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## CANADIAN

## PHARMACEUTICAL JOURNAL

published under the auspiges of the

## CANADIAN PHARMACEUTICAL SOCIETY.

E.DITED BL
E. B. SHUTTLEWORTH.


TORONTO:
PCBLISIIED BY THE EDITOR.
PRLNTED AT THE DAILY TELEGRAPH PRINTING HOCSE, BAY STREET, CORNER OF FING.
1880.

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# PHARMACEUTICAL JOURNAL. 

EDITED BY
E. B. SHUTTLEWORTIX.

Vol. II.
TORONTO, ONT., JANUARY, 1869.
No. 9.

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## What is Opium?

BY DR. F. A. FLUCKIGEH, OF BERN.
This question, in our days, will certninly be looked at as perfectly idle, both by practical pharmaceutists and chemists. The drug, indeed, is well known, and has been universally used since the carliest time, iat fact for twenty centuries at least ; while tri no other product of the vegetable kinglom has so astonishing an amount of excellent chemical research been devoted since the days of that glorious discovery of a modest Hamoverian Apothecar, who the first evolved the idea that there are bodies existing which are thoroughly analogous to ammonia or potash, yet composed of organic elements. Every one lookiug over the rich chemical literature of opium published from the time of Serturner (IS16) to the recent delicate investigations of Smith of Edinburgh, or Hesse of Stuttgart, may well be satiskied with a mass of analytical facts so interesting, useful and complete. Tho present text-books, indeed, display a very satisfactory bnowledge of this importantdrug, alleit they leave a little doubt regarding some of its numerous constituents.
Yet, I yenture to say, that science is far from having an exact idea of the nature of opium. 'The endeavors of so' many eminent chemists having failed to sunply a thorough acquaintance with the drug, l camnot hope to Gill up at once this defect, but merely wish to make it ovident, and contribute some facts concerning the composition of opium, which have escaped the attention of former investigators.
Opinu contains a dozen of more or less decidedly allaline bodies, among which morphine and narcotine occur in the largest proportion. The former constitutes very rarely more than 20 per cent. of the dried drug and usually not mure than 12 to 15 jer cent. ; the narcotine on an average about 5 to 6 per cent.* The whole of the other alkaloids, namely, pseudomorpine, codeina, thebaine, paparcrine, rhœadme, narceine, kryptopine, and opianine, may be estimated at not more than 1 per cent. Thus the alkaloids amount at best to only $f$ of the weight of the dried juice ; and meconic and thebolatic acid, and meconine to nearly $5 \frac{1}{2}$ per cent. We may say, in fact, that alluwing for tho considerable discrepancies existing in the composition of opium, all the peculiar bodies found in it co not exceed one-third of its weight.
Now, what is the bulk of the remaining 66 per cent. l-However interesting, howerer important, both practically and scientifically, the first one-third may be, yet to hare a satisfactory idea of opiunt, we requre also to know exactly the nature of the other fwo-

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$4-\mathrm{Iy}$
thirds. Most of the analyses of opium enu merate, in ordor to explain its composition, several very doubtful bodies besides the above named principles. Among these, extractive, mucilagencous, and coloring matters occuy the first place. By ancecssively treating with various liguids small quantities of opinm, which alone admit of nbsolute cxhanstion, we may scparato its constituents into several protinns. For the fullowing assays I took a good Turkish opium containing 10 per cent. of morpinc, which $I$ finely powicred and entirely deprived of water. The first agent to which it was submitted was benzol. After the action of this liquid the powder was dried. withont removing it from the funnel, weighed and then exhausted in the same filter with absoluto alcohol. When it yielded nothing: more to alcohol, the powder was dried and weighed again as above, and then exhausted with cold and hot water, with acetic acid, and with ammonia. Lastly, the residue was examined microscopically. It consisted of fragments of tho poppy capsule, which now had become very obvious.

The benzol solution on exaporation yielded the narcotine and caoutchouc, which may be separated by acetic acid. Fatty matters occur, but only in slight traces.
Alcohol takes up the largest bulk; nearly all the bodies enumerated at the outset as peculiar to opium* are contained in the alcoholic tincture, and besides them sugar, a very small quantity of resin, and coloring matters. This portion of opium, representing the largest part of it, appears certainly to deserve the most attentive examination. I am sorry to state that I have not yot succeeded in solating from it any new principle in a state of sufticient purity. The coloring matter, for instance, is extremely altorable.
Water dissolves chiefly mucillage from powdered opium, which has been previously exhausted by benzol and alcohol. The muciage is precipatated by neutral acetate of lead, but not by silicate of soda; I have not found in opium any gum analagous to gum arabic. This fact, if confimed by the examination of large quantities of good commercial opium, would enable one to say that any opium containing gam must necessarily we adulterated.

After the action of the water, acetic acid removes some salts and a little coloring matter, all in small proportion.

Finally, ammonia acts very manifestly upon the residue of the preceding operations. The pordor swells and yields a brown liquid, which being viscid, cannot easily be filtered. On the addition of an acid, of alcohol or ceren of chloride of sodium, a thick jelly at once separates. The pectic acid, thus obtained, has not yet been found by other observers, as far rs I can see, though I'think that it must henceforth be considered as one of the regular constituents of opium. I met with it in several sorts of the drug which happened to be at my disposal and likewise in a good standard opium from Asia Minor, for which I am indebted to Mr. E. Merck, of Darmstadt, who furnished mo with the residues of the drug, which had been previonsly exhausted by hot water and by hydrochloric acid. It rould be interesting to cramine in this respect the various Indian opiums, which I presume to be of a somewhat different composition. From all the various reports on

[^1]
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$1-$
them, it appears that the Indian juice is more fluid than that collected in Asia Minor. Does this partly dopend upon the absenco of pectic acid or of mucilago? This investigation must be expected from chomists having at their command considerable quantities of the residues of genuine opiums; they may state whether $I \Omega m$ correct in saying that $n^{s}$ pectic body must havo a place among the normal constituents of the poppy juice.

After the treatment of tho opium with ammonia, water is without any action upon the residue, which oven does not swell ; I consequently cannot agreo with those chemists who admit bassorine as one of the principles of opium.
Examined under the microscope, the opium powder thus deprived of all soluble matters, shows very distinctly that it consists now oxclusively of fragments of the capsule, which by incincration yield some ash, but not the whole amount of it, the inorganic salts having been already partly removed by alcohol, water and acetic acid. Among them a comparatively large proportion of allaline sulphates, as well as of sulphate of lime is always met with. Suiphuric acid is set at liberty, if the precipitate obtained by neutral acetate of lead is decomposed by sulphuretted lyydrogen in an alcoholic solution, which causes the mucilage to be precipitated.
In tho manner indicated I completely exhausted 10 grammes of good Turkish opium successively with the above liquids, devoting about is week to this task. The results will, I hope, clearly show wheh direction should be followed, in order to promote our knowledgo of opium. It is that part extracted by alcohol which contains the constituents not yetknown, and upon whic! further researches, which I hope to institute, may probably throw some light.

The following numbers, calculated for 100 parts, were obtained. The opium yield-ed-
To benzol,,$~ 10.33=\left\{\begin{array}{c}4.50 \text { narcotine and } \\ 6.33 \text { caoutchou, with } \\ \text { traces of fatty matter. }\end{array}\right.$
" alcohol, . $57.67 \begin{gathered}\text { representing about } 20 \text { per } \\ \text { cent. of unkinown bodies. }\end{gathered}$
" mater, • $\quad 9.67$ of mucilage.
" acetic acid, 1773 salts, a little pertic acid and coloring matter.
" ammonia, 7.33 pectic acid, reddening litmus.
By inciaration 10.38 jer cent. were burat (eellulose), leaving
$2 \cdot 39$ ash ; the whole amount of the ash in the drug under examination being equal to 5.32 per cent.; when it was directly hurnt.

