

CONDENSED NEWS
OF INTEREST TO ALL.

Scottsbluff is to have a new creamery.
Work on the new Masonic Temple at Anselmo is progressing rapidly.
Citizens of Anselmo are making an effort to secure a Carnegie library.
The city of Alliance will hold a market week October 25 to 30.
Norfolk will hold its fall festival September 30, October 1 and 2.
Crop conditions are reported satisfactory throughout Gage county.
Work has begun on Schuyler's \$40,000 high school building.
Dr. E. S. Benton is building a \$10,000 residence at Oakland.
The town of Laurel voted \$12,000 for an electric light plant.
Work on Anselmo's new high school building will commence about Nov. 1.
Work has commenced at Allen on the erection of a new \$3,000 parsonage.

Citizens of Gandy are laying plans for a waterworks and electric light plant.
The Central Granaries Co., of Lincoln, will build a \$40,000 elevator at Holdrege.

Joseph Pendhain, a Geneva aviator, was killed while making a flight at Plainview, Texas.

Products from Lincoln county won more prizes at the state fair than any county in that district.

Hunters in Lincoln county report the prairie chickens are fewer this year than ever before.

Bert Gibson of Broken Bow was severely injured when his automobile turned turtle near Westerville.
Keeping a phonographic record of voices of the pastors of the Hastings churches is a new innovation in that city.

A Swedish song festival on the order of the German Raengerfest, is to be held in Omaha some time next June.

The enrollment in the Oxford High school was so large this year it was found necessary to hire another teacher.

Omaha was chosen as the next meeting place by the Women's Temperance Union at its convention in Grand Island.

Nebraska State Federation of Labor at its annual convention in Omaha, selected Fremont as the 1915 meeting place.

By defeating Wisner in an exciting ten-inning ball game recently, Pender claims the championship of north-eastern Nebraska.

Sixty cars are counted upon for the auto floral parade during Ak-Sar-Ben week in Omaha. The parade will take place October 5.

The Cedar County State bank, the newly organized bank in Hartington, has opened for business. It is capitalized at \$25,000.

The Fremont city council has placed an order for a tractor engine to be used to supplant horses in grading Fremont streets.

By order of the city commissioners Omaha street cars will stop on the far side of the streets. The near-side stop proved unpopular.

The "horse disease" that caused so much trouble in Nebraska three years ago is said to have broken out on a horse ranch near Mullen.

Henry Dambroger, a resident of the Dewitt vicinity, recently purchased the 240-acre farm of Albert Eckel, for which he paid \$30,400.

The Minneapolis & Omaha depot and two freight cars standing on the adjoining track, together with the entire contents, were destroyed by fire at Hancock.

George Cumrine, a well known farmer, near Grand Island, ran into and killed John Peters, the 25-month-old son of Mr. and Mrs. Rudolph Peters, in the outskirts of that city recently.

The Hastings Gas company, now seeking a new franchise, claims to be earning but 3 per cent on its investment, and has invited the public to call and inspect its books.

Tabernacle meetings will be held in Seward commencing early in November. Evangelist Hamilton will conduct them and all churches of the city will join in supporting the meetings.

Story O. Kretzinger, son of Judge and Mrs. E. O. Kretzinger of Beatrice, will help lay out grounds in South Chicago for the erection of an elevator to cost \$5,500,000, and will have a capacity of 10,000,000 bushels of grain.

Joe Stecher, champion wrestler, will be presented with a diamond studded belt by his admirers in Dodge October 6. Governor Morehead is expected to make the presentation. Citizens of Dodge plan to make the event a home coming day.

Reports from the registrar's office of the Doane college at Crete place the enrollment of freshmen in the arts and science department alone at fifty-five. This brings the enrollment of the freshman class in advance of any previous enrollment in the history of the school.

St. Paul clinched the 1915 championship of the Sherman-Howard league by blanking St. Libory, 11 to 0. This makes four successive seasons this league has run.

5,000 people were caught in a terrific rain storm while attending the Platte county fair at Columbus. Many were unable to find shelter and were drenched to the skin.

