to be searcher; I held that everything was to be sacrificed sooner than character. When they averred that the haunting type in question might easily be character, I re-torted, perhaps superficially: "Whose?" It couldn't be everybody's, it might end in be-ion schere's. but the corks can be fastened in without much difficulty with either twine or wire. I have made very excellent koumiss quite frequently by letting the bottles when filled stand from 18 to 24 hours on the cellar floor stand from 18 to 24 hours on the cellar floor where the temperature did not exceed 55 degrees; then laying them on their sides in the same spot and letting them remain un-disturbed from 24 to 48 hours. ing nobody's. After I had drawn Mrs. Monarch a dozen times I perceived more clearly than before that the value of such a model as Miss Churm resided precisely in the fact that she

wasn't interested in good trains or cheap claret. Besides, they must have felt-in the air-that she was amused at them, secretly derisive of their ever knowing how. She was not a person to conceal her skepti-eism if she had had a chance to show it. On the other hand, Mrs. Monarch didn't think her tidy; for why else did she take pains to say to me (it was going out of the way for Mrs. Monarch) that she didn't like lirty women? One day when my young lady happened to be present with my other sisters (she even dropped in, when it was convenient, for a chat), I asked her to be so good as to

for a chat), I asked her to be so good as to lend a hand in getting tea—a service with which she was familiar, and which was one of a class that, living as I did in a small way, with slender domestic resources, I often appealed to my models to render. They liked to lay hands on my property, to break the sitting—I made them feel Bobreak the sitting-I made them feel Bo-hemian. The next time I saw Miss Churm hemian. The next time I saw hills churm after this incident she surprised me greatly by making a scene about it—she accused me of having wished to humiliate her. She had not resented the outrage at the time, but had seemed obliging and amused, enjoying the comedy of asking Mrs. Monarch, who

Can't 1 Be Useful Here?

sat dull and silent, whether she would have cream and sugar, and putting an exagger-ated simper into the question. She had tried intonations—as if she, too, wished to pass for the real thing, till I was a fraid my other visitors would take offense.

Oh, they were determined not to do this; and their really touching patience was the and their really touching patience was the measure of their great need. They would sit by the hour, uncomplaining, till I was ready to use them; they would come back on the chance of being wanted, and would walk away cheerfully if they were not. I used to go to the door with them to see in what magnificent order they retreated. I tried to find other employment for them—I introduced them to several artists. But they dio't "they" for reasons I could an my pictures came out too tall-landing me in the dilemma of having represented a fascinating woman as seven feet high, which, out of respect perhaps to my own very much scantier inches, was far from my idea of such they didn't "take," for reasons I cou a personage. The case was worse with the Major-no-thing I could do would keep him down, so that he became useful only for the repre-sentation of brawny giants. I adored variety and range, I cherished human acci-dents, the illustrative note; I wanted to characterize closely, and the thing in the world I most hated was the danger of being ridden by a type. I had quarrelled with some of my friends about it-I had parted company with them for maintaining that one had to be, and that if the type was beautifal (witness Raphael and Leonardo) the subjection was only a gain. I was neither Leonards nor Raphael; I was only a possible presumptuous young modern they dida's "take," for reasons I could ap-preciate, and I became conscious, rather anxiously, that after such disappointments they fell back upon me with a heavier weight. They did me the honor to think that it was I who was most their form. They were not picturesque enough for the painters, and in those days there were not

so many serious workers in black and white. Besides, they had an eye to the great job I Besides, they had an eye to the great job L had mentioned to them—they had secretly set their hearts on supplying the right essence for my pictorial vindication of our high national novelist. They knew that for this undertaking I should want no cos-tume effects, none of the frippery of past ages—that it was a case in which every-thing should be cotemporary and satirical, and, presumably, genteel. If I could work them into it their future would be assured. for the labor would, of course, be long.

for the labor would, of course, be long. One day Mrs. Monarch came without her husband-she explained his absence by his husband—she explained his absence by his having had to go to the City. While she sat there in her usual anxious stiffness there came at the door a knock, which I imme-diately recognized as the subdued appeal of a model out of work. It was followed by the entrance of a young man whom I easily

completeness, of science. And what more valuable lesson can there be that it is every

thers the economy of power in a vast vari-ety of machinery, promotes cleanliness, and, what is of most importance, removes the chief cause of fire in factories.

workship.