### 100.00

I have observed that the pectic acid is not obtained immedately in a pure stato ; it appears to be always accompanied by some of the so-called humic bodies. Yet by dissolving it again in ammonia and precipitating by alcohol, it at last becomes nearly colourless and dovoid of inorganic matter. It is always very difficult to powder; when heated, it evolves acid vapors, but in a less pure state it retains some albuminous matter yielding then ammoniacal vapors.

The purified pectic acid, when thoroughly boiled with water, partly forms a jelly, which at first is almost imperceptible, being ierfectly colorless and trensparent. Ne. Jal

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Secretary.
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## 135． 19 ALiO AOEST yOR TIE


 They will be found to lw the（hetprot in the end， thungh the first cust mis to alittie more than some otiaers
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NEW EAGLAND WIX THREID MUHINE： For Shog bianurasturing，cozstantly on hand． ADmaess，

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nuy turbid appearance；an abundant preci－ pitation takes place only on addition of am－ monia．
The propertics of pectic matters are known to bo liable to some change；I fund that sometimes the pectic acid is not inmediately separpted from the ammonincal solution on addition of acetic acid，but reguises the nd－ dition of alcohol．
I wis curnons to know whether pectin must be considered a constituent of the juice of the tetual poppy－head or the capsule itself． An assay made with nearly ripe capsules showed that they donot contrin any pectin－ at least I could not obtain it in the same way as I did it from opium．A very considerable prupurtion of pectin，however：（22 per cent．） has been found in poppy seeds by Sace．＊－ Pharm．Journal，（Eugland）．

Note on Amerioan Opium from Vermont．

## by whllask phoutor，jh．

A few weeks ago my attention was called to a samplo of＂opium，＂by Mr．C．Wilson，of ＇Monkton，Addison Co．，Vermont，who said he had been requested by persons interested in the success of his enterprise to have it ex－ ，amined．On enquiry as to its oxigin，Mr． Wilson said it was of his own production in the neighborhood above mentioned，and that he had been engaged in the culture for seviral years，and that it was quito lucrative．After the weather was settled in the spring the secd of the opium poppy（Papaver somniferum） was sown in groumd prepared as for a garden， in which the plants grew vigorously，and abont the middle of August the capsules at－ $t$ tained their size．The collection of the juice ＇was commencel at this tme and continued until the first of Soptember，when the whole ＇plants were cat，bruised wath a porcion of atcohol to prevent fermentation，and then subjected to strong pressure；the jurou thus obanined was evaporated to an extract，incor－ porated with the inspissated juce of the cap－ sules，so that when fimshed the wholo con－ stituted a soft mass of pitular consistence and nearly homogeneous texture，（except a few fragments of regetable tissue，possessing a strong narcutic odor almust precisely that of a suod orlinary ngium，but not so decided，and 1 anmform daik brown color．Its reaction is acid．This year Mr．Wilson obtained 640 ipounds of this opium from six and a quarter neres of land，being 100 pounds to the acre， for whech he obtained prices varying from cight to ten dollars per pound from druggists and physicians in New England．

When macerated in water it som breaks ＇down and is readsly extracted．The pulpy matter left from 100 grams after percniation
with water untnl cxhasted．amounted to 25 with water untul exhansted．amounted to 25
grains．One hundred grains carefully dried in a hot air bath weighed 84 grains，and hence coatains 16 per cent of moisture．Subjected to the action of dhuted alcohol until ex－
hausted，the ressdue wesined 13 grains． hausted，the residue weigned 13 grains．－ Treated with ordinary ether and dried，the
moist opium lost 20 per cent．of its weight ； moist opium lost 20 per cent．of its weight ；
but 16 per cent of this loss is due to mater in ＇the normal opmum，learing the ethereal ex－ ＇tract erguivalent to 4 per cent．The ethereal solut：on had a light greenish color，due to chlorophyll．On evaporating the ether spon－ tancously，the residue consisted of numerous
minute，well defined orystals of natcotino，a greenish oleo－resinous matter，and the odo－ rous matter of the opium．＇The crystals are nearly all prisms，with parallel sides and two－ sided oblique terminations，and a few stollate gronps occur．Separated and wiped，they aflord an intense yolow color to nitric acid， and when treated wi h sulphuric acid fullowed by nitrate of potassa，thay yiold the usual deep red coloration of Orfila＇s test for narco－ tima．Benzino extracted 4.5 per cont．of green elastse caoutchouc matter containing narcotina．The aqueots and alcoholic solu－ tions respond freely to the tests for mecensic acil．
The morphia present was assayed by the process of Mohr．
100 grains of the moist opinm（represent－ ing 84 grains dried）was exhausted with re－ peated portions of cold water and finally per－ colate．，untal four thid ounces of infusion was obtained．This wis boiled with 100 grs ． of limo previously slaked with some of the weaker liquid for fifteen minutes，filtered hot and the dregs purcolated with boiling water till exhausted of the solublo matters of the opinm．The alkalme infusion，slightly aci－ aluhated with murratic acid，was evaporated to about half a fluad ounce，and when cold neutralized with ammonia and filtered，to separate coloring matter，and then carefully evaporated to about 200 grains，and at slight excess of ammonia added whilst yet warm． After standing twelve hours the crystalline precipitate was carefully collected on a small tarred filter，washed，dried，treated with ether and weighed 6.25 grains．This precipitate afiorded tho characteristic reactions of mor－ phia with nitric acid and sesquichloride of iron．
Now fiom these results it must be inferred that this now kind of opium contains $5.2 \overline{5}$ per cent．of morplan in its moist commercial condition，or 7.44 per cent．when it is dry ； and that it is mach more soluble in water than ordinary opiun，affording Tö per cent．of its weight to that flud．The tincture made from it by the officmal procoss has the appearance and odor of ordinary laudanum，but of its therapeutic character in relation to Smyma opum I was wholly uninformed．Now there need bo no hesitation in saying that this opium is below the standard of the Pharma－ copocta．The malier appears to be entirely candid and honest in his conduct of the pro－ cess，and the fault is in his not knowing the real character of the substance he is dealing wath，and the importance in medical and hy－ gienic points of view that it be parallel in strength with fair Turkish opium，to obtain and deserve the confidence of physicians， apnthecaries and druggists．It is probable that the pure exudation from the capsules unmmed with any foreign matter rarely reaches us in the orium market，and there may bo less impropriety in cmploying the in－ spissated juice of the popyy than the various matters that are introduced at Smyrna and elserlhere，to give cons stence to the tro soft exudation from the capsule and incrense the volume of the product．The fact that 640 pounds of an opium，cuntaining between six and seven per cent．of morphia，was produced in a few weeks after the poppy aitained its pruper size，and from six and a quarter acres of land，in a climate as far north 23 Vermont， by a moderate force，seems to warrant the belief that，under intelligent regulations，th3 culture of opium might be effected in this country so as to be a profitable crop．The
neod of assaying it would be imperative until its physical characters became sufficiently well established to be dopended on by commercial dealers.

We womid adviso Mr. Wilson, he lenowing tho amount of oxtract ho adds, to reduce its quantity so that the pure juice of the cupsules may bear a larger proportion to tho gross amount produced. Probably one-half less wonla make the result nearer commercial ojium, containing 10 per cent. of morphia.

