Hints for the Poultry Raiser

BALANCING THE RATION.

By A. P. Marshall.

We are inclined to think that most growers of chickens get perhaps the best results when they supply a very wide supply of feeds to their birds because the flock is able to select what natural inclination prompts them to. If the supply is sufficiently varied the birds then get practically all that their constitutions demand and therefore they give fairly good results. Perhaps it may be as well under those circumstances not to attempt to too closely balance the ration for the birds but in many cases it is just a matter of a little grain and whatever happens to be handy which in itself may not be bad food but very much out of balance for the results desired. Quite often the introduction of one or two articles would so improve the nutrient values of the feed as to more than double the returns that can be obtained.

Little does the average poultryman realize what immense varieties of foods fowls gather when they are able to range at liberty to which they normally respond with an abundant supply of eggs and make rapid growth in consequence. Given approximately the same conditions when confined as in the winter season these birds, if they are not run down or have not been forced to excess, should produce in the same big way and continue in vigorous productive health so that they prove also excellent breeders from which to secure the next year's producing stock. Only by a regular course of good, sound balanced feeding can the breeder be absolutely certain that his fowls are getting the best for the object desired, although if there is exceptional variety it is more than probable that the birds will fairly well balance for themselves.

In different sections the staple grain ordinarily used will probably very much vary. In one locality it may be corn while in another it will be wheat, depending largely on the most extensively grown grain and the price. Using almost wholly one grain is almost bound to bring very uncertain results, depending entirely on the right other elements that may be required to make up a good balance. Water, of course, does not enter into the question of feeds. It is, however, fully as necessary as any feed, and should always be on hand cool and fresh where the birds can get it. The nutritive ration of a food or ration expresses the proportion of digestible protein compounds to the carbohydrates and fats (the fats being multiplied by 2¼ to bring them to a level of the carbohydrates, because one part by weight of fat is on the average equivalent in heating power to 2¼ parts of carbohydrates). Knowing the proportions of these elements of the foods available it is then possible to proportion the quantities so as to get the results. Often the use of just one other product will correct the balance to bring real good results, where for lack of something to correct the missing required elements only loss can result.

Quantity is also a necessary consideration, and if the breeder knows what each fowl should receive he is better able to be sure they are receiving all that is necessary or getting more than they should. This is especially the case when large numbers are kept.

A balanced ration can usually be arrived at for almost any purpose with the readily available products as a base to work on, adding anything having the elements in right proportion that can be secured to fill in what is required. Palatableness makes more difference than some imagine, and although a ration may be balanced fairly well the birds may not take to it, and in consequence cannot secure the nutrient values in sufficient quantities to give the desired results. Sometimes a change becomes necessary merely to vary the monotony of a too similar ration. The action of the flock is probably the only thing that can show that it is tiring of the food being furnished. As a general thing cooking food will very much help in making it more palatable and perhaps aids digestion, although the nutrient values are in no way increased and even perhaps some nutrient values may be lost in the cooking.

The balance to use depends entirely whether eggs are required, the birds being fattened or for growing chicks. Each case should be differently balanced to get the best results and using the same foods regardless of conditions will not bring the biggest results. For the most economical feeding the fowls should receive the nutrients in quantities and proportions which at the time fit the particular needs of the flock under consideration. A subject of this kind is a very long one and therefore it is necessary to confine this article to balancing for eggs. We find as a ration that has proven a good one, furnishes digestible nutrients per day, per each 100 lbs. live weight as follows:

	Dry matter.	Ash lbs.	Protein lbs.	Carbo-hydrates lbs.	Fat lbs.	Fuel value calories.	Nutritive ratio.
Hens, 3-5 lbs.....	5.50	.30	1.00	3.75	.35	10,300	1:4.6
Hens, 5-8 lbs.....	3.50	.20	.65	2.75	.20	6,240	1:4.2

It will be noted that for heavier hens the proportion is less per 100 lbs. than with lighter fowls.

