MODULE 2

SKIN CARE

INTRODUCTION AND CLASSIFICATION OF COSMETICS

Introduction

The term cosmetics applies to all substances which are intended to be rubbed, poured, sprinkled, sprayed on, introduced in, or otherwise applied to the human body on any part thereof for cleansing, protecting, beautifying, promoting the attractiveness or altering, the appearance to impart a mixed feeling of hygiene, glamour and liveliness.

For a product to be a cosmetic it must be used for cleaning or adornment of the body. Such a preparation should not be primarily for its therapeutic effect. A cosmetic only cleans, beautifies, alters the appearance, adds fragrance or stops the development of bad odor, it changes, heightens or even diminishes color but it does not prevent or cure physical ailments or pathological conditions of the body. Thus ordinary toothpaste and toothpowder are cosmetics since they are intended to clean the teeth and impart a pleasant feeling to the breath. But in case such a dentifrice incorporates anti enzyme agents, antibiotics, fluorides, ammoniated materials and other substances which bring about changes in the oral cavity and prevent caries than such preparations can be called drugs although they may not cease to be cosmetics. This duplicate area of preparations that are both cosmetics and drugs is sometimes difficult to define and hence the cosmetics industry borders closely upon related areas in at least four respects.

1. Cosmetics must be preparations and not devices or toilet articles such as tweezers, razor blades and combs.
2. Cosmetics include such cleansing agents such as shaving creams, shampoos, cleansing creams and lotions but do not include toilet and bath soaps even when they are expensively packed as gift sets.
3. Cosmetics may include such drugs which are used for their cosmetic effect such as antiperspirants in which the physiological effect of these preparations make them drugs whereas the purpose of their use makes them cosmetics.
4. Cosmetics are generally used upon the human body and preparations such as room deodorants etc. are outside the scope of this industry although if the same deodorant were used on the body. They be termed as cosmetics.

The field of cosmetics is very wide and extensive. It includes aerosols, antibiotics, colors for cosmetics, perfume formations, pharmacology and toxicology, preservation rancidity and rheology, along with equipment used in addition to popular household products.

Classification

They are generally classified and considered under four main heads depending upon their functional end use.
Decorative functions :- e.g. nail enamels, hair lacquers, lipsticks etc.
Corrective function :- e.g. day creams and heavy face powders.
Protective function :- e.g. day creams and heavy face powders:
Curative or therapeutic function :- e.g. antiperspirants and hair preparations.

In classifying cosmetics it must be noted that the consumers of such preparations are mostly women and they are more concerned with their physical characteristics. The texture, consistency, color, odor, packaging and general appearance are far more important to them than the chemical properties of the ingredients of the finished products. They are definitely impressed by what a cosmetic will do during use. This depending upon the physical characteristics cosmetics can take on various physical forms and may be classified into the following groups for manufacturing purposes;

Emulsions : e.g. Cold cream, vanishing cream, liquid creams.
Powders : e.g. Face powder, talcum powder, tooth powder.
Sticks : e.g. Lipsticks, deodorant stick, eye shadows.
Cakes :- e.g. Rouge compacts, cake makeup.
Oils : e.g. Brilliantine, hair oils.
Mucilage : e.g. Wave set, hand lotion
Jellies e.g. Hand jelly, wave set jelly, brilliantine jelly.
Suspensions :- e.g. Liquid powder, cosmetic stockings.
Pastes :- e.g. Shampoo soap, shaving soap, toilet soap.
Solutions e.g. After-shave lotions, hair sets, astringent lotions.
Aerosols :- e.g. Hair sets, after shave sprays etc.