There are rarious experiments going on at tho south and west, in Mississipi and elsewhere, this season, but sis yet the results have not reachod me. The subject is sulficiently important to claim the attention of the American Phamaceutical Association, and if experimenters throughout the country will communicate their resnlts to the writer with a clear statement of the processes of culture and preparation employed, he will engage to givo a faithful report of thom to the next meeting at Chicago. It would be best to accompany each communication, if sny are sent, with about half an ounce of the product, fairly representing the gross amount produced by the sender. - American Juurucal of Pharmacy.

## Ohemioal Notation.

BY prugessor c. A. Jox.
In order to understand the present chaotic state into which chemical notation has been plunged, it will bo mecessary to review the Farions systems as they havo been roposed during tho past twenty years, and thus strive to arrive at a clear knowledge of the subject. The nomenclaturo proposed by Lavoisier, and adopted and improved by Berzelius, was accopted by chomists in all parts of the world, and for fifty years all of the books and all of tho separato disscriations on chemical subjects have been written in accordance with this well-dovisod langtiage.

This state of things is now fast passing away, and in order to understand it modern paper on a chemical subject it is necessary to Lave a table of the author's atomic reights, a key to his notation, and a glossary of terms. Any one who can find his way through the maze of systems recently proposed, must be possessed of a mathematical turn of mind, and be naturally apt at solving problems and gnessing riddles. A vast amount of ingonuity has been displayed ai inventing compounds which havo no real existence, and in supposing reactions which ought to take place provided the elements were brougint together. Eumerous bodies have been invented and named by neans of puzzling formma, so that the industrious chemist who works in his laboratory and actually discovers now compounds, will find them already named for him in advance of his researches.

Thereare now four contending armies in the field: First, the followers of the equiralent dualistic system of Berzelius. This includes nearly all of the older chemists, and is the languago that has hold sway for many years. Thie. advocates of this system speak of combinátion by weight according to tlee lans of proportion. They write hydrogen as 1 and oxygen as 8 , and if these two are united, they write tho symbol FO. They represent all chemical reactions by dualistic formula, as if an acid and a base were really in
oxistence in a compound, and could bo removed each by itscif. They would writo the sulphat of potash, KO, , and would call
the thion of an acid and a bise, a salt old table of equivalents is taken as tho basis of all calculations, and there $1 s$ no necessaty in their opinion for doubling the atomic weights of any of tho elmments.

The nomenclature of Lavoisier and Berzeling, hiving been employed mall of our textbooks, is well understuod by tho chemmsts of all countries, and wo need not go more fully into an explanation of it, but can pass at once to the sccund class. The disciples of this class place great stress upon atome weights; they like to liave all atoms of the same sizo, and tiney study the simple gases of all bodies. They believe that the simple gases always contain the same number of atoms in equal volumes, and they seck to express in formula the relation of the clements by volumes as well as by weights. This clits write the symbol of water $\mathrm{H}_{2} \mathrm{O}$, and, the atome weisht of hydrogen lemg taken as 1 , oxygen as called 16 , and they necessarily doublo a'great majority of the elements. The same class object to the dualistic formula, and prefer what is called the unitary atomic system. Il:e adherents of the unitary atomic school are daily increasing in mumbers, and will probably eventually carry everything befre them. There are, howover, ma.ly who are villing to abaudon the dualistic method, and yet msist upon the unitary equivalent notation as a proper compromise. They do not seo the neccessity of doubling the atomic weights. It may be that Berzelius went too far in insisting upon his dualistic interpretation of all chemical roactions; but althuugh his behef was incapable of proof, it still served an admirable purpose in its day in aidung chemnsts in their researches. We cannot prove that sulphuric acid is composed of an anlyydrous silky solid ( $\mathrm{SO}^{3}$ ) and water ( HO ), yot we cannot prore the contrary, and one party has as much right to write $\mathrm{HO}, \mathrm{SO}^{3}$ as the other has HSO\& or ETSO4.

A third party has been brought together, chiefly from discuntented members of tho old dualistic schoul. They have been so long accustomed to a neat method of writing reactions, that ilhey would be unhappy over the unimaginative unitary plan. Whis third party have established the doctrine of types. To thom everything is built up on the type of water, hydrochloric acid, ammonia, marsh gas, etc.
Water is $\left.\mathrm{H}_{\text {II }}\right\}$ O. Canstic potash is $\left.\underset{\mathrm{K}}{\mathrm{K}}\right\} 0$. One of E's of the water is replaced by tho $K$, and thas caustic potash is built up on the type of water. Tho adherents of this system are rery nnmerous, and to persons of an imaginative turn of mind it affords a fine opportunity for tho discovery of all manner of curious transformations. It is difticult to see in what particular it is better than the old Berzelius method. It is just as probable that the elements unte in pairs as it is that they unite in types of each other; and as the number of types is on the increase, we are likely to have an immense number of imaginary compounds made to order. In order to represent the power of an element-to replace hydrogen, the word equivalence or quantivilence has been invented, and the equivalence of tho elements is oxpressed by some number being placed orer it. Here, too, much confusion prevails, as the equivalenco of some of the elements is not known, and in other cases it does not ap-
pear to bo constant. Tosay, in mathematics, that tho fignro 1 somotimes stands for 3 , and that the figuro 4 may occasionally be written 2, would introduce an clement of confusion into arithmotic that would render the study of that mportinnt branch next to inmossible, but this would be only equal to wi.... we here find in this system. Tho disciples of equivalence speak of liydrogen, chlorine, bromine, etc., as montuls; oxygon, sulphur, lead, otc., as diads; mitrogen, phosphorus, arsenic, etc., as triads; carbon, silicon and tin as tetrads; and all of tho elements havo boen ciassified according to their atom-replacing nower. When the symbols are used in this method it is necessary to express tho equivalence by sone numeral abovo tho letter; thus liydrogen would bo writien H , oxygen Oli , nitrogen ${ }^{\text {Nillit, carbon }} \mathrm{Cl}^{\circ}$
The fourth party in the fiold may bo callod the disciples of typical unitary atomic notation. They like types, du not like tho old equivalents, nor the dualistic, nor yot the mintary cquiralent formula. They double most of the atomic weights, take a unitary view of things, and cxpress themsclves in figures of speech which they call types. The adherents of this notation are chiefly occilpied with organic chemistry, and it cannot be denied that the doctrine of types has suggested rescarches that liave resulted in the discovery of many interesting compounds. It is, however, too cumbersomo for application to all branches of chemistry.

As lung as no more then four types were employed, thero was less wanger of confusion; hut now that there is a tendency to increaso the number, no one can foresee what the end may be. The now chemical nomenclature of Professur Samuel D. Tillman, of the Amorican Institute, Now York, attracts a great deal of attention in this country and in Enrope. It has very much to commend it, and now that a general overturning of old systems is takng place, it ought to bo fully understood before judgment is pronounced against it.-It has tho great advantage of being easily remembered, and it can be adapted to any of the doctrines mentioned above.

It is high time that delegates from all parts of the world be sent to a grand chemical congress, for tho consideration of all the questions incolved, and for the purpose of systematizing once more the nomenclature of the science.

Wo shall endeavour hereafter to tako up each system more in detail, and to illustrato our remarks by examples of reactions, so that our readers may be fully informed of tho questions that aro now agitating the chemical world.-Journal of Applied Chemistry.