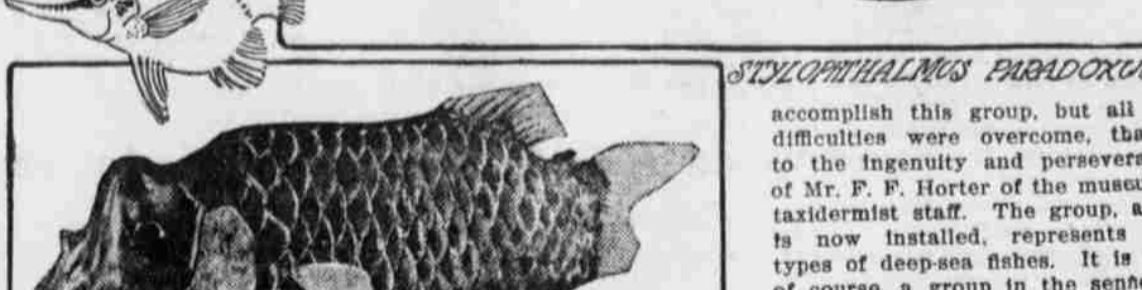
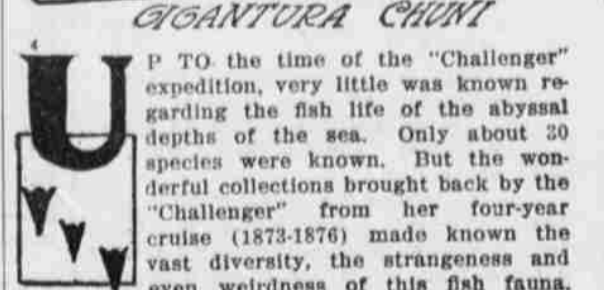
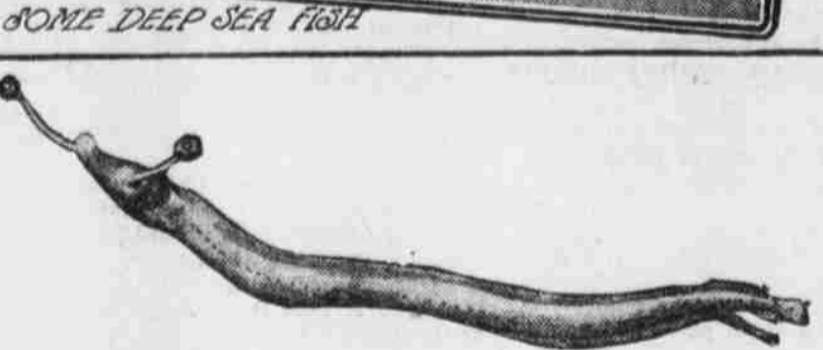
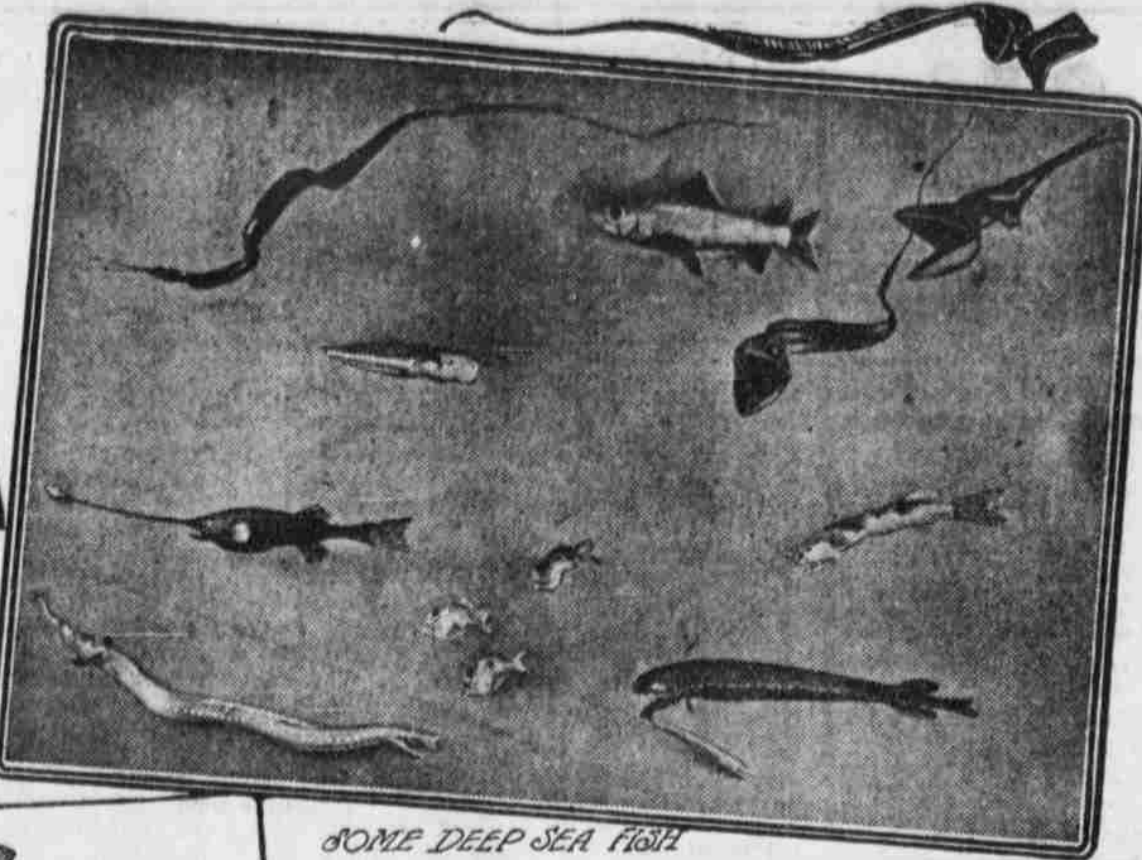
E. S. Scofield, formerly editor of the Neligh Register, has started a new paper in that town, known as the Neligh Semi-Weekly News. This makes three papers in the town.