The experiment stations will readily supply tables showing the nutrient values of various foods that may be used in feeding poultry, and with this it is possible to make up a ration that will give approximately the balance suggested as a standard for laying hens. Suppose we have cracked corn, wheat, corn meal, wheat middlings, buckwheat middlings, animal meal, fresh bone, young green alfalfa, we get the following result by working them about to arrange the nutrient values to suit the standard for each 100 lbs. of fowls for 5-8 lb. birds:

	Dry matter.	Ash.	Protein.	Carbo-hydrates.	Fat.	Fuel Value calories.	
Cracked corn, 1 lb.	.891	.015	.0714	.6612	.0497	•1572	1:108
Wheat, ¾ lb.	.672	.014	.0767	.5191	.0876	1161	1:7.1
Corn meal, ¾ lb.	.638	.010	.0469	.4894	.0263	1108	1:11.7
Wheat middlings, ½ lb. ...	.420	.019	.0635	.2658	.0170	685	1:4.8
Buckwheat mid'lgs, ½ lb.	.437	.010	.0500	.3225	.0110	788	1:7.4
Animal meal, ¼ lb.	.452	.021	.1440	....	.0248	372	1:0.4
Fresh bone, 2-3 lb.	.622	.163	.1483	....	.1110	741	1:1.7
Green alfalfa, ¾ lb.	.213	.021	.0292	.0840	.0031	224	1:3.1
	4.345	.273	.6300	2.3420	.3305	6651	1:4.9

While the results do not exactly coincide with the standard set it is approximately the same, and the nutritive ratio proves to be very close to the requirements. Such a balance should give very good results and quantities may be increased, keeping them in the same proportion to make up any quantity desired to be prepared for convenience. If one wishes to fatten any stock, it is then only a matter of increasing the proportion of carbohydrates and fat to that of protein, bringing the proportion up to 1:8 which with a limited amount of exercise will be found to put on flesh quite rapidly.

Of course grain feeds should be fed in deep litter for the layers to promote exercise and the mash can be supplied either as a dry mash or moistened with milk or water. A plan of feeding that has been found very satisfactory for the American breeds is the following: By bulk measure, wheat bran three parts, ground oats one part, corn meal one part, beef scraps one part, with one fifth the bulk of cut clover added are all mixed together dry, slightly salted and moistened to a crumbly consistency with hot water in cold weather and cold water in warm weather, and given the fowls at noon time or towards evening in winter and in the morning in summer.

Cracked corn, wheat or oats are fed in litter of straw or leaves for the other meals of the day. Many are the methods of feeding, some giving results fairly uniform, others giving temporary good results, but the best results can only be had where the needs of the flock are considered carefully, the foods balanced to bring up condition, reduce fat, or promote egg laying as the case requires, and the balance corrected as condition of the birds indicates it to be advisable. A closer study of this subject will add many dollars to the profits of many poultry growers.

THE UNSTABLE MOON.

Not Yet Amenable to Astronomers' Mathematics.

The celebrated observatory at Greenwich, England, the place from which we reckon longitude, was founded by Charles II. in 1675, mainly for the purpose of investigating the movements of the moon in the interests of navigation. Although in the intervening two and a half centuries astronomers have worked at the problem, the moon has not yet become entirely amenable to their mathematics. The astronomer-royal of Great Britain, in his report of the work at Greenwich during the past year, calls attention to the increasing deviation between the calculated position of the moon in the sky and its real position as shown by the Greenwich observations. The deviation has lately been growing in a serious manner. The error last year was more than twelve times as large as the error twenty years ago, and the average annual increase during the two decades has amounted to half a second of arc in longitude. The reason that astronomers have failed in getting exact results from calculations based on the dynamical laws of gravitation is possibly the existence of some attractive force that they have not yet discovered, although the result may also be affected by the true shape of the earth, which still awaits accurate determination.

Great men are ordinary people with their understandings polished.

NEW FRENCH CHIEF OF STAFF

GEN. EDOUARD DE CASTELNAU,

whom Gen. Joffre has appointed his chief of staff. Three of the four sons of Gen. de Castelnau at the front have been killed. The second son to fall was brought to his father's camp terribly wounded, and died three hours later. The General kissed his dead son and said: "Go, son, you have had the finest death you could possibly wish for. I swear that our armies will avenge you in avenging all French families."

The news of the death of the General's first son was brought to him while he was in conference with his officers. He read the statement, bowed his head a moment, and said :"Gentlemen, let us continue." The third son, Lieut. Hugues de Castelnau, was killed in October of this year.

COUNTLESS FLOCKS OF SHEEP.

Baaing Billions on the Steppes of Russia.