Adoliterated Honey According to the Deutsche Industrie Zeitung, there are at present in Germany itinerent dealers in so-called Swiss land-honoy. This substance finds a large number of prrchasers on account of its fine taste and beautiful appearance, while, instead of being real honcy, it is simply starch converted into sugar by means of sulpluric acid. It may be detected by means of the presence of sulphuric acid thoreinvir., in the shape of sulphate of lime or gypsum. Its use, of course, is perfectly harmless, but it is not honey, nor does it contain any honey at all. As this trick is quite likeIy to bs imported into this country, dealers had better be on their guard.

## PUBLISIIERS' NOTICE.

The Caxadian Phammaceuticar. Jourana is issucd monthly from the office of publication on the Fiftenth of every month. Il will aluays contain infornation intaluable to Druggists, Mirmists and others intercsted and conncted teith the salc, compounding, and dispensing of alrugs and madicines. The present number will be sent to every druggist in the Dominion, all of thom, it is hoped, will show their appreciation of the cuterprise by girntg it substantial support. Members of the Cunadiun Phurmaceutical Association will roceive the paper free as of right.

To Advertisers this Jcurnal offers the best and indecd the only medium of reaching by a single adoertisement eresy Druygist in Cimada. Our rates, pnelished on the jirst page, will be fonnd low, end will be strietly adhered to in all cascs. Adertisements in urder to secure insertion slwuld be in the pullisher's hands not later than the end of the month preceding cach issuc.
The Journal will be under the control of the folloving Committce, teho will be responsille for the due performance of all adtertising contracts:
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All Communications conncted reith the paper to be adllressed, post-paid,
J. M. TROUT, Publisher,

Canadiar Pharmaceutical Jourual, Toronto.

## CANADIAN PRARMACEDTMCAL SOCIETY.

President, - - - War. ELLiot, Esq.
The reguker metings of the Socicty take place on the first Wedncesday evening of each month, at the Mrechanics' Institutc, rrien, nfter the transaction of businass, there is a puper read, or discussion cngaged in, upon siojects of interest a:rd maluc to the members.
The Socicty cuimats as mombers, Chemists and Druggists of goond standing, and their assustants and apyrentices, if elected by a majority rote, and on payment of the following fees:
Prinoipgls - . . . . $\$ 400$ per Ånnam Assistants \& Apprentices, 200
The Jovensal is furmishad free to all mem3crs.
Parties mishing to join the Society may send their names for propasal to any of the members of the Society. A copy of the Sonstitution and By-lates of the Socicty teill be furnished on application.

HENRY J. ROSE, Secrctary.

## TKXE CANADIAN



IURONTO, ONT., JAN., 1869.

Although somowhat behind time, our wishes are none the less sincere that the year upon which wo havo now entered may be, to all, a hapny onc. At this scason of congratulation we cannot forbear reviewing the acquaintance of our readers with plossure, and of rendering our thanks for the patronage so lindly bestowed upon our undertaking. The possibility of esiablishing a successful paper in the interest of Canadian Druggists, was, at first, regarded with considerable doubt on the part of some of our friends. We are pleased to state that that doubt is now removed, and that, with the aid of helping h s:ids, we have struggled successfully through our infincy, and now enter upon the second $j^{\circ} \mathrm{e}$ :r of our existence with every prospect of a long life.

Whe feel obliged for the flattering notices which have been received through the press, and, for our part, will do our utmost to ensure a continuance of that courtesy which should always mark brethren of the pen-we were about to say scissors-by giving full credit to all articles gleaned from our contempuraries.

We feel well assured that our old subscribers will stick to us, and would ask them to use cerery indearour to introduce the Jourval to the notic: of their fricnds, and in procuring new subscribers. Modesty forbids that we enlarge on the valuo of this paper to every druggist-we leave this to the judgment of our readors-but we must say that the amount of information supplied-taking into account the extremely low price, is unparalleled in the records of scientific literature.

A fer months ago measked the help of our friends in contributing interesting papers, or details of their researches in pharmacy. TVe hare again to rener the request. On addressing sereal druggists of our acquaintance on the subject, the reply usually has been, that they do not know anything to write about, or worth communicating. This is an evident fallacy; it is impossible for a druggiat to be in the daily cxercise of his calling without encountering facts of value-perhaps, enturely unknown to others; at all crents, unlinown to some. It is by making knomn these facts that the science of phamacy must be built up, andcach, by contributing a truth, hithorto unrecognized, supplies another step to that ladder of experience, by which perfaction is alone attuinable. The Jouranis offers one of the best mediunss for the publication of these records, and it shall alwass bo our pleasure
to give them room; knowing themby, that not only will help be supplied to those requiring information, and the road made ersier for future travellers, but a racant niche will be fillod, or, perhaps, a pllar supplied in that structure of pharmaceutical scienco which it should be our aim and object to render an complote and perfect ne possible.

## VOUOME II.

It has been thoughtadvisable to commenco a now volume nt this season, as boing the most appropriate time for so doing. Our first volume will, therefore, contain eight numbers only. We publish a full index in this number, and must apologize for not haring it ready for December: it was not, however, until that issue was going to press that the idea of commencing a new volume was entertained. We trust this will prove an adequate excuse. Of course, subscribers will zeceive their papers until their term of subscription has expired. Wo hope every effort will be made by our friends to enlargo our circulation, and no time is better than ot the commencentent of "Volume 11." The Jourval is worth a dollar a year to any druggist, if for the commercial information it contains only. The reliability of our price current is undoubted, and intending purchasers can place the utmost dependance on our guotations.

To wholesale druggists, dealers in patent medicines, fancy goods, or druggists' sundries; to chemical manufacturers, or those who have any specialty to bring before the trade, the Jueraial offers, undoubtedly, the best advertising medium in the Dominion. The adrertisement is brought directly under the notice of those for whom it was intended, and this is our advantago over the press generally. A reference to our terms, which may be found on the first page, will decide the point of moderation in clarges.

## THE PBOPOSED PHARMAOY;AOT.

Our readers will be pleased to learn thatthis bill, as published in a supplement to onr last issue, was introduced to the Legislative Assembly by Dr. MreGill, on Tucsday, January 12, and ordered for a sccond resding on Thursday erening. Oring, howerer, to the lengthened discussion on the Ontario Rifedical Act, which was brought up on that evening, the bill was not procceded rith, and the House adjourned at midnight. The second reading will probably take place on Saturdas.

## THE NEW MEDIOAE AOT OF ONTABIO.

Lest night (Thursday) the Kowsof west into Committec of the Wholo on the Bill to amend and consolidate the Acts relating to the Pro-
fession of Medicino and Surgory. Soveral amendments mero proposed, but no material alteration was made, with the excoption of the first clause, by which the Homwopathists and Eclectics were allowed a representation in tho Medical Council ; cach body being privileged to elect fivo members, while the Allop: thists recturn twenty. The bill will beread o third timo on Saturday.
The discussion was an extremely interesting cne, and was conducted in a very friendly spirit; the evident wish being to render justice to all. Several of the members-amongst others-the Hon. M. C. Cameron and Mr. Mchrarich were tery warm in their praises of Homocopathy, adding their own personal testimony to the virtue of "little pills."
The general intent of the Bill is to heal thoso petty jealousies which have so long disgraced tho profession, by uniting all parties under one organization, which shall alone have forer to grant hicenses, and that only on being astisfied that the claimant is proporly qualified. A general Board of Examiners is to be appointed, and a rigid examinstion prescribed, on subjects of general importance; such :as chemistry, anatomy, butany, physiology, \&c., but on materia medica, therapeutics, and the practice of medecine, on which the Horncoopathists and Electics hold different viems from their older breticern, the cxamination is not to be held-cumpulsory. Not only will this measure raise the status of physicians, but by doing so the public safety is thereby rendered more secure, and Dr. VfcGill in introducing the bill coniers a boon on both physician and patient.