The construction of the new Carnegie library in Hartington is rapidly nearing completion and the building will soon be opened to the public.

At a meeting of the Jacksonian club in Omaha, attended by a full membership, plans were taken up for the bringing of the democratic national convention to Omaha in 1916.

Fire destroyed the Sitz flouring mill at Scottsbluff, entailing a loss of about \$20,000. The loss will be a severe blow to the community, as it will be necessary to ship the large wheat crop to other points.

FISHES
of the
DEEP SEA
L. HUSSAKOF
in the
AMERICAN MUSEUM JOURNAL



UNTIL the time of the "Challenger" expedition, very little was known regarding the fish life of the abyssal depths of the sea. Only about 20 species were known. But the wonderful collections brought back by the "Challenger" from her four-year cruise (1873-1876) made known the vast diversity, the strangeness and even weirdness of this fish fauna. Several hundred kinds of deep-sea fishes had been collected—some of them dredged from a depth of more than a mile—and it required a huge quarto to describe and picture them. From this volume dates our real knowledge of the fishes of the abyssal deep. The "Challenger" expedition was, indeed, a "Columbus voyage" in ichthyology; it opened a new chapter in the history of the science.

Since that time many deep-sea exploring expeditions have been sent out by the various nations, and hosts of other fishes have been brought up from the oceans in all parts of the world. More than a thousand species are now known, and we can appreciate at its full value the richness and strangeness of this fauna.

Moreover, not only do we know the scientific investigations carried on by the various expeditions, we now know a good deal of the physical conditions under which they live, so that we can, in a measure at least, explain the why and wherefore of their extraordinary characteristics.

When we think of life in the deep-sea, there comes to mind, first of all, the enormous pressure which these creatures must withstand. This pressure becomes the greater the deeper we go down, and in the profoundest depths it equals thousands of pounds to the square inch. The result of this pressure is that the tissues of these fishes are tender and loosely knitted together. When they are brought up out of the dark depths, and the great pressure under which they live is removed, the explosion of the gases within them bulges out the eyes, and often blows out the viscera through the mouth, while the muscles collapse, leaving them soft and flabby like moist rags. Most deep-sea fishes are very small also, usually only a few inches in length, and it is probable that this reduction in size has come about, to some extent at least, from the great pressure which they live under.

Another important condition is the dimness of light, or even darkness in the profound depths of the sea. If we imagine ourselves descending into the deep ocean, we see the light grow dimmer and dimmer as we go down, until finally a level is reached beyond which no light penetrates at all. The entire vast depth below it, is in eternal darkness. Now the fishes living in this dim light, or in total darkness, have been profoundly modified by it. In some forms the eyes have become very small, and in some cases have entirely disappeared. There are even fishes in which the skin and scales of the body have grown over the place where the eyes should be, so that these fishes are, as has been aptly said, "blind beyond redemption." Other forms, on the other hand, have been affected in an entirely different way. The eyes, instead of growing smaller, have grown larger, as if in an attempt to catch every feeblest ray of light. In some fishes this has been carried so far that the eyes have become like enormous globes.

Most deep-sea fishes have luminous organs of one kind or another, so that they carry their own light about with them. In some the entire body glimmers, the coating of slime which exudes from the pores and lateral canals, emitting a soft silvery glow. In others rows of minute, luminous organs run along the sides of the body, or there are flashing light-spots on the head or face. What a wonderful sight would be to us a small black fish flitting through the darkness and darkness of the deep with its head-lights and row of pores gleaming through the darkness like some small ship passing through the night with its portholes all aglow! Some deep-sea fishes have a luminous organ at the end of a feeler on the head.