Russia ranks among the first of the old-world nations where sheep are concerned. In southern Russia, where the plains, or steppes, as they are called, stretch across the enormous empire from the outskirts of Hungary to Mongolia, countless flocks of sheep roam. One man often possesses as many as 500,000 or 600,000 sheep.

The number of sheep being raised on the steppes gets larger every year, but this is not because they are carefully nurtured. They are, in fact, exposed to the most severe weather, and the scorching heat of summer and the freezing blasts of winter are only to be dreaded second to the hurricanes which sweep over the plains at times.

During the tempests the sheep make no effort to weather the storm, but run panic-stricken before the wind, and are forced by the thousand into the streams and ravines with which the steppes are intertwined. Were it not for the intelligent use of goats neither the shepherds nor their dogs could avail much at such times, for the sheep can scarcely ever be brought to face the terrible winds or to seek the shelter of a ravine.

But with every hundred sheep three or four goats are kept, and, as these can easily be made to face almost any wind, they are used to lead the way down the rugged descents and the sheep follow blindly.

The shepherd of a large flock, or ottara, is called a tschabawn. The tschabawn usually owns a wagon or two, drawn by oxen, in which he carries his provisions and cooking utensils, together with the skins of such sheep as have died and those of wolves he has killed. The wagon or wagons lead the van when this wild shepherd travels, next he comes, and after him trail the sheep.

When he comes to good pasture he does not leave until the grass has been eaten down, and even when on the march his encampment is seldom more than two or three miles from where he started at sunrise.

From five to six hundred ewes are in the ottara, and the tschabawn draws the milk from them and places it in huge shallow wooden bowls to be exposed to the sun and made into a kind of cheese, known as "brinse," very popular in Russia and East Germany.

During the severe winter months the sheep are sheltered, but in spring, summer and autumn they are pastured on the plains.

When the evening meal is over the shepherds and their dogs sit about a fire of dry reeds and grass for an hour or two. Afterward the arrangements for the night are made.

Each man throws his furs, that serve for mattress and coverlet, on the spot the tschabawn has assigned to him, and between every two beds of the dogs and men the same intervals occur.

Pays Tribute to Russians.

An enthusiastic tribute to the Russian soldier and his leaders is paid by Gen. Arz, the Hungarian military leader who for five months was Field Marshal Mackensen's chief lieutenant in the Russian campaign. Gen. Arz says: "The Russian military leadership is energetic, determined and up to date. The Russian infantry soldier is active, brave, determined and not afraid of death. Those stories which assert that their officers drive them into battle with machine guns are nursery tales. His individual merits are indisputable."

EARLIEST SOLAR ECLIPSE.

Drunken Chinese Astronomers Failed to Predict the Event.

Two Japanese scientists, the Messrs. Hirayama and Ogura, whose research work has added considerably to the knowledge of the world, have finally published the results of their attempts to fix the dates of some early eclipses recorded in Chinese literature. The earliest is mentioned in one of the books of the Shu Ching, where it is recorded that in the reign of Chung K'ang, the fourth emperor of the Hsia dynasty, there occurred an eclipse of the sun which had not been predicted by the astronomers, who were alleged to have been drunk and to have neglected their duties. Hence the customary rites for delivering the sun, which should have been arranged in advance and superintended by the astronomers, were in the emergency performed by other officials without proper preparation. The emperor accordingly ordered the army to punish the astronomers. A later document makes it impossible to fix the date of this event as October 13, 2127 B.C. (Julian calendar)—the earliest recorded eclipse in the world. Calculation shows that there actually was a solar eclipse on that date, but probably not in China, though the elements of the motions of the sun and moon are not accurate enough to indicate certainly the path of so remote an eclipse. The authors are inclined to think that the information fixing the date of the eclipse is due to Chinese astronomers of a later age, who calculated that an eclipse occurred on that date and erroneously supposed that it was visible in China.

WERE YOU BORN IN DECEMBER?

If So, Astrology Says That You Are Lucky.

If you are wondering why men who are born in December are fearless and determined and women who own the twelfth month for nativity are both passionate and chaste, cease wondering. Astrology has the answer.

Such humans are born beneath Sagitarius. The sign of the thigh is responsible. It makes men handsome, physically strong and of commanding personality. Women it inspires to intensity of love, sacrifice and chastity.