In considering the various types of cosmetics more specifically another type of classification can be made wherein we can classify the cosmetic products as per their end use on the human body.
With this view in mind the various cosmetic products can be classified as under:-

COSMETICS FOR THE SKIN

Powders
Creams - Solid/ liquid
Lotions
Deodorants
Bath and Cleansing Preparations
Make up
Sun Tan Preparations

COSMETICS FOR THE HAIR

- Shampoos - Soap and Soap less
- Tonics
- Hair Dressings and Brilliantine
- Hair Waving Preparations
- Beard softeners
- Shaving media
- Depilatories

COSMETICS FOR THE NAILS

- Nail polish and Polish removers
- Manicure Preparations

COSMETICS FOR THE TEETH AND MOUTH

- Dentifrices
- Mouth Washes

BORDERLINE AND KINDERED PRODUCTS

- Eye products
- Foot Powders and Applications
- Insect Repellents
- Miscellaneous products

SKIN CARE ROUTINE

Introduction

The skin is most sensitive organs of the body. It is the true index of a person's health. It also eliminates waste matter and regulates and maintains body temperature. This living, breathing organ is extremely tough and yet, so soft, resilient and flexible.

Skin basically is made up of three layers, two of which play a vital role in its outward aesthetic appearance: the dermis and the epidermis. The epidermis or the superficial layer is made up of several rows of living cells finally covered with a layer of dead cells. These are constantly being shed and replaced from inner layers.

Beneath the epidermis is the dermis or the actual skin. This is the actual skin where the living tissues exist. There are made fundamental fibers responsible for the elasticity and suppleness of the skin (e.g. collagen, which promotes skin firmness and elasticity). The dermis also contains the sweat & oil glands. The surface ends of the oil glands form the pores of the skin. They secrete sebum, an oily slightly acidic film which is deposited on the surface of the skin. In fact this lubricates the skin and the acid contact resist bacterial attacks.

In the basal layer of the epidermis are cells which produce a pigment called melanin. It determines the color of the skin as well as protects against sunrays by acting as a natural sunscreen. The amount of

pigment in the skin increases when there is exposure to sunlight. This is a protective response and helps to shield the inner layer.

It's very important to know one's skin type and take care of your skin accordingly.

SKIN TYPE CHART

NORMAL SKIN	DRY SKIN	OILY SKIN	COMBINATION SKIN
Pores are not visible	Very fine pores	Visibly enlarged pores	Large pores on nose, chin
Smooth to touch	Dull to touch	Greasy to touch	Dry to touch around eyes, cheeks, oily in T Zone.
Velvety to touch	Chapped & flaky	Shiny, does not chap	Flaky in some areas
Fine lines can be seen	Premature wrinkling & fine lines	No signs of premature aging	Fine lines around eyes & forehead
Fine textured, no acne	Feels light & dry	Prone to acne all over.	Prone to blackheads& white heads on nose & chin.

MOST COMMON SKIN CARE PRODUCTS

CLEANSERS - Fall basically under two categories, cream/lotions or gels. They are spread on to the skin & then wiped off to carry away the grime. Cleansers in cream/lotion form are usually a blend of oils, water & emulsifiers. The ingredients enter the pores, emulsifies the dirt & helps it to come out.

SCRUBS :- Which act as skin exfoliators, also work as effective cleansers. Exfoliation is a highly effective deep cleansing treatment its derma brasive action helps in removal of skin impurities, complexion dulling cells black heads etc. & tightens the pores of the skin leaving the skin smooth.

TONERS :- Finishes the cleansing job because it removes the residue left on the skin by soap or cleanser there. It help to shrink the pore size, which has a tightening, toning effect on the skin.
They leave behind a mild tingling, refreshing sensation & have a mild anti bacterial effect on nicks & cuts. Brisk upward application of toners helps remove dead skin cells. Ideal for oily skins.
People with dry & normal skin should use them every third day or so.

MOISTURIZERS :- Preservation of moisture is the most important aspect of skin care, Surface skin cells need at least 10%-20% water to remain healthy and good looking . Moisturizers are the products that attempt to slow down the water loss & help the skin preserve youthfulness.

NOURISHERS:- Nourishers are cosmetic preparations which are supposed to be left on the skin overnight serve to provide vital nutrients to the skin which may have been lost during the day.