A pertinent question may be asked: How do we know these fishes glow and glimmer, since no human eye has ever beheld them in their abyssal home? We know this partly from analogy and partly from actual observation. When one is in a boat in the tropics, on one of those sultry nights when everything is a dead calm, and the black clouds hang so low that sky and sea form one continuous blackness, then one may see the glimmering fishes darting out of the path of the boat, their forms, silvery and ghost-like, outlined for one moment against the blackness of the sea. This effect is chiefly due to the oxidizing of the slimy secretion covering their bodies. Why shall we not believe, then, that in deep-sea fishes a similar phenomenon takes place, particularly in many of them

the slime pores and canals are greatly developed and must exude large quantities of slime? Then too, on deep-sea expeditions, on favorable occasions, as for instance, a dark calm night, fishes that have been brought to the surface and placed in water were seen to flash light from the ends of the tentacles or the phosphorescent pores, precisely as we should have expected from a study of these organs. Major Alcock, in his interesting volume, "A Naturalist in Indian Seas," mentions a specimen brought up from a profound depth which "glimmered like a ghost as it lay dead at the bottom of the pall of turbid seawater." So that by inference, as well as by actual observation, we must believe that what we call luminous organs in deep-sea fishes, emit light into the darkness about them. In the case of fishes totally blind, the absence of light is compensated for by the development of enormous antennae-like feelers, modified from fin rays, so that these fishes can feel their way, as it were, through the darkness.

The absence of light, however, entails another important consequence. As is well known, no plant life can exist in darkness. There is therefore no vegetation of any kind in the profound depths of the sea. The deep-sea fishes are, in consequence, all carnivorous, the more powerful ones seizing and devouring the weaker ones. It is a cold black world where might reigns supreme. Many have enormous mouths, and formidable teeth to insure holding the prey. In some forms the teeth are so large that the mouth cannot be shut!

The temperature of the water in the profound depths of the sea is always low and near the freezing point. This is true everywhere, even at the equator. Undoubtedly this has an effect upon the fishes, although it is not yet known what it is. The amount of oxygen dissolved in the water also, is much less than in water nearer the surface. The breathing apparatus of the deep-sea fishes is modified to suit their peculiar conditions. The gill filaments have become much reduced in size, and in a number of instances some of the gill arches bear no gill filaments at all. The fishes are apparently adapted to a much smaller oxygen supply than those living in rivers or in the shallow sea.

When we think of the vast diversity among these fishes, the question arises: Are they all representatives of a single family or group that has become specially adapted to life in the deep sea; or do they belong to different families or groups? One need hardly be an ichthyologist to answer this question. Even a cursory examination of the plates in a work on deep-sea fishes will show that different types are represented. In fact, a great many families are included in the deep-sea fauna. There are sharks and rays; salmonoids, herrings, perches, eels, and representatives of many other families. We can explain this heterogeneity among them in this way. We may imagine that fishes of many different kinds in their search, so to speak, for the unoccupied corners of the sea, found a haven in these deeper waters where they were free from pursuit by their enemies. In the course of time they migrated farther and farther into the deep, a change in habits taking place pari passu with the changes in structure. Having started out with different organizations, and possessing different degrees of variability, they became differentiated in diverse directions, so that while some developed enormous mouths, powerful teeth, or phosphorescent organs, others became bottom-living and partly or completely lost their eyes. Still others developed long feelers for groping their way through the darkness. Now and again, however, fishes of separate groups developed similar structures, so that there are many striking cases among deep-sea fishes of what the biologist calls "convergence," or parallelism.

The museum has recently prepared for exhibition a number of typical deep-sea fishes arranged in the form of a group. The preparation of this exhibit involved many technical difficulties, such as the modeling of the fishes in transparent or translucent media, to represent them as glimmering or shining with lit-up "portholes." Considerable experimenting was necessary to

accomplish this group, but all the difficulties were overcome thanks to the ingenuity and perseverance of Mr. F. F. Horner of the museum's taxidermist staff. The group, as it is now installed, represents ten types of deep-sea fishes. It is not, of course, a group in the sense of the habitat groups displayed in the museum; it is not a section, so to speak, taken from nature and transplanted to the museum. In nature so many deep-sea fishes are not to be found in so small a space. What the group represents is a number of fishes which are in nature scattered over a vast area and through a great height of water, here brought together for museum purposes into a few square feet of space. Each fish is reproduced accurately with its phosphorescent pores and tentacles as these are known to exist. With one or two exceptions they are enlarged several times, as the fishes themselves are very small. And since it is known that the phosphorescent organs do not glow with a steady light, the illumination of the group has been arranged so as to have these luminous organs flash intermittently. Furthermore, the installation is arranged so that one may view the fishes for a few seconds in full light, as if in a synoptical exhibit, and then see them, when the light goes out, as they are supposed to appear in the darkness of the profound depths, lit up only by their own phosphorescent organs.