We are pleased to see this spirit of conciliation and toleration among the rival schools, and more especially as it emanates from themselves. The advice of "physicians, heal thyself," although very difficult to practice, has been successiully put in operation, and we hope the old differences will never recur. "Let brothelly love continue."

## OANADLAN PHARMAOEUTIOAL SOOIETY.

The regular morthly mecting was held on Wednesday erening, 6th inst., at the usual place.

The President occupied the chair.
After reading of minutes of last meeting, the folloring wero proposed and elected members of tho Society:-
prINCIPALS.
T. J. O'Coanor, Toronto.
M. Springer, Waterloo.
S. Snyder,
R. E. Bywater, Colborne.

Thos. Carre, 3icasford.

AssISTANTS.
Wm. H. Cox, Brantford.

## A. B. Bennett,

Neil McEachren, Wardsville.
F. Lobb, Toronto.

Tho President said with regard to the proposed bill that ho had an interview with Dr. MceGill, who had kindly consented to tako charge of the measure, and although very late in the Session would bring the matter before tho Atty.-General, and use his best endeavours to obtain its passage during the present session. The Presidentsaid he would make a point to see Dr. McGill again on the following day. Letters were read from Nir. J. McLean, Walsingham, and Mr. James Coombs, on the subject of the Phamnacy Act, which were reierred to the Sucretary for reply. Tho Printing Committeo reported, through the Treasurer, that the Journal had been successful, so far, and witheaid of tho money granted by the Societymo liabilities would be incurred for the first year. The Lecture Committee reported, through Mr.R. W. Elliott, that the final arrangement mado with Dr. May was for him to supply chemicals and apparatus to the students for the sum of fifty dollars for the course; and that the lectures were in successful operation; the class numbering about thirty-the Wednesday crening lecture being deroted to theoretical, and the Friday evening to practical chemistry, with experiments, in which each student Zakes part.

The attention of the Society mas drawn to the number of complaints regarding the irregular receipt of the Journal, and the Secretary mas instructed to bring the matter before the publisher.
The Treasurer said there was some misunderstanding regarding the time when the fees of the Society were due, and wished the question decided by the Society; some mere firourable to haring the fees commence with annual term of the Socicty, while others thought it better that members should be liable for fees from the date of their election; and this ras the opinion of the majority of those present. With regard to the noltifation of the fecs being due, it was proposed to publish, in the Journal, the names of thoso one, tro and three months in arrear; but tho opinion of the members was that it mould bo bitter to notify the menbers by circular when the payments rere due, and the Corresponding Secretary rias sdrised to do so.

Mreoting adjourncd.
gimat J. Ruse,
Secretary.

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## gutiess of

Fimst Princirles uf Molein Chemistity: A Mancal of Inorganio Cuemistry yor Students, and for vise in Science Classes, by U. J. hay Suuttlenobtu. London: Churchill \& Sons, 1867.
Tho object of this rook is to supply a strictly olementary manual of inorganic chemistry, adapted for use in science classer ; but the author appears to have had special reference to the requirements of the matriculation examination of the University of London, as he confines himself to the limits of that examination. The compounds of tho metals are not treated on, and details of manipulation are, with few exceptions, omitted, as tending rather to confuse the student, and being generally unintelligible except when accompanied with actual demonstration at the lecture table, in presence of the objects used. The author lays little claims to originality, by giving credit to the lectures of Dr. Willianson, at University College, and thoso of Dr. Frankland, at the Royal College of Chemistry, as furnishing him with a consider able part of the matter collected in the book.
The system of notation proposed by Dr. Frankland is employed throughout the work; but old methods for the description of chemiI cal changes are retained on the ground that "the atomic theory, and its nore modern adjuncts-though founded only in part on experimental data, and sure, ere long, to pass away-have a temporary value which it rould be short-sighted to orerlook."

Two preliminary chapters are deroted to the explanation of such of the principles of physics as aro deemed necessary, and considerable space is deroted in the after part of the book, to the discussion of questions of a purely theoretical character relating to modern chemistry. The student is, howerer, hurried on with a rapidity incompatible with a thorvugh understanding of the subject, and unless accompanying a course of lectures, we do not think Mr. Shuttiemorth's work of much ralue, as an aid to a substantial knowledge of chemical science; although it is quito possible, that as an aid to thoseabout to pass a stated examination, before a certain college, it would prove a material help.

Themanufacturer and Bouder: A Practical Jodrial of hidostrear Progrbss: Westorn \& Company, New York, January, 1869.
We have been favored with a cony of tho first number of this able preriodical, and recredit it, at once, a placo in the front rank of industrial journals. To the artizan and mechanic it premises to be of incalculable value, and more cspecially to those persons cngaged in building, or pursuits of a like nature. Nor are the wants of the manufacturer forgotten, as a number of rell written, practical articles will testify. The journal contains thirty-two large octaro parres, and is profusely embellished with illustrations. It will bo issucd monthly, and if we are to judge by the number before us, ita success is certsin.

The Cuemical News: Amemcas Remint;
Townsond \& Adams, New York.
We are pleased to nutice the introduction of a new feature in this joumal, that is, the addition of a supplement containing a record of the prooress of chemistry in America. It is undor the editorial charge of Prof. Seeley, and greately onhances the value and interest of this periodical to American readers.

## Adulteration of Medicines.

HF F. MAHLA, P. H. B.

Epson Salts.-There is a large quantity of a spurions article in the market, which is nothing more than finely crystalised glauber salt. It does not contain a trace of sulphate of madnesin. It may be recognized by the circumstance that it is perfectly free from bitterness to the taste, and that its aqueous solution produces no precipitate on adding first phosphate of soda and afterward aqua ammonia.
Sal Rocielle.-An article purportine to bo sal rochelle is now offered for sale, which contains at least $2 \overline{5}$ per cout. of sulphate of soda. This can be discovered by adding to a somewhat dilute solution of the suspicions salt a few drops of a solution of either nitrate of bargta or chloride oi barium, and afterward c.p. nitric acid. Tho precipitate produced by the baryta salt must disappear on the admixture of the nitric acid if the salt is nure.

Viensa Glycerine.-I had occasion to examine this really beautifui looking article, and found it contaminated with sulphate of lime (gypsum) and chloride of sodium (salt). It contained also considerable quantities of sugar.

The presence of the eulphuric acid of the gypsum can easily be made manifest, by adding to one sample a few drops of a baryta salt solution, and afterwards diluted nitric acid; that of the lime, by admixing to another sample a solution of oxalate oí ammonia. The chlorine of the salt is discovered by the zppearance of a white precipitate on the adadition of nitrate of silver solution.