Skin Care Routine

The General Skin care regimen comprises of cleansing, toning , moisturizing, Nourishing, & Protection which are described below for different skin types.

Skin Care Routine for Normal Skin

a. Cleansing

. Use a Cleansing milk to remove dirt twice a day and always before bed time.
. Use a face wash to deep cleanse and surface residues after using a cleansing milk.
. Use a scrub twice a week to remove dead skin cells etc.
. Use a deep pore cleansing face mask once a week.

b. Toning

. Use a toner every day to stimulate and refresh the skin.

c. Moisturizing

. Use a moisturizer with a low oil content twice a day.

d. Nourishing

. Use once a day during summer and twice a day during winter.

e. Protection.

. Always use a sunscreen lotion or cream before going out in sun

Skin Care Routine for Dry Skin

a. Cleansing

. Use a Cleansing milk to remove dirt twice a day and always before bed time.
. Use a face wash to deep cleanse and surface residues after using a cleansing milk.
. Keep your face moist as much as possible by sprinkling water and by regular moisturizing after face wash.
. Use a scrub once a week to remove dead skin cells etc.
. Use a deep pore cleansing face mask once in a fortnight.

b. Toning

. Use a toner two to three times a day to stimulate and refresh the skin .

c. Moisturizing

. Use a moisturizer with a medium oil content twice a day or every time after cleansing your face.

d. Nourishing

. Use once a day during summer and twice a day during winter.

e. Protection

. Always use a sunscreen lotion or cream before going out in sun.

Skin Care Routine for oily Skin

a. Cleansing

. Use a deep cleansing face wash twice a day to keep your skin from oil, dirt. bacteria and toxins.
. Avoid using Oily creams and cleansers on your face.
. Twice a week use a facial scrub and a deep pore cleansing mask.

. Use an oil free anti microbial or anti-acne preparation to keep acne problem in control.

b. Toning

. Use a toner every day to stimulate and refresh the skin.

c. Moisturizing

. Use a moisturizer with a low oil content or oil free moisturizer twice a day.

d. Nourishing

. Avoid using Nourishing creams. Instead use a skin revitalizing Gel.

e. Protection

. Always use an oil free sunscreen lotion before going out in sun.

Skin Care Routine for Acne prone Skin

a. Cleansing

. Use a deep cleansing face wash twice a day to keep your skin from oil, dirt. bacteria and toxins.

. Avoid using Oily creams and cleansers on your face.

. Once a week use a gentle facial scrub and a deep pore cleansing mask.

. Use an oil free anti microbial or anti-acne preparation to keep acne problem in control.

. Consult a dermatologist regularly in case you have a serious acne problem.

b. Toning

. Use a toner every day frequently to stimulate and refresh the skin whole day.

c. Moisturizing

. Use a moisturizer with a low oil content or an oil free moisturizer twice a day.

d. Nourishing

. Avoid using Nourishing creams. Instead use a skin revitalizing Gel.

e. Protection

. Always use an oil free sunscreen lotion before going out in sun.

SKIN DISORDERS

The disorders of the skin summary of the various are discussed in the first part of this course, however only a brief skin disorders is given below;

ACNE

ACNE is an inflammation of the sebaceous glands, usually on the face. It is most common in the adolescence and often clears up later. Stress and unbalanced diet can aggravate it. Try to keep the skin clean and do not prick or squeeze the spots.

ATHLETHE’S FOOT

Athlete’s foot it is a fungicidal infection which attacks the feet and mainly lodges between the toes.
This results in itching and unpleasant odor. It is often caused by excessive sweating or not drying between the toes. It can be avoided by keeping the feet clean and dry. Using a foot powder and changing socks and stockings frequently.

BLISTERS

Blisters are thin bubbles on the skin which contain a watery substance and are caused by constant rubbing on the same spot.

BOILS

These are painful inflamed swelling which can occur when the body is run down, or where there is a shortage of mineral salts, or because of constipation or lack of exercise.