Near the top of the group is seen a fish which lives on the border line between the region of dimness and total darkness. Many of the fishes living in this region are not of a uniform somber hue, but are brilliantly colored. Neocopeus is one of these. The body is "one dazzling sheen of purple and silver and burnished gold, amid which is a sparkling constellation of luminous organs" (Alcock).

The glowing fish in the center is Barathronus diaphanus, a small fish known from a single specimen, which was dredged in the Indian ocean at a depth of a little over four-fifths of a mile. The model of it is one and one-half times the natural size. The phosphorescent fish with the curious long tail (at the right) is Gigantura chuni. It, also, is known by only a single specimen. This was brought up from a depth of four-fifths of a mile in the Gulf of Guinea, on the west coast of Africa. The model is twice the natural size.

The two dark fishes with enormous gaping mouths (near the top, at the right) are Gastrostomus bairdi. This species is commoner than some of the others, a number of specimens being in several museums. The models of it in the group are copied life-size from a specimen in the museum. The species occurs in the Atlantic ocean, near the American coast, in the path of ocean liners. Specimens have been dredged from a depth of nearly three miles.

Near the bottom of the group at the left-hand side, is seen an eel-like fish with a line of lit-up pores. This is an enlarged model of Stylophthalmus paradoxus, a small silvery fish widely distributed in all the oceans, whose young also are known. The generic name it bears was given it in allusion to the fact that the eyes are perched on long slender tentacles. The species ranges from a depth of a little less than a mile to two and one-half miles. Another form with tentacles is Gigantactis vanhoefeni, a species typical of many deep-sea fishes which have a tentacle, terminating in a luminous organ, attached to the head. This tentacle serves as a lure for attracting prey. The present species is known by only two specimens which were found in the Indian ocean at a mile and a half and a half from the surface. The creature is a very small fish, the model being enlarged six times.

HIS STATUS.

"As a motorist, is Jinks in the running?"
"Is he?" He ran up a bill for repairs, ran down a woman in the street, ran away from a running comment of the crowd and was run in by a policeman."

NATURALLY.

"The new idea of fresh-air games is working well in the insane asylum, isn't it?"
"Yes, indeed. The inmates are just crazy about it."

JUST IT.

"That motorist was developing railroad speed when the cop got him."
"I see. A case of arrested development."

an uncertain tomorrow. He stopped and smiled. "Paper, mister?" he called cheerily.

I exchanged a sheepish glance with the big business man, and he dug down in his trousers pocket and said: "I'll take the whole bundle." Then he paid Benny for them and gave them back, and I bought them and did the same thing, and we all whistled!—St. Paul Pioneer Press.

In the Indian army all orders are given in English.

SMILE ALWAYS HAS A VALUE

May Be a Lesson in This for Those Who Think Life is Hard for Them.

Apparently it had been a bad day for the big, pompous business man, and he must have dealt in wheat just before the two million bushels contract with the allies was canceled, for he slammed his office door shut with a bang and mumbled something grotesque concerning the breaks in the

market as he shambled out into the street.

He might have known that one of us would have to turn out, but he expected me to do it, and I wasn't in a pleasant frame of mind myself, what with a trying headache all afternoon and a fuss with the boss. So I didn't propose to get out of somebody's way when I was on the right side and he was wrong.

Well, we couldn't walk through each other, so we just naturally came together, while the big business man

proceeded to cuss me as he had just finished cussing the market, and I tried to make him understand that he couldn't walk over me, regardless of markets.

Then Benny came hobbling along; Benny Paul, who was whistling to beat the band! His small, frail body was bent on crutches and he was lugging a big bundle of papers that seemed almost too much for him, but he was whistling, just the same. Not a worry nor a care, making the best of today and hoping for the best from

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BOSTON SYMPHONY ORCHESTRA, OCT. 7. This great musical organization will appear at the Auditorium.
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