It is a little more difficult to demonstrate the fraudulent admixture of sugar. In order to do so, it is necessary to add about fifteen or trenty drops of diluted sulphuric acid to two or three drachus of the glycerine, previously diluted with its own buik of water. This mixture is boiled over the spirit lamp for sereral minutes, when it is allowed to cool down. It is then mixed with a few drops - of a solution of sulphate of copper, and as much caustic potassa (liquor jotassa) as is necessary to redissolve the blue precipitate which at first made its appearance. The Whole is then gently heated orer the spirit lamp, when a copious brick-red deposit of suboxide of copper is thrown down. Pure glycerin will, under such treatment, not produce these phenomena.
Black Sulpagret of Astmaom.-A quantity of puwdered bla 5 sulphuret of antimony, purchased froni one of our trhnlesalo houses, was boiled with hydrochloric acid, in order to prepare the officinal "solutio antimonii terchloridi" (butter of antimuny). It was but incompletely acted on, and the solution after cooling, was filled with numerous crystals, which on examination reco recognized as chloride of lead. A portion of the
black residue not taken up hydrochloric acid was also exnmined; it consisted manly of sulphuret of lead (gulema). - The Pharmacist.

## Ohemioal Aotion of Light.

The interesting researches of Professor Tyudall as to the action of light on certain vapours and liquids may have no immediate effect upon the partice of photography, but it is impossible to say at what point in his discoveries a practical application may become obvious. Let us illustrate by a speculation upon the possibilities attending his recent discoveries. In his pipper before the Royal Suciety he states that actinic light decomposes the vapow of mitrite and aitrate of amyl. Amyl is a radical amalogous to ethyl mad methyl, the hydrated oxide of anyl being known as fusel oil, as the hydrated oxide of ethyl is known as ethylic, or common alcohol, and the hydrated of methyl is known as methylic alcolul. Fusel oil is $k n^{2}$ to be a common impurity in ordinary eareohol, and its presence in collodion has long been regarded as injurious, and conducive to fog, without any knowledge of the reason why it should porduce mischief. Professor 'Yydall's experiments suggest a series of possibilities. When fusel oil is in collodion, and comes in contact with nitric acid, either free in the bath or liberated by action of free iodine in the collodion, a trace of nitrate of amyl may be formed, and this body, being present in the film when exposed to the action of light, and possibly composed, would, under some circumstances, yield, as a product of decomposition, valerainic acid, a substance answering to acctic acid, as the product of the oxidation of common aleohol, or formic acid in methylic alcohol. Or, possibly, in the decomposition, iniermediate bodies, analogous to acetone or aldehyde, might be formed, with a wellknown tendency to produce fog when present in a collodion film. Such a series of possi bilities exist, and might furnish a clue to the fogging action of fusel oil when present in collodion, which, arguing from ordinary analogies, ouglit not to be more inimical to success than the ordinary alcohol employed in the manufacture of collodion.-Photographic Ners.

## Ghrome-Yellow_Paint.

The compounds of the metal chromium are among the most useful and common of all the substances usod in the manufacture of paints. The colors made from it range from green, through all shades of yellow and orange, to red, and are all, with hardly an exception, bright and beautiful. For that reason they hare superseded many paints formerly used-such, for instance, as orpiment, massicot, and nthers.

Chromium was only discorered at the end of the last century, and the namengiven to it-derived from the Greck-was chosen on accomat of the many colors that can be produced from it. It was a mere curiosity at first, until, in Maryland, extensive deposits rere found in combination with iron ore. This compound is amalogons to mannctic iron ore, which consists of sesquioxide of irunand oxide of iron. In the same man. ner the chrome ore found consists of a combination of sesquioxide of chromium and oxide of iron. This substance is that from
which all preparations of chromium are derived. It is converted into at chromate of potassa in the following manmer:

The ore, having been reduced to powder, io calcined with nitre, or with carbonate of potissia, yuicklime being sometimes added, and heated for a long time in a reverberatory furnace. The product is treated with water, and a yellow solution obtained, which upon evaporation denosits lemon-yellow crystals of chromate of potassi. These crystals are a combination of potassa with an acid fomed by the chromium, and called chromic acid. This acid is similar to sulphuric acid, and it forms, with the potassa, the above-named chromate of potassa. When a small quantity of sulphuric acid is added to this salt, half the potassa is removed, combining vith this acid, and the remaining half of tho potassa combines with double the guantity of chromic acid, and thus is the so-called neutral cirromate of potassa converted into a bichromate of potassa. Of this salt inmense quantities are manufactured for use in the arts. It foms beautiful red crystals. Dissolved in water, it forms, according to the amount dissolved, yellow, orange: or red solutions. One part will saturate ten paris of water. The solution his acid properties, and is quite poisonous.
In order, now, to make clirome-yellow, all that is necessrry to be done is to make a solution of some lead salt, as, for instance, the acctate of lead, or, in other words. the sugar of lead, or the nitrate of lead. When such a solution is mixed with a solution of the chromate or bichromate of potassa, a yelluw or orange precipitate of chromate of lead will be formed, of which the shade may be regulated by observing certain particulars whin will be hereafter explained. The precipitate, dried and boxed up for the trade, is manufactured in this country upon a very lange scale, and is known in Europe as American chrome-yellow. Unlike many other articles, it may also be manufactured to advantage on quite a small scale.-Manufacturer and Builder.

Preservation of Drtes yhom Damb.-In pharmacies where any dampness prevails, and there is any danger of the drugs becoming mouldy or spoiling, M. Stanishas Martin recommends the following simple and effectual procedure :-Small wooden or tin boxes, full af quick lime, and having their lids periorated with holes, are to be placed in every box or dratrer containing drugs liable to be injured by damp. The air of these receptable soon becomes dried, and when tho oxide of calcium has become hydrated, it must be replaced by new quick-lime. In the same way a great number of deliquescent salts may be preserved-as, for example, the chloride of gald, which is now so much used in the arts. The phial containing the salt is to be placed in another of double its capacity; filling the space with lime, and corking her-metically.-Bull. de Therapeutic.

3mitisi Sea-meed Charcoal.-This preparation, patented by the 13ritish Sea-weed Company, is found to be a good substituto for animal chareoal as a filtering medium for water, deodorizing somage, clearing white glase, remoring acidity from and dccolourising wines and spirits, and precipitating and decolourizing regetable alkaloids.


## ANNOAL TRADE REPORT FOR 1868.

Tho amount of goods which changed hands during tho year will amount to a fair avorage, although, perhaps, not so large as in 1866 or 1867.

The impedients to business have been: blocked up roads early in the ycar, uncertainty ns to a financial panic, and the constant drooping of the prices of staples. This latter cause rendered denlers very loth to lay in stocks, because experience secmed to teach that the longer purchases were deferred the cheaper would be the price. We nuticed, a month or two since, that prices generally wero advancing, and will now endearor to explain the cause. In 1866, Great Britain discorered that she had "too many irons in the fire," and that some of then were pretty badly burnt. Thereupon ensued a financial panic, which at first pressed only on the juint stock companies, which wero the immediate cause of the trouble, but by degrees extended to almost every branch of trade. The capitalist wanted his money, and the producer or manufacturer had to realize in markets deprived of the usual facilities for holling stocks until needed for consumption, so that prices had to give way. This process went on until the amount of unemployed capital became so large that some outlet had to be found for it, and latterly speculaturs have employed it in buying up the stocks of such articles as were being sold below the cost of production, an operation that is certain to be profitable if conducted on a sufficiently extensive scale, or if the source of supply is so small as to render it easy to forstall the whole production.
Viewing merchandisens a whole, the movement of bullion in the Bank of Eugland will show the tendency of prices, when gold accumulates, prices fall, when there is asteady outward flow, prices rise.

The rate of interest follows theso morements rising, after a drain of specie, falling after an aecumulation of bullion.
The practical bearing of this is to be found in the fact, that the bullion in the Barik of England phas shown a marked diminution during the last feir months, indicating that capital is being employed more freely in commerce, and that prices will likely continuo to adrance until checked by another remulsion.