BRUISES

Bruises are injuries to the skin caused by a heavy blow or blows producing discoloration and some pain according to the severity of the blow.

BURNS AND SCALDS

Burns are injures caused by heat.

CHILBLAINS

Chilblains are painful red swellings which appear on extremities, hands, feet and ears in cold weather.

COLD SORES

Cold sores are clusters of little blisters which usually appear on the face at the onset of a cold. The virus lives in the system and if the cold sores appear too often a doctor should be consulted.

CORNS

These are small, hard growths of dead tissue which usually appear on the toes or foot and are caused by continuous pressure or friction. III-fitting shoes are the worst offenders.

CUTS

Cuts and abrasions are shallow wounds where skin is grazed may be by a fall or scratched by a sharp object. Deep cuts should be seen by a doctor

ECZEMA

This is a skin disease which effects the young and old and is often caused by allergy to certain food, stress etc. Small red patches appear on the skin which are extremely itchy. These turn into little blisters and become dried and scaly.

BLACK HEADS

Black heads are the result of the pores of the skin becoming clogged with oil which turns black once open to the air. To prevent them forming thorough cleansing of the skin is required.

CALLUSES

Calluses are local thickening of the skin and usually appear on the heels ,elbows and the palms of the

hands, places which are abraded by constant friction. They are unsightly dry , hard patches on the skin.

DANDRUFF

Dandruff is a disorder of the scalp which results in dry dead tissue flecking off the scalp. Mild cases can be dealt with in the home where the diet should consist of lean meats salads, vegetables, and plenty of fresh fruits.

PUFFYEYES

Puffiness around the eyes is often caused by tiredness, reading and sewing in insufficient light.

FRECKLES

Freckles are small, brownish-yellow spots on the skin which appear on face and arms. There is a number of herbs which can be tried and which may help to fade the freckles.

SPOTS AND PIMPLES

Spots and pimples are unsightly eruptions which appear mainly on the face and cause discomfort and irritation. Care should be taken not to pick or scratch the spots as this can cause further infection.

SUNBURN

The is the result of over long exposure of the skin to strong sunbathing, for most people should be limited to fifteen minutes per day. For mild cases of sunburn there are remedies which will help to soothe and ease the sunburn.

THREAD VEINS

Thread veins usually appear on the face and legs and are difficult to remove. The skin should be protected at all times from extreme temperatures by the use of creams and lotions.

WRINKLES

Wrinkles often appear earlier on a dry skin than they do on an oily skin. But wrinkles usually come with the advancing years because the processes whereby the skin casts of the dead cells which rise to the surface slow down. Treatment can help to ward off early wrinkles and reduce and soften others.

CREAMS & LOTIONS

INTRODUCTION

The manufacture of creams and lotions dates back to the earliest times when these were prepared by digesting aromatic gums, resins, roots, flowers etc. with fats and oils. Basically creams and lotions are emulsions which are relatively stable mixtures of oils and water soluble substances together in the presence of an emulsifying agent. Emulsions in the form of creams and lotions form a very important part of the cosmetics market, and much time is spent in the in the development of new raw materials by both suppliers and cosmetic companies. Creams are for the most part solid or liquid emulsions. If they set solid, they are emulsified in the molten state by heating the ingredients to liquify them and permit them to solidify after being filled into the pack-ages. These emulsions are either oil in water or water in oil type though the former type of emulsion predominates

in the cream field. Only in a limited number of cases creams are not emulsions but mixtures closely resembling low melting ointment bases. These consist mostly of petro-Latium waxes and fats and contain a negligible or a small quantity of water. The introduction of numerous new emulsification aids and cream bases has made possible in the recent years to manufacture a great variety of creams than was formerly possible. With numerous combinations of these newer products with the old bees wax mineral oil-borax water cream type innumerable cream formulations may be revised. No work on cosmetics could hope to include the entire range of creams. Hence it would be worthwhile to broadly classify the creams;