It is a great month to be born in—December. The men are executives of Business and of enterprise, the women are executrix of the home. The men are free and easy of address, open of heart, honorable and decisive. The women are deeply religious, noble of purpose and devoted to their families. As mothers they are deeply affectionate, but more just and given to adoration of abstract justice than are women of other signs. They are ready to send their sons into battle for their countries in times of war, even though it means heartbreak and death for all concerned.

They are generally conceited and desire to be the major actor in all ventures in which they are concerned, but never so much for their own selfish gain as for the satisfaction which their active natures demand.

Changed Circumstances.

"Before Kate married Mr. Richleigh she used to walk in her sleep.

"What does she do now—ride in an automobile?"

Men who consider themselves to be of very great importance frequently treat their wives and children as if they were of no importance.

BRITISH FAMOUS 29TH AT THE FRONT

KNOWN AS THE OLDEST STAFF OF THE ARMY.

Correspondent at Dardanelles Gives Due This Famous Division.

Ellis Ashmead-Bartlett, who was the British press representative at the Dardanelles, chronicles in simple but telling phrases the gallant deeds of one of the commands which played a conspicuous part in the Gallipolo fighting. In part, he says:

"The purpose of this article is to do belated justice to the role played by the 29 division in the struggle in the Dardanelles. The renown of this division is world-wide, and its number will ever in future be surrounded by that mixed halo of romance and glory which attached to Cæsar's legions and Napoleon's old guard. In fact, the 29th earned for itself the title of 'The Old Guard' of the army.

"Unfortunately but few of the original veterans who landed at Sedd-ul-bahr are left, for nearly all are dead or invalided home. Some, in fact, have been wounded many times.

"As the division has played a most prominent role in almost every engagement that has been fought on the peninsula during the last six months, I do not know how many times it consumes itself in furious attacks on the enemy's works, but already I believe at least three times the number of its original strength have passed through the ranks.

"The 29th division landed under the command of Major General Hunter Weston, and has since been commanded by Major General De Lisle. All four countries, England, Scotland, Ireland and Wales, have the honor to be represented in its ranks.

Repulsed Turkish Attacks.

"On August 6 the division was holding its old position on the left of our line at Helles, across the gully ravine, and on that day the 88th brigade delivered a most gallant assault on a section of the enemy's line over ground devoid of cover.

"While the landing at Sulva Bay and the great advance from Anzac were taking place, the 29th held its ground and successfully repulsed attacks from the Turks.

"When the attempts of the new divisions to take the Anafarta hills definitely failed by August 19 it was decided to make a final effort to cut the enemy's lines of communication by employing the Old Guard. Secretly at night three brigades were brought up in trawlers from Helles to Sulva and landed without the Turks being aware of the movement.

"In my accounts which have appeared in the press of the events of this memorable August 21 chief credit is being given the newly arrived yeomanry because they were the only corps which the censor allowed to be mentioned, but in reality the second mounted division of the yeomanry were held in reserve behind Lalla Baba until late in the afternoon, and they only came into action after the repeated efforts of the 86th and 87th Brigades of the 29th mounted division failed to shake the enemy's defense.

Yeomanry Deserve Credit.

"The yeomanry deserve every credit for the magnificent manner in which they behaved when in action for the first time. They advanced two miles under a hail of shrapnel over ground which afforded not so much as a blade of grass as cover before they reached the dead ground at the foot of the enemy's works.

"It was the 2d brigade, under the Earl of Longford, consisting of Bucks, Berks and Dorsets, which made the final glorious charge in conjunction with the 87th brigade and obtained temporary possession of Hill 70, which had subsequently to be abandoned in the night. The losses of the brigade were very heavy, the Bucks regiments losing almost all their officers and men.

"The arrival of the 29th division on the battlefield stimulated the whole army and showed how seriously our leaders regarded the task ahead. The division was ranged along a line stretching from Hill 70 to Hill 112. The 87th Brigade was ordered to attack Hill 70 and the 86th Hill 112. The South Wales Borderers acted as a connecting link between the two. The 88th Brigade, which had suffered very heavy losses at Helles on August 6, was held in reserve.

Whole Army Watching Them.

"The men of the 29th rested quietly in their trenches during the morning. They realized that every eye of the whole army was watching them and that a signal, if dangerous, honor had been conferred on them. Throughout the afternoon the 88th Brigade made repeated efforts to advance on Hill 112, suffering heavy losses, but could make no progress in the face of the enemy's determined resistance.