Payments were not very well met during a portion of the year, but latterly collections are more easily made.
In regard to the future, tro points seem worthy of word of warning. There seemsto bo at present an caccussire desire on the part of joman men to bo in business on their own sccount. In their eagerness, little heed is paid to competence, locality, and capital. A wholesale house "anxious to extend their business," and "a store to let," are all they
seem to care for. If a young man has not sufficiont experience to enable him to conduct every branch of a busmess, if the locality is deficient in population or wealth, if he cannot commaud a cash capital sufficient to cover furnituro, fittings, dead stock, and enough to defray his personal expenses until his business begins to yield a return, and if he has not well formed habits of economy, industry, and temperancecin all things, nothing short of a miraclo will enable him to escapobankrupty. The wholesale house that takes such accounts sows a crop of bad debts to be reaped in the first panic, if not sooner.
The second point is this, many get along with a hard pull at first, but with greater case year by year, until at last they can say, "I own my stock without a dollar of debt," and it is suggested to them that as property as going up, it would be agood thang to own the store they occupy or to build one. The latter is a very dangerous operation, leading oft:n to incalculable expenses that have to be met with ready money, draining away resources which should have been applied to renewing stock or paying liabilities for merchandise. Should a panic occur just about the tiare when the new store or stores are completed, the investor will, probably, go into baukruptey. This was the catuse of dozens of drus failures in the panic of 1857-8. Indications are not wanting that the wombls suffered in that disastrous period having scarred over and become forgotien, investments in town lots and buildings are growing in favour. Experience will show that as a business, dealing in real estate is as profitable as any other, as an investment it is the worst in this country. It should only be bought for cash and in such quantity as is required for actual use.
We do not think that any scrious maschef has already occurred from the foregoing causes; it is more in the hope of prevention that attention has been directed to them. Otherwise the outlook is sufficiently promising, an advancing tendency in prices always stimulates trade ; the country lias been fairly productive, all classes haro had abundant employment at remuncrative rates, and these are sufficient data so long as they last upon which to predicate a prosperous state of affairs.
A fer notes oi the course of prices are appended:

Druys-Opium has sold at a rango of $\$ 550$ to $\$ 12$, the latter being the figure at the close. The stock is largely controlled by partics who domand prices equal to $\$ 1425$ cash, laid dorn here. Our dealers have the prospect of paying that as soon 23 present stocks are exhausted, and of course thoy are not anxious to sell. Rhubarb has continued to decline in both quality and price through-
out the year. Tho Russian sort, generalls known as Turkoy, has disappeared from com. merce entirely for tho timo being, and its place is supplied by "Dutch trimmed." Ipecac and Jalap havo receded in valuo since last yoar ; Shellac has not varied much, being a littlo dearer than in June last. Oil peppermint is a short crop, owing to the unfaror. ablo weather, and is higher; somo minos American essential oils are in the same position. A duty of 15 por cent vias imposed on essential oils and this added about 10 per cent to there price. Onl lemon is about the same na last year, and oil bergamot is ex. pected to be lower when the season's crop gets to market. Castor oil opened rather low, but advanced until September, when the price declined. Gum arabic was sold low during tho summer, but is now firmer. Contharides aro scarce, and cardamons out of market. Oil almonds and bitter almonds are lower. Oil aniseed much higher at the close. Sarsaparilla has fluctuated considerably, being rather easier lately. Canary seed is dear and likely to continue so unthl another crop is gathered. Castile soap has not variod much although lots are offered by some houses at low rates; some samples contain about 40 per cent of sulphate of baryta, worth about it cents per lb , and those to whom duality is no object, should seo that they get a fair advantage in buying inferior goods. For instance, pure Castile soap being sold for say 13 cents, that adulterated as above should be $84-10$ cents to be proportionately cheap.
Chemicals.-Sulphuric acid has been cornered by a combination of the companies and is higher. Ammoniacal products are dearer at the close in England. Preparations of bismuth are dear; camphor has advanced. Iodine is now greatly used in dyeing, and although the production has increased, maintains a high rate. Chloride of lime was held at a high rate at the commencement, but is now lower. Mercurials havo ruled remarkably stcady, Morphia has, of couree, followed opium. The usual rule is, tro ounces of morphia should bring the price of a pound of opium. Cream tartas has been low in this market all year; a movement which causcd it to advance in Europo, norer effected this market to any ertent, and has fallen thrcugh for the present. Bromide of potassum has declined thoughout. Quinine touched bottom in June and is now held at higher rates. Sodas have been a very bad business to importers, but as several manufacturers havo clused their works, there rill bo an opportunity for stocks to diminish and prices to improvo. Strjchnine is higher from an advance in the ram material.

Ducstufs-It may be said generally, that the whole list is higher, from causes bricfly giren. Annatto much ranted; aniline, consamption orerruns the raw material arailable; blue ritriol, copper rising; indigo, short crop ; lacdyo and cochincal, scarlet very mach used. Logrood and extract, St. Dominginas fighting instead of morking.

Only Silver Medal Awardod. Paris Erhibition, 1867. јußor, 1862.

## Pure Chemicals, \&all New Piedicines为. ITORSON \&ON. <br> 31, 345, and 124

southampton how, russeli squale,
Chemical Worls:-Horusum.
merjicld Works, Homerton,
CYPPLY PCRE CHEMLCALS and all New Meprosal Prapabations, inchudfutg the following specialitics:-
H.EPSIXE,

The active digestive principle of the gastric juice; an agreeable and popular remedy for reak digestion.

## If Powder, Wine, Lozenofs, \& Globules

ZANCREATIC ENTESEON
Supplicd in bulk for Dispensing Purposes. YANCREATINE
In powder, containing the active principle obtained from the l'ancreas, by which the digestion and assimilation of fat is effected.
CILORODYNE,
(Bforson's) the universally approved anodyne.
Saccharated Wheat Phosphates, A valuable dictetic preparation for invalids Eind children, supplying the elements for the formation of bone.

## Caution) CREASOTE,

Caution)-from Wood Tar, of which T. M. and Son are tho only British MLanufacturers. f EELATINE,
A perfect and economical substituto for 1singlass.
Artificial Essences for Flavouring. Clonoform and other preparations.

Preparations of persine.

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Medioinal Pepsine, or Digestive Powder,
(repsine Acide Amylacee, ou l'oulrec Nutritire.)
CONTANSS tho aethe digestive priaciple of the gastric C jutce of the stomach, parinat and rendercd permanent and palatance 1basp, 13 \% 20 grailis.
TSST or its Diontiv: Powler_-3ix 20 grains of the Porder vith an ounce of water aud 1200 eriany of purc moist nbrine: apyly a gente theat, not ereecating 100 cagrees Finr. (the teroperature of the stomaedh), for abouthatr an baur. stifring the nulxture occasionally; when the process of dizestion will be found to have conmencet, tha nhrine of disestion whin fuly. This action may the conthuted becoming zin innt in ipy fer hours, a solution ts effected,

such ns occurs in the swouch.
HOLSON'S PEPSINA PGROK,
Oor Popsino obtalacd from tho Stomath of tho PI , in a Puro and Palatablo torm.

## (afutral.)

This is a concentrated preparation of Pepsince, contaning the digestive principlye of the gastere juice in a very netive stato Beink neumic ic roquires diose its digestive prom


Test of its Digestive Pawin-31ix 10 grins of the Foner with an ounce of water, then add 15 drois of the Concentrated Lactic or Hyirochloric Aecid and hio grains of molst fibrine Condact the progress as described uncet tho head medicinal Feysine, when he resuits there indicaleat will he obtained.