1. Cold creams
2. Cleansing creams
3. All purpose creams
4. Emollient creams
5. Skin protective and hand creams
6. Vanishing creams
7. Foundation creams
8. Liquid creams
9. Miscellaneous creams

In the manufacture of creams it would be worthwhile to touch on the basic raw materials used.
These include water, petroleum oil derivatives, oils, fats, and waxes and derivatives therefore comprise an essential portion of a cream oils may be two types-mineral and glyceride. Glyceride oils are derived from vegetable oils and mineral oils are hydrocarbons derived from petroleum oil.
Fats like cocoa butter or stearin are also glycerides containing fatty acids of higher molecular weight. They also exhibit chemical properties similer to vegetable oils. Paraffin waxes waxes and petroleum jellies also are merely higher homolog of mineral oil and hence they also act in the same way chemically as the mineral oil do. Waxes used in creams and other cosmetics include bees wax, carnauba wax, candelilla wax, montan wax, ceresin, ozokerite, Japan wax, and spermaceti out of which bees wax and spermaceti are of animal origin and carnauba, candelilla and Japan wax are of vegetable origin. Montan a vegetable wax and ozokerite a mineral wax are both derived from lignite. Out of these waxes bees wax, ceresin and spermaceti are the most important for cosmetics.

LOTIONS

These are liquid applications mainly for the skin to produce a beautifying effect. The main characteristic sought after by the application of lotions is emollient and soothing affect. In classifying lotions we can as well designate them as (a) Liquid creams, (b) Lotions containing gums and (c) thin lotions made without gums. Gums and similar substances are added to lotions to add body, lubrication and produce emollient and soothing effects. The raw materials generally used in making lotions include water, glycerin and other humectants, alcohol, gums and similar thickness, astringents, antiseptics, cooling agents and miscellaneous ingredients.

CLASSIFICATION OF SKIN CREAMS

Cosmetics creams are marketed and sold on the basis of their function which is advertised boldly on the packaging which contains them. Thus consumers have come to learn what type of emulsion. They can

expect from a far market, Cold Cream or Night Cream. However this is not a particularly precise means of classification since the number of variations in appearance, texture, subjective feel, ease of spreading and speed of rubbing in far outnumber the number of functional categories and there is, perforce, a considerable amount of overlapping. The consumer, therefore, is likely to make his or her own judgment on the subjective features, using the manufacturers functional labels as a guide to end use and quality.

CHARACTERISTICS OF SKIN CREAMS

Functional Property	Physicochemical Property	Subjective Property
Cleansing Creams Cold Creams Massage creams Night Creams	Medium-to-high oil content Oil-in water or water in oil Low slip-point oil phase Neutral pH May contain surfactants to improve penetration and suspension properties.	Oily Difficult to rub in May be stiff and rich Also popular as lotions.
Moisturizing Creams Foundation creams Vanishing creams	Low oil content Usually oil-in water Low slip-point oil phase Neutral to slightly acidic pH May contain emollients and special moisturizing ingredients	Easily spreadable and rub in quickly. Available as creams or lotions
Hand & body cream protective	Low to-medium oil content Usually oil in water Medium slip-point oil phase May have slightly alkaline or acidic pH	Easily spreadable but do not rub in with the ease of vanishing creams Very popular in lotion form

CLEANSING CREAM

INTRODUCTION

The original cleansing cream was based on one of the oldest known emulsions and is commonly known as a cold cream. It was traditionally based on a mixture of natural waxes and vegetable oils
(beeswax and olive oil) stabilized with borax. At the turn of the century, mineral oil replaced the more unstable vegetable oils. In a cold cream the proportion of fatty and oily material predominates, but application to the skin results in a cooling effect which is produced from slow evaporation of the water contained in the emulsion. Replacement of part of the mineral oil with up to 15% of petroleum jelly can be used to produce different textures and consistencies. Further substitution with fatty acid esters such as isopropyl myristate improves the thyrotrophic behavior of the cream, thus improving its spreading properties.