"When the final effort was made to capture Hill 70 late in the afternoon, the South Wales Borderers who had been held in reserve, were brought up. This regiment advanced against the south face and dug themselves in beneath the crest before the 2d yeomanry brigade, under Lord Longford, came up from behind Lalla Baba. There they remained until it was almost dark, taking part in the final charge which gained possession of the crest.

"It will thus be seen from this brief summary that the brunt of fighting on August 21 again fell on the 29th division, but even the efforts of these heroic troops, ably seconded by the yeomanry, failed to achieve success against an enemy equally brave and determined, who enjoyed the incalculable advantage of fighting behind intrenchments on commanding hills. But the 29th division has only added to its fame by this failure."

COMPULSORY JOY.

German Patriotic Demonstrations Not Spontaneous.

We have more than once published extracts from the German press, says the London Daily Telegraph, which showed that the flag-waving and other patriotic demonstrations which invariably take place all over the country when the German staff reports new "victory" are by no means spontaneous on the part of the public. It is, in fact, a standing order in most German cities that on such occasions every householder must display bunting, nothing but extreme poverty being accepted as an excuse for omission to do so. But the Prussian authorities in Alsace-Lorraine have gone further than this. It is not enough that the inhabitants of Strassburg and other Francophile cities should be compelled to make a pretence of rejoicing over German successes. With that characteristic attention to detail which naturally extends to their methods of mean persecution, the Prussian authorities have now commanded that henceforth all the churches in Alsace-Lorraine must be decked with German colors on receipt of "victorious news." The Vossische Zeitung gives the text of this order, which was conveyed to the Bishop of Metz in the following letter from the Secretary of State for Alsace-Lorraine, Count von Roden:

"On one single occasion the general commanding the 16th and 21st Army Corps induced the ecclesiastical edifices to take part in the general flag display to commemorate a victory. It now seems desirable that the wish of the local clergy to give visible expression to their patriotic sentiments and those of the people should be complied with. May I, therefore, respectfully suggest to your grace that an agreement be arrived at between the clergy of the diocese with a view to having churches and parsonages decorated with the national colors on receipt of news of victory."

In order to make it clear that this note, in spite of its polite phraseology, is a definite order, the Vossische Zeitung heads it, "A Warning to the Clergy of Alsace-Lorraine," and adds "In view of this note the clergy have been summoned by the bishop to conform to the wishes of the authorities."

JAPAN CAN'T SEND ARMY.

Transports Are Lacking, Declares the Premier.

While Japan will be unable to send troops to the European theatres of war, she will gladly assist the Entente Allies as far as she can financially and lend them the support of her arsenals, according to Premier Count Okuma, who was interviewed at Tokio by the Paris Matin's correspondent.

"There was talk last November of Japanese forces fighting in Europe," Count Okuma is reported to have said. "To have done that we should have had to send 400,000 men, expecting to lose 200,000 of them and replace them with 200,000 more. We have not the necessary transports, for we should have wanted 2,000,000 tons of shipping, and our commercial fleet aggregates only 1,000,000. In the face of these figures Great Britain and France understand the impossibility of the operation.

"Our sympathies being as strong as ever, we should wish to give France our financial support, at least, and thus, perhaps, hasten the end of the war. Japan is not a great financial Power, but we have certain resources. We have just covered twice over a Government loan of 30,000,000 yen ($15,000,000), and that probably would make the issue of a second loan difficult; but to prove our sympathy for France we should be happy to offer our aid, however modest.

"The impossibility of sending troops westward does not prevent us from giving the Allies naval and military support. Our arsenals are mobilized as in time of war. We play also the role of sentinel in the Far East preventing our enemies from fomenting revolt among the warlike Mussulman people, who might be tempted to profit from your difficulties.

"We are also doing everything necessary to guard against damage to the Trans-Siberian Railway, whereby our supplies reach Russia. The principle back of all Japanese action is that while our allies are fighting we shall not allow them to be attacked from behind."

One is Plenty.

Mrs. Penheque—Don't you dare to leave the house this evening, Henry.

Mr. Penheque—I fully intended to remain indoors, my dear.

"Huh! What for?"

"To study a problem that has been in my mind for some time."

"What problem?"

"For weeks I have been trying to figure out what on earth the Mormons can see in polygamy."