- These preparations of Pegsine ars carefully cramined and tested by profesor licrixcodid, and guarantecd by hinn to
 paration ramed, and bearing he Trudc-

Paris Dxrot : Charas et Cantor. Flace Saint-Onportunc.
Agent-Casmines, Roo Salata-Crolx de ia Bretoracric.

Madder cultivation atopped by low prices ruling during the past fow years.
Paints and Oils-White lead is firmer than last year without quotable variation. Ochres and colors genorally denend so much on quality, that it is hard to indicato thom by value. Cod oil is still low, but much firmer than during tho summer. Lard oil has been scarce and dear throughout the year, and at times was wholly umprocurable. Linseed oil has declined, being effected by the high price brought by oil calce. Olive oil has been very dear. Seal oil was sold at very luw rates at une time, but several luts hasing been sold for he United States market the price is now higher.
Sundries-Funcy goods in this branch are more in demand. In staples, English hair brushes are unchanged. Scottish vulcanite combs have been twice reduced during the year, and are now cheaper and better finished than any other variety. Bemager seates are slighatly hugher. 'lhere as a growing trade in loome made perfumery, which has criven all the cheaper varieties of imported out of this market. "Lubin" alone maintaing his ground on account of an old established reputation for quality.

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## \}ates and Qutries.

J. C. L.-Phosfinte of Iron. J. C. L. finds some difficulty in making Ferri Phosphas of a good color, although, ocersionally, he manages to hit the mark, but, he is afraid, only by chance. The trouble may arise from threc causes; firstly,--an excess of phosphate of soda in the precipitation. The proper proportions aro 10 parts of protosulphate of iron to 13 parts of phosphate of soda, each dissolved in ten times its weight of cold mater. Secondly; the use of protosulphate which is old, or partly oxidized-this may be

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## PATEMTT GRADUATED BOTTLES AID VIALS. FHMNT ANH BLUE GREEN GEASS, from 1 to 16 ounces, For Druggists, Physicinns, and Familj Usc.

Also, Wine and Brandy Bottles Graduated. every druggist should use them.

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Soda Water, Lemonado, Sarsaparilla, Ginger Ale, Guger Beer, and overy description
of JErated Waters of first quality.
The thade supplied with Bottles
(ready capped), Corks,
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Parties in the city wishing to rent SODA IVATER FOUNTALNS, will please apply at once to ensure filling of their orders.

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General Stationer and Account Book Manufacturer,
Importer of English, French, German and American Farcy Goods.
To his large and well-assorted stock of the following articles ho begs to call special attention:
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Ear Rings,
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Playing Cards,
Pipes,
Rings,
\&o. \$c. \&c.
Toronto, May 1868.
1-1y
R. C. JAMIESON \& CO.,
manvfactuagrs of evemi descmition of
Varminkes and Japeras
mistinems asd mororters of
American Turpentine, Benzine,
Rosin, Pitch, Tar, \&c., \&c. dealers is
Innseed Oil, Leads, Paints, Colours, \&e.

[^3]remedied by the addition of a fow drops of sulphuric acid to the aron solution. Thirdly; omitting to pour of the supernatant liguid, from tho precipitate, as soon as possible, and addung fresh water. J. C. L. win he nolonger 1 troubled with a "dirty yellow" phosphate if he observes theso points, but will tind his proparation of a fine bline color, characteristic of a well prepared article.

Enquirer.-What is Ons of Cuanac, and how is it made? Enquirer may havo to ask this question very often beforo he receives a satisfactory answer. It is a substance used to mpart the flavor of brandy to spirit, and made by processes bept inviulably secret by the manufacturers, and varying widoly in in their results. By somo it is termed ":onanthic ether," but its composition is not to be expressed by any single chemical compound, Enanthic ether and pelargonic other are so nearly alike that chemsts cannot decide the difierence. We can say, however, that pelargonic ether, prepared by the oxidation of oil of rue does not resumble the oil of cognac, of commerce, in odor or flavor. The true oil of cognac wes, at first, obtained from the destillation of the lees of wine, of which, 3000 parts of the destillate yoilded one of on. It is prepared still, in France, by this method, but, we imagine the New York manufacturers tind a dilliculty in procuring the wine lees and have tumed their attention to other sources.
Oil of cognac is a mixture of the ethers of some of the fatty acids; we are not prejared to say which, but wust leave the matter to your own experimenting.
T. P. K. wants to know the difference, commercially and chemically, betreen benzole and benzinc, or benzene, and also whether the so called benzole, obtained from the destillation of petroleum, is identical with the benzole from coal tar.

Commercially speaking, the napthas obtained from ccal tar and petroleum, both go by the names benzole and benzine, although the former is more commonly applied to the product from petroleum, whilo the latter is employed to denote the coal tar product which is sometimes used for removing grease stains from cloth. Both varicties can beused with equal advantago for this purpose, but the coal tar beszine has by far tho pleasantest odor.
Chemically speaking there is no difference betreen benzole and benzine, and those names are applied to one and the same substance, that is, the compound- $\mathrm{Cc} \mathrm{H}_{6},=$ hydride of phenyl, obtained from coal tar; or by heating benzoic ncid vith caustic lime: of specific gravity 0.85 ; and boiling betreen $80^{\circ}$ and $86^{\circ} \mathrm{C}$. ( $176^{\circ}$ to $186^{\circ}$, F.). The naptha of petroleum is a different substance, although it is said to contain a small portion of true benzine. It is made up of a number of $h y$ drocarbons rhose boiling points range from $86^{\circ}$ to $120^{\circ} \mathrm{F}$. (Pchuue and Calhours,) and of varying specific grarities-never, however, so high as that of benzine. The so called benzole is thereforo improperly named, and is notidentical with conl ${ }^{2}$ ar benzole.

## OHANGES FORJJANUARY.

Lane \& Perry have bought out the business formerly carriud on by Fredrum \& Huffman in Elura. Charles Brent, of Port Hope. las taken J. B. Woudhouso as a partner, The style of the new firm wiil be brent ce Woodhouse.

## PABEON TROTMHES

Wholosaio Doalors in and Manuracturors of OIL, GLAASWARE, LAMPS,
Refined Petroleum of very bs quality
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Our prepared Linsecd Oil contains Dryers and Thimmers. For Painting purposes it will answer fully ns well as the most expensive Paint oils. A very extensive stock of Lasp Goons of all kinds, and at a wide range of prices. Sole Agent for
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51FRONT STREET, TORONTO. dat Prices Low, Torms Liberal $\quad$ 3.1y -TO-
CHEMISTS \& DRUGGISTS.
The undersigned desires to bring before the Notice of the Trade, his
GHERRY TOOTH PASTE.
It is the most agreeable ond at the same time me cheapest article
In the Canadian Mirket, and will fully justify any reconmendation it may receive. For Price, address
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[^0]:    - I had the opportunity of cxamining a German opiun front Biltz, Erfurt, which yielded 11 per cent. of alarco. front
    tinc.

[^1]:    - Narcotino only exceptect, as it bas veen met with in aconite tubers iy 3cessri. Smith.

[^2]:    A cormespondent sends us the folloming :-
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    " 5 sens gaz griz"-for firo cents morth of goose greasc.

[^3]:    R. C. J. \& Co., have business conncxions throughont the Dominion of Cauada.
    proriers prompily altended to and foricarded with despalch.
    Momtrent, Juạe, 1868.
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