PROPERTIES OF A GOOD CLEANSING CREAM

The properties required of a good cleansing cream are :-

1. It should be stable and have a good appearance
2. It should melt or soften on application to the skin.
3. It should spread easily without too much drag.
4. During application, it should not feel greasy or oily.
5. After evaporation of any water, the cream residue should not become viscous.
6. As physical action on the skin and pore openings should be that of flushing rather than absorption.
7. A light, emollient film should remain on the skin after use of the cream.

DIRECTIONS FOR USE

The directions for use of a cleansing cream or lotions are standard. The general practice is to apply the cream to face and throat with finger tips. A rotating upward stroke o the fingers is used to spread the cream. A tissue or soft cloth is then used to remove the residue on face and throat.

TYPE OF CLEANSING CREAMS

White , emulsified or cold creams are classified into two categories. Beeswax-borax type cream.
Translucent, liquefying type, usually anhydrous in character, and consisting of a mixture of hydro-carbon oils and waxes.

MOISTURIZERS

Introduction

Since dry skin lacks water, there are a number of ways that cosmetic formulation can temporarily reverse this by a process called miniaturization. This is the ability of a preparation to increase the water content of the non-viable epidermis, that is the stratum corneum. Moisturizing creams, gels and lotions are applied for the relief of the signs and symptoms of dry skin leaving it soft and smooth. The skin scales become more pliable and transparent and therefore less visible, and the appearance of the skin shows a dramatic improvement.

DAY MOISTURISERS

Day moisturizing products tend to be light, oil-in-water emulsions which are designed to spread easily and rub into the skin quickly. They like liquid foundation creams have evolved from the traditional vanishing cream system which is an oil-in-water emulsion that is based on high quality stearic acid as the oil phase. Commerical triple - pressed stearic acid consists of a mixture of stearic and palmitic acid with tiny amount of oleic acid. Partial neutralization of the fatty acid (16-
20%) with a base such as triethanolamine or potassium hydroxide produces a soap which constitutes the emulsifier system. The nature of the neutralizing base plus the degree of saponification will determine the consistency and texture of the cream. For instance, potassium hydroxide will produce harder soaps than triethanolamine.

Examples of simple vanishing creams are shown in Formulae No A and B. These soap-based oil-in-water creams give a wet feel on the skin when first applied. They do not rub in well and appear soapy and white Traditionally excess stearic acid was used to counteract this but left a tackiness on the skin when the vanishing cream's water had dried out. It also tended to make the cream thioxtropic and appear thin when applied. The addition of dimethicone copolyols is another method of overcoming the soapiness.

Secondary emulsifiers such as self-emulsifying glyceryl monostearate and other non-ionic surfactants such as polyethylene glycol esters and fatty alcohol ethers can be used to prevent any skin dryness which may result from use of the alkali-stearate soaps. Other emulsion stabilizers include the carbomers and fatty alcohols such as cetyl alcohol. Cationic surfactants, such as stearalkonium chloride, are used to a lesser extent as emulsifiers. Because of their substantivity to the skin, they may be used to give an additional smooth skin feel after application.

NIGHT OR MASSAGE CREAMS

INTRODUCTION

Night or massage creams are designated to be left on the skin for several hours or to remain mobile on the skin even after vigorous rubbing. These are therefore composed with a substantial oil phase which will spread easily without disappearing but also without rubbing off onto clothing or bed linen in use. Such creams generally have a high-oil-content and are water-in-oil type having a soft solid or viscous liquid characteristics.

Massage has a valuable part to play in skin that vigorous rubbing of the skin helps to prevent the build-up of excessive numbers of dead surface cells and keeps the epidermal blood supply in good condition. The term moisturizing has also been applied to water-in-oil creams of this type. With the advances in scientific research on skin care which have taken place during the recent years the concept of moisturizing has broadened beyond the simple occlusive skin barrier principle, many modern moisturizing creams are comparatively light and easy to rub as compared with those of the overnight and massage type, although there still remains a market for the however moisturizing creams. Besides the constituents which can be shown to have a moisturizing effect or a UV-filtering effect, claims have been made, from time to time that materials have been discovered which have a beneficial effect on the skin and these often find their way into night or massage creams. Prominent among these are 'natural' products particularly vitamins. Some of such products are royal(bee) jelly and pollen which have been stated to have almost magical properties chiefly by ingestion, but also by topical application and these are based largely on the vitamin B-content. Other vitamins uses in the formulations are

Vit-A, Vit-B, Vit-C, Vit-D, B complex, Vit-E and Vit-H. Other predominant oil

ALL PURPOSE PRODUCTS

INTRODUCTION

As their name suggests, all purpose creams and lotions can be used as a moisturizer or a cleansing cream on the face, hands and body. A simple all-purpose cream can be formulated with polypopylene glycol (PPG) stearyl ether as the emollient and stabilized with stearyl alcohol and non-ionic emulsifiers (Formula A). Formula B describes a cream with a high mineral oil content.

The latter combines efficient soil removal with emolliency.. All purpose milks have become popular because of their light texture and ease of spreding . In formula - C heptamethylnonane and PPG-15 stearyl ether/cyclomethicone together with paraffin oil ae used for their emolliency. Urea is included for its moisturizing propeties. An attractive microemulsion gel No. D can be formulated using an emulsifier with a high HLB number such as ceteareth-30 (Emulgin B-3-Henkel).

The octyldodecanol and PEG-7 glyceryl cocoate exhibit both emollient and emulsifying properties.

ASTRINGENTS AND SKIN TONICS

INTRODUCTION

Astringents are a class of materials which are identified by their local effect on skin when applied topically. These effects may include all or some of the following (not all astringents are equally active): the erection of hairs, the tightening of skin (or at least the sensation of tightening), the temporary reduction of pore size, anti perspirancy, the mitigation of oily skin; the rapid coagulation of blood from a fresh wound, skin healing, the promotion of tissue growth and other, more subjective sensations such as a refreshing or invigorating feeling. While these beneficial properties ensure that astringents are regarded as important and valuable cosmetic materials, not all the claims made for them can be substantiated by careful experiment.

Chemically, the known astringents can be placed, with few exceptions, into one of three categories: metal salts of organic or inorganic acid, low-molecular weight organic acids and the lower alcohols. It is not without significance that all three categories have in common the ability to precipitate proteins from their suspensions.

ANTI-ACNE PREPARATIONS

Introduction

In spite of much research, modern treatment for acne consist of containment until the condition clears up of its own accord. Successful treatment, limited though it may sometimes be, tends to be time-consuming and repetitive. However, two lines of approach are simultaneously available.

The first of these involves the use of peeling agents for the rapid and effective removal of keratinized squamous cells of the horny layer which, if allowed to accumulate at the skin surface, make the formation of a comedown much more likely. Secondly, very thorough cleansing of the affected parts of the skin-particularly with some of the germicidal cleansing products already referred to will help keep the proliferation of the acne bacilli under control.

Among the peeling agents commonly used are resorcinol, sulphur and benzoyl peroxide and these (particularly the latter) have been shown to be valuable in this limited role. Salicylic acid is sometimes

incorporated, probably in an attempt to reduce the irritant effect of benzoyl peroxide. Guanidine and its compounds have also been used for the same purpose although the extent of the irritation caused by the peroxide appears to depend on formulation variables, particle size and on the quality of the raw material itself. A selection of published peeling creams and lotions is given below. The formulator should avoid the use of organic amines and inorganic hydroxides since, like most organic peroxides. Benzoyl peroxide decomposes in alkaline solution to give hydrogen peroxide.

SUNTAN AND ANTI-SUNBURN PREPARATIONS

Introduction

Depending upon length and frequency of exposure to sun light the human body may exhibit beneficial or harmful effects. A moderate exposure to sun light particularly in winter pleases human beings, stimulates blood circulation and increases the formation of haemoglobin. Sun-light also activates 7-dehydrocholesterol (pro vitamin D3) present in the epidermis to form vitamin D which is important for absorption of calcium from intestines.

Prolonged exposures or repeated exposure to sun light affect human beings adversely. Sunlight is composed of radiations of different wavelenghts. Radiations of different wavelengths have different penetration power. Radiations of wavelengths 2000-2500 A^0 penetrate also the network of blood vessels reaching the papillary layer. Radiations of wavelenghs3200-3900 A^0 reach the derma. Radiations of wavelengths between 2800-3200 A^0 are both erythemogenic (capable of producing redness) and pigmentogenic. Radiations of wavelengths of 3200-3900 A^0 are pigmentogenic but produce only a little erythema. Radiations of more than 3900 A^0 (3900-14000A^0) have heating action.

The first effect of sun light is the erythema (redness) of the skin followed by formation of a tan.
Intensity of erythema depends on absorption of ultra violet radiation and usually starts to develop after a latent period of 2 to 3 hours. The maximum intensity is reached within 10 to 24 hours.

The sun tanning depends on one's capacity to produce pigment melanin. This capacity is genetically predetermined. There are three types of skin tanning:
Immediate tanning,
Delayed tanning,
True tanning.
Immediate tanning response is elicited by radiations of wavelengths of 3000-6000 A^0, the maxi-mum efficacious being 3400-3600 A^0. In this response, immediate darkening of un-oxidized melanin granules present in epidermal layer near the surface of the skin starts and reaches its maxi-mum within about one hour. In the delayed tanning melanin granules present in the basal cells layer of epidermis get oxidized and migrate towards surface of the skin. This type of tanning may start one hour after the exposure and may reach maxima within about 10 hours. The delayed tanning is stimulated primarily by radiations of wavelengths of 2900-3200 A^0. True tanning or melanogenesis starts about two days after exposure & reaches maxima in about 2-3 weeks. Immediate tanning beings to fade within 2-3 hours of exposure. Delayed tanning starts fading after 100-200 hours.

SUNSCREENS

The purpose of suntan preparations is to assist the skin in tanning without painful effects & the purpose of anti-burn preparations is to minimize the harmful effects of sunburn. The materials which are used for the above purpose are known as sun tanning agents and sunburn preventive agents respectively. Combining these are known as sunscreens. Sun tanning agents are those sunscreens which absorb a minimum of 85% ultra-violet radiations of the wavelengths of 2900-
3200 A0, but which transmit ultra-violet radiations of wavelengths of longer than 3200 A0 and produce a light transient tan. Sunburn preventive agents are those sunscreens which absorb more than 95% or more of ultra-violet radiations of the wavelengths of 2900-3200 A0. There are another type of sunburn preventive agents which scatter the sunlight. These include titanium dioxide, kaolin talc, zinc oxide, calcium carbonate and magnesium oxide.

FACE PACKS & MASKS

INTRODUCTION

Face packs have been used by women from very early times. In antiquity, some earths believed to be possessing miraculous healing power were used. Face packs/masks are applied either in the form of liquid or paste and are allowed to dry. With drying, tightening effect and warmth is experienced. This produces stimulating sensation of rejuvenation. Some of the face packs contain adsorptive clays. As such, when these are removed, skin debris and blackheads may be removed along with them.

Such preparations are expected to possess the following properties :

They should form a smooth paste(free from gritty particles) and should have pleasant odor.
When applied to the face, they should dry out rapidly to form an adherent coating on face. How-ever, the coating should be such which can be removed either by peeling off the face or by gentle washing without causing pain.
They should produce a sensation of tightening of the skin after application.
They should capable of producing significant cleansing of the skin.
They should be non-toxic to the skin.